THE AMERICAN UNIVERSITY IN CAIRO

Catalog Extract

2026-2027 Edition

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catalog.aucegypt.edu

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AUC reserves the right to repeal, change, or amend the rules, regulations, and courses contained in this bulletin at any time. All the materials included in this catalog edition have been approved by the AUC President.

Admission Application Target Dates

Undergraduate Admissions

Undergraduate Degree seeking applications for 2027:

Spring semester: November 1, 2026

Fall semester: Early admission: February 1, 2027

Regular admission: June 1, 2027

Non-degree/Study Abroad applications for 2027:

Winter session: November 1, 2026

Spring semester: November 15, 2026

Summer session: May 1, 2027

Fall semester: May 15, 2027

Readmission applications for 2027:

Winter session: December 27, 2026

Spring semester: January 25, 2027

Summer session: May 31, 2027

Fall semester: August 29, 2027

Auditors:

1st week of classes

ALI applications for 2027:

Spring semester: December 27, 2026

Summer session: May 8, 2027

Fall semester: July 15, 2027

Graduate Admissions

Degree-seeking applications and non-degree applications for 2027:

Winter session: NA

Spring semester: October 1, 2026

Summer session: NA

Fall semester: Regular Admission: December 15, 2026

Late Admission: April 1, 2027

Exchange and Study Abroad applications through agreements with partner universities:

Winter session: NA

Spring semester: December 31, 2026

Summer session: NA

Fall semester: July 31, 2027

Graduate readmission:

Winter session: December 10, 2026

Spring semester: January 10, 2027

Summer session: May 10, 2027

Fall semester: August 10, 2027

US citizens intending to apply for federal loans:

Fall semester: December 15, 2026

Important notes:

- Graduate admission applications can only be processed for the following admission cycle and processing will not start any sooner than one month before the following deadline.
- Applicants are advised to apply by the December 15 deadline for Fall admission.
- Applicants interested in an early admission decision for the Spring semester, should consider applying by the preceding April 1 deadline.
- Admission applications must be successfully submitted 5 working days before applicants can submit fellowships or financial aid applications.

Contact us

Office of Enrollment, Admissions and Student Services Center

tel 20.2.2615.4040

e-mail enrolauc@aucegypt.edu

The University

- Statement of Mission and History
- Non-Discrimination Policy
- Accreditation

- Leadership
- Academic Administration
- AUC Faculty
- Campus
- AUC Profile
- Financial Support

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- The Admission Decision
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- Arabic Language Placement

Admission Policy and Procedures

The American University in Cairo admits undergraduate and graduate degree-seeking applicants for the fall and spring semesters. The university welcomes the applications of Arabic Language Institute, Study Abroad and non-degree applicants for the summer session, as well as the fall, spring and winter semesters.

The university, in keeping with the long-standing protocol with the Egyptian government, maintains an enrollment of undergraduate degree-seeking students that is at least seventy-five percent Egyptian. Accordingly, AUC establishes quotas regarding the offer of admission and enrollment of non-Egyptian students.

Applicants may apply for admission up to one year in advance of their anticipated date of first enrollment. The University reviews completed admission applications as per the announced deadlines. AUC cannot determine the admissibility of candidates with incomplete credentials.

All undergraduate degree-seeking admission applicants are required to submit official secondary school academic transcripts, and certificates. Applicants who have attempted post-secondary

studies must also submit official academic transcripts, and/ certificates from each post-secondary school attended regardless of whether they have earned credit or seek transfer credit. All academic records not in English or Arabic must be accompanied by certified English translations.

All undergraduate degree applicants must demonstrate proficiency in English by submitting valid scores from International English Language Testing System (Academic IELTS), the Test of English as a Foreign Language (International TOEFL), or the Duolingo English Test (DET), or completed college-level English coursework. Students may submit an improved English placement test score to the university. The deadline to submit improved English placement test scores is the last working day before the start date of the semester at 4pm Cairo time. Scores submitted after this deadline will not be considered . For exact dates, please check the academic calendar. Please note that AUC accepts only official test scores documents. Text messages from test centers will not be considered.

Non-Egyptian applicants and/or their sponsors must provide official evidence indicating that a minimum of $33,000 is available to cover the tuition, fees, travel, and living expenses for the first year of study at the University.

Academic Preparation

The University seeks highly qualified applicants who complete the most demanding courses available in secondary school. Excellent grades in honors classes indicate the applicant's ability and willingness to meet the academic challenges of university study. The University's most capable first-year applicants have achieved excellent grades while completing a well-balanced university preparatory program.

In addition, AUC considers the personal qualities of applicants - how well they have taken advantage of available resources, whether they have faced and withstood unusual adversity, and the extent to which they show promise as a contributing member of the AUC community. The University also considers applicants' personal achievements outside the classroom as demonstrated by sustained participation, commitment, and leadership in school and community activities.

English Language Proficiency

All new undergraduate students who apply as degree students and non-degree students must provide evidence of academic English proficiency with the admission application. The University does not exempt applicants from this requirement solely on the basis of citizenship or graduation from an English-medium secondary school.

Applicants who satisfy one or more of the following criteria qualify for exemption:

- Satisfactory scores on appropriate standardized tests and College Board exams.
- Successful completion of one or more non-remedial academic writing course in a post secondary institution whose English language admission requirements are recognized and approved by the office of Registrar at AUC.
- Successful completion of English-medium secondary school coursework and examinations that qualify for advanced placement.
- An applicant who attended three or more semesters at a university where the language of instruction is English.

- Students in the following programs are exempted from the English language proficiency requirement:
    - Study abroad applicants from English-medium universities
    - Center for Arabic Study Abroad (CASA) students
    - Arabic Language Institute (ALI) students. While the submission of English proficiency test results are not required, you must be able to read and write in English to study at the Arabic Language Institute.

Applicants not exempted are required to submit valid official test results from the Academic IELTS, international TOEFL, or DET. Tests must be completed no more than two years prior to the first day of the term for which applicants are applying for admission.

The University determines English Language placement using applicants' highest score from an aforementioned approved English performance exam. AUC may offer applicants that do not qualify for the Rhetoric and Composition freshman courses the opportunity to enroll in AUC's Intensive English Program (IEP) or Academic English for the Liberal Arts (ENGL 0210/ENGL 0211).

Both the Intensive English Program (ELIN 0101/ ELIN 0102) and Academic English for Liberal Arts (ENGL 0210/ENGL 0211) serve as the University's bridge courses to Rhetoric and Composition.

ELIN 0101/ ELIN 0102 students must complete the program (which may include taking both classes depending on placement and English performance) within a time period not to exceed two full semesters and a summer session.

All students who have been admitted into ENGL 0210 or ENGL 0211 must satisfactorily complete the course work within a time period not to exceed two full semesters and a summer session. Students taking ENGL 0210 or ENGL 0211 in summer may not enroll in any academic courses.

The Admission Decision

The undergraduate admission application review process at the University requires evidence of successful completion of an accredited secondary school program, as well as success in collegiate studies (if applicants have enrolled in a post-secondary program). The quality of work, appropriateness of program, and academic standing among peers are also important considerations. Applicants who have selected a rigorous academic program and who have achieved distinction in a range of academic courses are the most likely candidates to receive an offer of admission.

The University's most qualified candidates have earned excellent grades in their courses. When determining admission, the University considers a combination of factors including academic grades and test scores, as well as diversified background, and participation in extracurricular activities. The vast majority of those applying to AUC are capable of succeeding scholastically at the University. Many more academically qualified students apply for admission than there is room available. The University's task is not simply to select those who are qualified, but to identify those who have distinguished themselves. Applications submitted beyond the deadline dates will be wait listed and may be considered pending space availability only.

Admission to an Undergraduate Degree Program

AUC accepts high school graduates holding the Egyptian Thanawiya Amma, the British secondary school certificate (GCE, GCSE, IGCSE), the American High School Diploma, the French Baccalaureate, the International Baccalaureate, the German Abitur as well as other equivalent certificates recognized by the concerned Egyptian authorities.

A complete file with all required credentials must be submitted to be considered for admission. Information about the required credentials is available at: www.aucegypt.edu/admissions

AUC's minimum requirements for new applicants vary by the type of secondary program. Because of the large number of qualified applicants, those offered admission generally score well above the following minimums:

- Egyptian Thanawiya Amma - Arts, or Science (General Secondary School Certificate). Submit the results of the final sitting of the Thanawiya Amma. Applicants must earn at least 70 percent on the final sitting for admission consideration.
- Thanawiya Amma from Arab countries - Arts, or Science (General Secondary School Certificate). Submit the results of the final sitting of the Thanawiya Amma. Applicants must earn at least 75 percent on the final sitting for admission consideration.
- GCE/GCSE/IGCSE: Submit eight subjects. Applicants who have completed Advanced/Advanced Supplementary level subjects and have earned excellent grades are given preference. For admission consideration, grades 'A to C' are accepted at the

Ordinary and Advanced Supplementary levels and grade 'D' is accepted at the Advanced level only. Subjects completed at the Advanced and Advanced Supplementary level are not double counted, and only the higher grade is considered. Applicants must submit all certificates to the University. However, AUC utilizes only the best eight subjects during the admission evaluation process.

- American High School. Complete a college preparatory program of courses and earn a high school diploma with at least a 2.0 (on a four-point scale) grade point average in academic courses. The minimum SAT-I score is 950 or a minimum composite score of 20 on the ACT for admission consideration. Applicants who have attended an accredited high school for less than three semesters must also submit official results of 2 subject tests of their choice: either SAT-II in two subjects with a total score of 1100 and a minimum score of 500 on each subject or ACT-II in two subjects with a minimum score of 22 on each subject.
- French Baccalaureate. Applicants with a minimum average of passable will be considered for admission.
- International Baccalaureate. Holders of the International Baccalaureate (IB) diploma will be considered for admission provided that they have completed their diploma requirements and meet the admissions scores for the applied semester. Holders of IB certificates may be accepted, provided they successfully complete the AUC admissions requirements for the high school diploma or British certificate.
- German Abitur. Applicants with a minimum academic average of 4 will be considered for admission.

Medical Insurance for Non-Egyptian Applicants

It is recommended that non-Egyptian students have health and accident insurance which will cover them while they are in Egypt. In addition, all non-Egyptian students are required to enroll in the medical insurance service plan offered by the American University in Cairo which provides for limited care at a specified hospital in Cairo. Exemptions are made only for those non-Egyptian students who reside in Cairo with their families, or who are provided for by their companies, embassies or sponsoring agencies in Cairo. The medical service fee is announced by the Office of Student Financial Affairs every year.

Transfer Admissions

Applicants who have attempted post-secondary school studies of an advanced-level subjects or at a university level during or following their secondary school program are transfer applicants. These students are classified as follows:

Lower Division Transfer Student (LDTS)

A lower division transfer student is an applicant with less than 60 transferable units (with a minimum grade of C in each subject). A transfer applicant will be held to the same standards as a "first time freshman." In addition, applicants must be in good academic standing at all previously attended universities and have an overall university grade point average (GPA) of 2.0 or higher for admission consideration. Admission is based on the available places and the student academic performance.

Upper Division Transfer Student (UDTS)
An upper division transfer student is an applicant who is evaluated at the admission stage to have 60 or more eligible credits for transfer consideration (with a minimum grade of C in each subject). However, beyond the admissions stage, the number of transfer credits that will be granted to this applicant will be subject to the academic department's evaluation and decision. Applicants in this category must have a 2.00 average or higher in all transferable college course work in order to be admitted. Although each applicant in this category is required to have earned a secondary school certificate, the grade point average (GPA) of this certificate will not be considered a factor in the admissions process.

A transfer student is not guaranteed acceptance into his/her current major. Admission to the same major is ultimately decided upon by the School Dean.

Transfer Credit Award

The University awards transfer credit for coursework completed at post secondary institution and/or advanced level subjects completed within the certificates mentioned below. Transfer credit is granted for coursework that is comparable in nature, scope, content, and depth; in addition to the appropriateness and applicability of the credit earned to the courses at AUC. Studies completed more than five years prior to matriculation into the university are not transferable. The University awards transfer credit to two categories of students:

1. Applicants who are transferring from accredited post-secondary institutions and have taken courses at the university level. The university awards transfer credit to students who complete coursework in fields of study that are comparable to those offered by AUC, with a minimum grade of "C" from institutions operating in the USA, a minimum grade of "Good" from the National Universities of Egypt, and equivalent grade to a "C" (at AUC) from other institutions. The determination of transfer credit award occurs following the submission of an official academic transcript, the university catalog, as well as required course-related materials. Internships, Occupational, vocational, remedial coursework, and studies classified as less than first-year (Freshman) level by the sending institution or AUC are not transferable. Credits earned to satisfy the requirements of a previous degree are not considered for transfer credit.

The transferable coursework must have been completed at post-secondary institutions that are recognized by the Ministry of Higher Education, and/or the Supreme Council of Universities, depending on the country in which the institution is operation. Post-secondary institutions in the United States must be accredited by one of the following six "Regional Accrediting Organizations":

- Middle States Association of Colleges and Schools, Commission on Higher Education
- New England Association of Schools and Colleges, Commission on Institutions of Higher Education
- North Central Association of Colleges and Schools, the Higher Learning Commission
- Northwest Commission on Colleges and Universities
- Southern Association of Colleges and Schools, Commission on Colleges
- Western Association of Schools and Colleges, Commission for Senior Colleges and Universities

2. Applicants who have completed collegiate-level studies, prior to matriculation into the university, with a grade that is comparable to at least a "B" at AUC.

The following is the policy applied in relation to the different certificates:

o International Baccalaureate Diploma/Certificate

The University grants up to 30 transfer credit for the IB Diploma as follows:

- Transfer credits for higher level academic subjects with grade of five, six or seven (out of seven).
- Up to 15 credits of lower-division general elective transfer credit for the completion of the IB Diploma with a minimum total point of 30.

The AUC does not grant transfer credit for subsidiary level subjects.

o The College Board Advanced Placement (AP) Examinations.

The University grants transfer credits for academic subjects with scores of four or five (out of five).

o German Secondary School Certificate-Abitur

The University grants up to 30 transfer credits for academic subjects with scores of ten or more (out of 15).

o French Baccalaureat II

The University grants up to 30 transfer credits for academic subjects with advanced level scores of 14 or more (out of 20).

o GCE/GCSE/IGCSE

The University grants transfer credits for A-level subjects with grades of "A" or "B". The University does not grant transfer credit for subjects completed at the AS, AL, or O' levels.

Transfer Credit After Matriculation

The University transfers a maximum of 36 hours of semester credit from other post-secondary institutions after students enroll at AUC. The University awards a maximum of 12 credit hours for coursework completed in any one summer. (Students may not enroll in more than 12 credits in any one summer, AUC summer courses included.) The University transfers a maximum of nine credits for courses completed through correspondence and/or distance learning following matriculation. Students may not enroll in correspondence courses offered by other institutions during academic terms in which they are registered for courses at AUC.

Readmission

AUC students who withdraw from the University in good standing and subsequently wish to return after an absence of one or more semesters may apply for readmission. Readmission is offered on a space-available basis and is not guaranteed. According to the table and study gap, readmitted applicants must submit recent Academic IELTS, International TOEFL, or DET results with their readmission application.

Course Level Successfully Completed at Time of Withdrawal	IELTS/TOEFL/DET Required If Study Gap greater than	Description
RHET 1020	4 semesters*	If the student passes RHET 1020 and left AUC more than 4 semesters, she/he should submit a new IELTS/TOEFL/DET with a score for RHET 1010 level, and she/he will complete their studies without repeating the RHET 1020
RHET 1010	2 semesters*	If the student passes RHET 1010 and left AUC more than 2 semesters, she/he should submit a new IELTS/TOEFL/DET with a score for RHET 1010, and she/he will register in RHET 1020

ENGL 0210 /ENGL 0211	2 semesters*	If the student passes ENGL 0210/ENGL 0211 and left AUC more than 2 semesters, she/he should submit a new IELTS/TOEFL/DET with a score for RHET 1010, and she/he will register in RHET 1010
IEP (ELIN 0102)	2 semesters*	If the student passes ELIN 0102 and left AUC more than 2 semesters, she/he should submit a new IELTS/TOEFL/DET with a score for ENGL 0210/ENGL 0211 or higher, and she/he will register in ENGL 0210/ENGL 0211 or higher.
IEP (ELIN 0101)	2 semesters*	If the student passes ELIN 0101 and left AUC more than 2 semesters, she/he should submit a new IELTS/TOEFL/DET with a score for ELIN 0102 or higher, and she/he will register in ELIN 0102 or higher.

*Summer or Winter are not counted as semesters.

Study Abroad/Non-Degree Admissions

Degree-seeking students at other recognized institutions who wish to augment their education by enrolling for a period of time at the American University in Cairo are invited to apply for admission as visiting Study Abroad/Non-Degree students.

Since AUC is both a US-accredited institution, and one recognized by the Ministry of Higher Education in Egypt, students from most universities around the world are able to transfer credits earned at AUC to their home institutions.

Study Abroad/Non-Degree applicants must submit application materials that include post-secondary school transcripts, letters of reference, and a study plan approved by their home university. Information about the application deadlines and the specific documents that applicants must submit to complete their files available on the AUC website at: www.aucegypt.edu/admissions

Change of Status from Non-Degree to Degree

Upon request, the university may approve a change of status from Non-Degree to degree seeking. The student should submit an undergraduate application in the Admission office and submit all

the relevant documents. Courses taken in undergraduate non-degree status are then transferred to the degree record and all grades are considered when calculating the grade point average.

Auditors

Individuals who wish to attend individual classes without credit may apply as auditors. Auditors are not eligible to sit for final examinations, receive academic credit, or enrollment certification from the University. Permission to audit is granted on a space-available basis. Auditors generally enroll during the late registration period after other students have had an opportunity to register. Auditors are not allowed to enroll in language courses.

The Department of Arabic Language Institute

The Department of Arabic Language Instruction is one of the most respected Arabic language study programs in the world. The department offers intensive programs beginning three times each year that range in length from eight weeks to one or more years. It also offers courses to fulfill the Arabic Language requirements of undergraduates at AUC. The department's world-class faculty teaches classes in Modern Standard Arabic, Classical Arabic, and Egyptian Colloquial Arabic at the elementary, intermediate, and advanced levels. The department's programs culminate in certificates of achievement recognized around the world.

The Department of Arabic Language Instruction applicants submit completed application forms, as well as other credentials mentioned on our website: https://www.aucegypt.edu/academics/arabic-language-instruction

Students registered to the ALIN wishing to change their program to AUC undergraduate, graduate and non-degree programs have to satisfy the admission requirements listed in the catalog for these programs.

Arabic Language Placement

All non-Thanawiya Amma students should sit for an Arabic placement exam, administered by the ALNG Unit, to determine the Arabic language course level they must register for. According to the exam results, students may be exempted or required to take one or two Arabic language courses (3 or 6 credits).

Non-degree and study abroad students sit for an Arabic placement exam if they are registering for an Arabic course higher than ALNG 1101 (Elementary Modern Standard Arabic) or ALNG 1501.

Undergraduate Academic Requirements & Regulations

Student Responsibility

Students are responsible for familiarizing themselves with the information presented in this catalog and for observing all policies and procedures related to their participation in the university community. In addition, AUC has adopted a set of policies and procedures concerning the statutes and regulations on the campus. Copies of these policies and procedures may be obtained at the Office of the Registrar.

Regulations will not be waived nor exceptions granted based on a student's lack of awareness of the policies and procedures of the American University in Cairo. Although a number of university personnel (e.g. advisors, faculty members, registrar, departmental staff, and student affairs staff members) assist students, the student is personally responsible for following all policies and meeting deadlines and requirements. This responsibility includes, but is not limited to, academic requirements and the rules listed under the appropriate information sections of this catalog.

Privacy Rights of Student Records

Students have the right to access their own official records. The written consent of the student must be received before personally identifiable data is released from the student's records to any party other than the exceptions specified below.

While the university is authorized under the United States Family Educational Rights and Privacy Act of 1974 to release "directory information" about students, AUC does not publish a student directory. Student information is subject to release by the university unless the university has received prior written objection from the student specifying information that the student requests not to be released. Such written objection should be submitted to the Office of the Registrar.

AUC is authorized to provide access to student records to campus officials and employees who have legitimate educational interests in such access. These persons are those who have responsibilities in connection with the academic, administrative, or service functions of the university and who have reason for using student records connected with their academic or other university responsibilities. Disclosure may also be made to other persons or organizations under certain conditions (e.g. as part of an accreditation or program evaluation; in response to a court order or subpoena; in connection with financial aid; or to US institutions to which the student is transferring).

Click on any of the following links for information:

Undergraduate Academic Requirements
Undergraduate Academic Regulations

Academic requirements and regulations govern the relationship between the university and its students. Students must complete the general academic requirements described below as well as those listed under an individual degree program in order to obtain an academic degree.

The academic regulations described in this section are effective at the time of publication. The university reserves the right to modify them, in which case changes will be announced when necessary. The student is responsible for being aware of all academic requirements and regulations. These can only be waived by action of the university, as appropriate. Current university regulations apply regardless of the regulations in effect at the time a student entered the university, except where current regulations specifically state the contrary.

Undergraduate Academic Requirements

The general academic requirements apply to all students working toward a bachelor of arts or bachelor of science degree. These requirements reflect the university's effort to bridge two cultures. Thus the university requires a high concentration of courses in its undergraduate majors, a characteristic of Egyptian education, while at the same time requiring a core of general education, the approach taken by institutions in the United States. The main components of AUC's undergraduate programs are:

1. A Core Curriculum: foundation of general education in the natural sciences, social sciences, and humanities.
2. Arabic language requirements.
3. Concentrations: subjects in which students concentrate their studies and receive degrees.
4. Collaterals: subjects in supporting disciplines specified by the department of major.
5. Minors: subjects which students may, if they wish, study beyond the introductory level.
6. Electives: courses chosen by students in consultation with their advisers.

Residence

To obtain a bachelor's degree a student must take at least 45 credit hours of courses in residence at the American University in Cairo. At least 30 of the 45 hours must be in courses at the 3000 and 4000 levels; with a stipulation that no more than 15 transfer credits in 3000-4000 level courses, will satisfy concentration requirement of any program. The maximum credit to be considered for each program is as follows:

1. A maximum of 15 transfer credit hours in the 3000-4000 level courses in programs offered by the School of Business.
2. A maximum of 15 transfer credit hours in the 3000-4000 level courses in programs offered by the School of Sciences and Engineering.
3. A maximum of 15 transfer credit hours in the 3000-4000 level courses in programs offered by the School of Global Affairs and Public Policy except for Middle East Studies program; a maximum of 12 transfer credit hours.
4. A maximum of 12 transfer credit hours in the 3000-4000 level courses in programs offered by the School of Humanities and Social Sciences.

AUC students who join a year abroad exchange program administered by the university are exempted from the residence requirement part of maximum transfer credits in 3000-4000 level courses towards concentration requirements.

Graduation

To be awarded the Bachelor of Arts degree, students must complete a minimum of 120 credit hours (127 in Business Administration and in Accounting also 133 in Management of Information and Communication Technology) in courses in which the grades are "D" or better, and must earn a grade-point average of "C" or better, both overall and in the field of concentration. These requirements must be completed within seven years of the date of first registration as a freshman.

To be awarded the Bachelor of Science degree students must complete between 130 and 162 credit hours, depending on the major, in courses with grades of "D" or better and earn a grade-point average of "C" or better, both overall and in the field of concentration. These requirements must be completed within eight years of the date of first registration as a freshman.

Any period of withdrawal from the university is counted as part of the seven- or eight-year limit mentioned above.

Majors

The university offers courses of study leading to bachelor's degrees in various academic fields in the arts and sciences and in professional fields. Undergraduates must select a major and fulfill the requirements of the department offering the degree. The fields of major and the departmental requirements are described in the "Fields of Study" section. Academic regulations concerning the declaration of major and change of major are described in the "Academic Regulations" section.

Double Majors

Students may earn two majors in related or unrelated fields and receive one bachelor's degree. While it is acknowledged that some students will not be able to manage the heavy workload that a double major entails, the American University in Cairo enthusiastically endorses the principle that any undergraduate student should be permitted to pursue a double major, subject to the following rules:

1. Acceptance into a second major must occur before the last semester of the senior year. Acceptance into a second major will be on the same basis as if it were the first major.
2. No student will be accepted into a second major without the formal approval of the chair of the department offering the student's first choice of major as well as the chair of the department offering the student's second choice of major.
3. Any student considering a second major should review carefully the catalog descriptions of both her/his first major and his/her intended second major, paying special attention to any specific rules established by the relevant departments with regard to double majors. For example, departments may restrict the ability of one of their own majors to declare a second major by limiting the range of majors eligible as "second majors."
4. Students who are pursuing a double-major must complete all of the requirements for both majors. In the rare circumstance where one course is eligible to meet both the concentration, collateral or elective requirements of one major and also the concentration, collateral or elective requirements of a second major, this course may be counted for both majors - unless the catalog description of either major explicitly states otherwise.
5. Students must have a faculty adviser in each major. The student must meet with each of his/her advisors and plan the student's academic program. Both advisers must sign the student's registration forms.
6. One degree will be awarded upon successful completion of both majors. If one major qualifies for the bachelor of arts degree and the other for the bachelor of science degree, the student in consultation with his/her advisers will decide which degree to receive.
7. In considering whether to major in two subjects, students should be aware that it may take more than four years to complete all requirements, that scheduling of prerequisites and required courses in two majors may be difficult, and that some AUC departments, particularly those which limit enrollment, may not allow students to take a second major in their programs.

Minors

In addition to major subjects leading to a degree, students may select one or two minor academic disciplines. The minor program is available to students who would like to study a particular subject beyond the introductory courses but not to the level of expertise required for a major. An undergraduate minor introduces the student to the scope and methodology of the minor field

and is often an important auxiliary to his/her major field. The American University in Cairo enthusiastically endorses the principle that undergraduate students should be permitted and even encouraged to pursue a minor discipline that will broaden their experience at AUC and enhance the interdisciplinary character of the undergraduate programs.

Minors may be within a given discipline, or interdisciplinary. Students wishing to minor in a given discipline may do so if they satisfy the requirements of the department or unit offering the minor, using the requirements for the AUC catalog year in which they declare the related minor. Students should be aware that in some cases the minimum credit hours required for graduation may have to be exceeded. At least 15 hours of courses as specified under each field are required for a minor.

In the circumstance where one course is eligible to meet both the concentration, collateral or elective requirements of a major and also any of the requirements of a minor, this course may be counted for both the major and the minor - unless the catalog description of either the major or the minor explicitly states otherwise.

The requirements for individual minors appear under the relevant field of study. Each interdisciplinary minor is administered by a steering committee which is itself interdisciplinary. Steering committee membership is open either to all teachers in the program or to representation from each department in the program in any given year.

Students who are pursuing a minor must have a faculty adviser in for the minor. This adviser will meet with the student to review the academic requirements for the minor and the student's plans to complete these requirements.

Dual Undergraduate/Graduate Programs

A dual undergraduate/graduate degree program is an approved program in which a student pursues a graduate degree with an undergraduate degree in a related field. The total time for the two degrees could be decreased through the acceptance of up to 12 credit hours of required courses in both degrees. A student enrolled in a such a program must complete all requirements for the two degrees and is awarded both degrees at the end of the program. In this regard, this student is admitted to the graduate program before he/she have earned a bachelor's degree. The student is typically able to take both undergraduate and graduate courses for the program during his/her senior year.

A student who decides to withdraw from this dual degree program, will receive his/her appropriate undergraduate degree contingent on having completed all requirements for this undergraduate degree.

Combined Programs

Combined Programs allow students to earn both an undergraduate and a graduate degree in a timely and cost-effective way.

Combined programs allow students to begin an AUC graduate degree while still undergraduate students, and apply graduate credits completed while undergraduate students towards both the undergraduate and the graduate degrees. This typically reduces the total time spent earning both degrees.

All bachelor's degrees, on the one hand, and all master's degrees and graduate diplomas, on the other hand, can thus be joined in a Combined Program.

- Undergraduate students with an overall GPA of at least 3.0 are eligible for pursuing a Combined Program.
- An undergraduate student interested in pursuing a Combined Program between his/her bachelor's program and a master's program or a graduate diploma program at AUC must submit a graduate admission application during his/her junior year. The student must follow the graduate admission application procedures, deadlines, and requirements.
- The submitted graduate admission application is reviewed and evaluated as per the procedures in place for the graduate admission applications.
- If accepted in the graduate program he/she has applied to, the student may then register in and successfully complete up to one-third of the total credit requirements of this graduate program, with a maximum of 12 credits, during his/her senior undergraduate year. The credits, thus successfully completed, may be double counted towards his/her bachelor's and graduate degrees, conditional that a "B" grade or higher is achieved in each of the courses thus completed. The credits for any of these courses with a grade lower than "B" shall not be counted towards the graduate degree.
- A student embarking on a Combined Program must apply to and be accepted in the graduate program of his/her choice before the start of his/her undergraduate senior year. Students already enrolled in a graduate program may not retroactively use this policy. Students in their undergraduate senior year and alumni having completed their bachelor's degrees cannot use this policy.
- An undergraduate student in a Combined Program will be awarded his/her bachelor's degree at the completion of the bachelor's degree requirements. He/she will be awarded the graduate degree after the completion of the graduate degree requirements.
- For a student in a Combined Program, the bachelor's degree study duration and graduate degree study period follow the respective regulations in place and specified in the relevant sections of the catalog.
- In case a student pursuing a Combined Program decides to no longer continue with the Combined Program, all regular bachelor's program and course requirements will apply.

Completed credits from the bachelor's degree cannot be used towards the requirements of a graduate degree at a later date.

- Students pursuing a Combined Program will be considered undergraduates for the purposes of financial aid/federal reporting, tuition, class standing, and all other undergraduate academic requirements and regulations until their undergraduate degree has been awarded. Once awarded his/her undergraduate degree, the student will be considered a graduate student for the purposes of financial aid/federal reporting, fellowship support, tuition, and all other graduate academic requirements and regulations.

Undergraduate Academic Regulations

Registration

Students must register during the official registration period at the times announced in the university calendar. They should plan their courses with their advisers prior to registration and follow the instructions in the Registrar's webpage: https://www.aucegypt.edu/academics/registrar. Students must attend the section of the course for which they are registered. No instructor has the authority to permit a student to shift from one section of the course to another without following official drop/add procedures. Students are responsible for registering on time and for the correct courses. You may not attend classes without being properly registered for them, you cannot receive credit for courses in which you are not registered and students may not register or add courses retroactively.

Change of Courses

With careful attention to the degree requirements and course offerings there should be minimal need for course changes after registration has been completed. Any student who desires a course change must follow the instructions in the Registrar's webpage: https://www.aucegypt.edu/academics/registrar

- Another course may not be substituted for a required course unless university action requires that the change be made.
- Students may not drop 1000-level Rhetoric and Composition (RHET) courses without permission from the Department of Rhetoric and Composition.
- Students may drop and/or add courses without penalty during the formal "Late Registration and Course Changes Period" specified in the instructions in the Registrar's web page: https://www.aucegypt.edu/students/registrar
- A course may not be added to the student's schedule after the end of the period of Late Registration and Course Changes.

- Students may drop a course and receive a "W" grade during the seven weeks following the conclusion of any period of Late Registration and Course Changes associated with a fall or spring semester.
- Students are not permitted to drop classes after the seventh week of the closing date of Late Registration and Drop/Add operations.
- Students will receive a grade of "F" if they stop attending classes without officially dropping the course.
- Students may petition their Deans - or, in the case of non-declared students, the Dean for Undergraduate Studies and Director of the Core Curriculum - for permission to drop a class and receive a "W" grade after the seventh week of the closing date of Late Registration and Drop/Add operations. However, such petitions will be approved only in special cases, which in most extraordinary circumstances will mean documented health or family crises. Petitions will be neither accepted nor approved for the purpose of avoiding a low or failing grade.
- Fulltime international transfer students and fulltime non-declared international students may petition for permission to drop a class and receive a "W" grade after the seventh week of the closing date of Late Registration and Drop/Add operations by seeking the approval of the Faculty Advisor in the International Programs Office and then submitting the petition for approval to the responsible department chair and dean. In general, such petitions will be approved only in special cases, which in most circumstances will mean documented health or family crises.

Credit Hours

Coursework is counted in credit hours. In general, a credit hour represents a one-hour class period that requires at least two hours of individual study each week for one semester. Thus a course of three credit hours would meet for three hours a week and the student would be expected to study for six hours outside of class. Laboratory courses involve less outside work, so usually one hour of credit is granted for a three-hour session.

Independent Study

Independent study policy covers two types of courses:

1. **The Directed independent study** course covers a topic in a field of particular interest that is not available through the current course offerings. Details of the independent study should be included in a mutually agreed-upon contract between a faculty member and a student. This type of independent study can provide students with a unique opportunity to work on carefully selected projects under the direct supervision of a volunteered faculty member with shared interest. However, a directed independent study cannot be used as a substitute or a replacement for a required course within a major or a minor. The

Chair of the Department of the student's major and the School Dean must indicate on the form how the directed independent study course counts towards the fulfillment of the degree requirements. Students considering pursuing a directed independent study should prepare and submit their independent study proposal form during the semester preceding the one in which a student plans to register for such a course.

Eligibility and Requirements:

- Students who have completed a total of 60 credit hours of academic work toward a bachelor's degree (Junior- level standing or higher) and a GPA of at least 3.0 may elect to take a course through a directed independent study course.
- No more than six credit hours of directed independent study may apply toward a bachelor's degree. Students may take only one independent study course during either summer or winter sessions.
- Directed independent study courses may not be used as a substitute or replacement for required university core curriculum courses unless approved by the Dean of Undergraduate Studies and the Academy of Liberal Arts in exceptional circumstances.
- All directed independent study proposals must be signed by both the student and the faculty supervising the directed independent study, the Chair of the Department offering the course, and the Dean of the School offering the course. In addition, the Chair of the Department of the student's major and the Dean of the school of the student's major must indicate on the form where this course fits in the student's major/minor.
- With the faculty's approval, the student must submit a written learning contract detailing the expectations and requirements for the completed directed independent study course, including the number of credits to be earned and a timeline for completion agreed upon with the faculty member before the work begins. Students should expect to spend at least the same time for such a course as he/she would spend for an in-class course. Three hours of work per week is required for each semester's credit hour. In addition, students are expected to meet at least once a week with the instructor. A final mutually signed report must be submitted to the relevant Chair of the academic department by the end of the independent study.
- The course approval and registration process must be completed by the regular registration deadline. Copies of the approved proposal with the Learning Contract should be kept in the academic department office of the department offering the course and sent to the Office of the Registrar.

2. **The Curriculum-related independent study** course allows students to use an independent study course that is not a directed independent study to substitute for a required course or to complete some credits of a required course within their major or minor. This type of independent study can be used in the following situations:

- The student must complete a required course to avoid any delay in graduation, and the course is not offered in that particular semester.
- The student must compensate for credits earned at another university during a "study abroad." This also applies to transfer students who completed courses at their home institution and had these courses approved for transfer at AUC with partial credits.

The curriculum-related independent study requirements:

- The student should prepare and submit their independent study proposal form.
- Approval of the faculty supervising the curriculum-related independent study, the Chair of the Department offering the required course, and the Dean of the School offering the required course.

Class Standing

Class standing is determined by the number of credit hours completed. Students become sophomores on completing 30 credit hours, juniors on completing 60 credit hours, and seniors on completing 90 credit hours.

Admission into the Major

Students accepted at AUC may either be admitted into a particular major at the time of admission to the university (i.e., they may "declare their major at the gate" upon entry), or they may be admitted to the university as "undeclared." AUC programs that allow declaration at the gate have specific admission requirements, which students must fulfill to be admitted into their intended major. For more details, check individual program requirements.

Students who declare their major at the gate will still have the opportunity to change their major later (for more details, see Change of Major section below). Students who are not admitted into a major at the gate will be admitted to AUC as undeclared and will have another opportunity to compete for admission to their preferred majors during their first few semesters at AUC.

Students who begin their first year of studies at AUC as undeclared have the opportunity to take a variety of classes before deciding on their intended major. Students who are admitted to AUC as undeclared as well as students who wish to change their majors must meet the eligibility requirements of their intended major(s). Students must declare a major before completing 60 credit hours (i.e., before achieving junior standing).

Any student in good standing (i.e., who has a cumulative grade point average of 2.0 or above) may seek admission to any major offered by any AUC academic program. AUC is proud of the quality and rigor of all of its undergraduate programs, and the University undertakes to ensure that every student admitted to the University will have several major disciplines from which to choose. However, AUC does not undertake to ensure that every student will be admitted to the

specific major program(s) that the student may prefer. Admission to a student's preferred major is not guaranteed and is subject to the following factors:

1. Departments that offer majors that are in such high demand that the number of students applying for a major exceeds the department's capacity may limit the number of majors whom they admit in accordance with the number of full-time faculty and the availability of appropriate facilities. These departments will announce the number of new places available in the major each semester as well as the criteria and associated rationale according to which the programs determine the number of places available.
2. A department that has limited capacity relative to the numbers of students seeking to major in that department's discipline(s), must employ a variety of criteria in identifying those students who will be admitted into the major(s). These criteria include, but must not be limited to, a measure of academic performance in all courses taken at AUC joined with a measure of academic performance in specific courses taken at AUC essential to the academic discipline in question. All criteria must be appropriately weighted in admission decisions when employed. These criteria may include (among other things):

- Secondary school performance (This criterion is especially important for majors that allow declaration at the gate).
- Interviews.
- Assigned essays.
- Aptitude tests.
- Portfolios.

3. Admission into some majors may also be dependent on meeting standards of aptitude or skill (e.g. musical training, mathematics or linguistics skills).

Students who join AUC as undeclared may choose to declare their major at any time between the end of their second semester and the beginning of the fifth semester - that is, after they have completed from 26 to 30 credits, as determined by each department for its major(s), and before they have completed 60 credits. Once a student has achieved junior standing (that is, has completed 60 credit hours), he or she must have declared a major. No student who has achieved junior standing will be permitted to register in courses unless he or she has declared a major, and no student will be considered a "declared major" unless and until the student has received a formal statement, signed by the chair of the department or the person most directly responsible for offering the major in question, confirming that the student has been admitted to this major.

Students follow the degree requirements stated in the catalog of the year in which they make their declaration. However, if a student withdraws from the university and is later readmitted s/he will be required to follow the catalog requirements of the year in which readmission occurs.

Change of Major

A student who has achieved junior standing is expected to complete the requirements of and graduate with the major in which he or she is declared. However, students may change their field of study or be required to change it by university action at any time up to the end of their junior year. A change requires approval from the department of the new major. Students follow the degree requirements stated in the catalog of the year in which they make the change.

Students may not change their major after the start of their senior year. That is, once a student has completed 90 credit hours and achieved senior standing, he or she will only be permitted to complete and graduate with the undergraduate major in which he or she is declared at that time.

Academic Load

Full time undergraduate students normally take an academic load of twelve to sixteen hours, with the exception of science, engineering and computer science students who may take up to eighteen hours. In the summer session, students may take up to seven credit hours. In the Winter session, summer A session and summer B session, students may take up to four credit hours.

Permission to exceed the above maximums, up to twenty one credit hours in fall and spring semesters and nine credit hours in the summer, is based on the student's previous academic record in addition to the recommendation of the department chair and the University Registrar. Freshman and Sophomore students are not permitted to exceed the maximum load, and courses taken for no credit are included within that load.

Students taking less than twelve credit hours are part-time students unless they are seniors who need to complete their degree requirements, or are prevented from taking normal load as a result of university restrictions. Students may not change their status from full time to part time during the semester without the approval of the University Registrar.

The university encourages students to carry a full load and to devote all their effort to university work and activities to obtain full benefit from their undergraduate education. Those who cannot devote full time to their undergraduate program, whether because of needed employment or other obligations, may carry a lighter course load of six to nine hours. The university cannot reschedule classes because they conflict with outside obligations.

Full-time students are entitled to university certification concerning deferment from military service and are eligible for student aid and employment. Part-time students are not entitled to certification concerning military deferment and are not eligible for student aid or employment.

Foreign students carrying a full academic load are entitled to university certification for use in obtaining their student visa. In case of withdrawal, the university reports to the Egyptian

authorities to cancel the student residence visa that was received through the university. Part-time students are not entitled to university certification for obtaining a student visa.

Grades/Examinations

Student work in each course is evaluated throughout the semester. Examinations, quizzes, reports, discussions or other means of evaluation help students know how they stand in a course.

Final examinations review the entire semester's work but are not heavily emphasized. Each examination lasts no longer than two hours and counts for no more than one-third of the final course grade. Except in 4000-level courses and higher where extensive writing assignments and projects pertain, no other element in the final course grade will count for more than one-third. Final examinations are held during the official examination period, which is listed in the academic calendar of the university.

At the close of the semester students receive a final grade in each course. The grade is the professor's official estimate of the student's achievement as reflected in examinations, assignments, and class participation. The final grades are recorded on the student's permanent record at the Office of the Registrar. The grade may not be changed on the student record.

The following letter grades are used at The American University in Cairo, with the corresponding GPA conversion:

Letter Grade	GPA Conversion Points	Description
A	4.0	Excellent
A-	3.7	
B+	3.3	Very good
B	3.0	
B-	2.7	Good
C+	2.3	
C	2.0	Passing
C-	1.7	Conditionally passing
D+	1.3	

D	1.0	
F	0.0	Failing

Grades not included in the Grade Point Average	
P	Pass*
F	Fail
I	Incomplete
S	Satisfactory
U	Unsatisfactory
W	Withdrew
AU	Audit
IP	Incremental /In Progress**

*Pass indicates a quality of performance at the minimum level of " C." "Pass/Fail" grades are assigned only to certain courses as defined in their course description.

** For Pass/Fail, an 'IP' grade may be assigned to students that are attending and progressing but not achieving an acceptable level of proficiency in meeting the course outcomes. It is not to be used as an alternative to an 'I' or 'F'. An 'IP' will appear and remain on the student's transcript with no credits awarded. The course with an 'IP' grade must be retaken at the same level in the following semester.

The grade point average is calculated by multiplying the grade value by the number of credit hours the course represents; the result is the column listed as quality points. The total quality points is then divided by the total credit hours, excluding the credit hours for "P/F" courses, as illustrated below.

An example for calculating the grade point average:

Course ID	Grade	Credit Hrs	Quality Points	

RHET 1010	C	3	6	
CHEM 1005	D	3	3	
CHEM 1015	C+	1	2.3	
MACT 1121	F	3	0	
PHYS 1011	A-	3	11.1	
PHYS 1012	B+	1	3.3	
Current AHRS	**EHRS**	**QHRS**	**QPTS**	**GPA**
14	**11**	**14**	**25.7**	**1.83**

AHRS: Attempted Hours are the credit hours that the student is registering for.

EHRS: Earned Hours are hours of courses in which the student achieved a passing grade, including courses with "pass/fail" grades. The earned hours (not attempted) are counted to determine the student's class and graduation.

QHRS: Quality Hours are hours of courses which are graded, excluding pass/fail or satisfactory/unsatisfactory courses.

QPTS: Quality Points are points allotted to each course, which are the result of multiplying the credit hours of the course by the points assigned to each grade mentioned above.

GPA: Grade Point Average is the quotient obtained by dividing the total quality points by the total quality hours i.e. 25.7/14 = 1.83.

A "C" average (2.00) is required to graduate from the American University in Cairo. Likewise, a minimum grade point average of 2.00 is required in majors and minors.

Grades of "pass/fail", "I", "S", "U", "W", "AU" and "IP" are not assigned grade point values and are not used in the computation of the grade point average. Decimals beyond 2 places are truncated, not rounded up, in computing the grade point average.

Incomplete Work

In very rare cases, undergraduate students who are unable to complete a course may be permitted to continue work in that course beyond the examination period. Any professor submitting an incomplete grade must supplement this submission with a form to the Office of the Registrar (copies to the instructor, and the student) giving the following information:

a. Reason for the incomplete.
b. The material which is lacking.
c. Action necessary for removal of the incomplete.

In such a case, a grade of "I", for "incomplete," is assigned. The students must make arrangements with the professor to complete the course within one month after the beginning of the new academic session, whether they are in school or not. Failure to complete the course within one month after the beginning of the new academic session causes the grade in that course to be recorded as "IF", signifying failure.

If students have one incomplete grade, their academic load limit the following semester will not be affected. If they have more than one incomplete grade, the credit hours of the incomplete will be included in their academic load for the following semester.

Students who receive an incomplete grade(s) while on warning due to a deficiency in their overall grade point average will not be allowed to register the following semester. If, however, they complete their incomplete work before the end of the late registration period, and are academically eligible, they will be allowed to proceed with registration.

Class Attendance

Attendance and participation in class and laboratory sessions are essential to achieving learning outcomes in all AUC courses. Students benefit from lectures and discussions with their instructors and fellow students, and if they fail to attend class, they fail to take advantage of an educational opportunity that may be vital to their academic progress. For this reason, students are expected to attend class regularly in accordance with the general university policy described below and the specific policy detailed in each course syllabus.

The Policy

1. Regular attendance is expected of each student. Students are expected to maintain awareness of their records of attendance and avoid excessive absences, thereby avoiding

circumstances in which it may become difficult or impossible for an instructor to evaluate and assess a student properly.

2. The attendance policy at AUC allows a maximum of the equivalent to three weeks of absences. However, students' grades may suffer if their absences from any class session cause them to miss any direct assessment activities, unless otherwise approved by the instructor.
3. On the first day of classes, each instructor will provide his or her students with a syllabus in which the rules and procedures governing the attendance in the course are specified and detailed, and are applied equally and without bias to all members of the course in question.
4. Students are personally responsible for making up any academic tasks, assignments or assessments due to any absence, in accordance with the attendance policy described in the syllabus for each course.
5. Although attendance is required in all courses, it is not a learning outcome; therefore attendance will not be graded as such.
6. A student who misses more than the three-week equivalent of class sessions may be assigned a reduced grade for the course including the grade of "F" solely on the basis of inadequate attendance as outlined in the syllabus of the course, or announced and published by academic programs.
7. Individual academic programs may establish an alternative attendance policy for specific courses, such as courses that rely heavily on in class or outside of class learning activities. Any such policy should be authorized and approved by the dean of the school offering the course(s) in question. Any faculty member who teaches such a course is also expected to observe the course wide attendance policy.
8. As AUC recognizes the value of all extra-curricular activities,faculty will accept excuses for absences that are the consequence of participation in formal AUC activities or formally representing Egypt in national or international sporting and/or cultural and academic activities and events. It is also recognized that medical and family emergencies may cause absences. Students will not be penalized and the instructor will provide the opportunity to make up the missed assessments for such absences subject to the following conditions:

a. extra-curricular activity excuses are only valid if signed by a university officer designated by the Dean of Students and if the student has informed the instructor in advance of the absences in question.

b. medical and family emergency excuses are only valid if documented and approved by an authorized medical officer and certified by an AUC officer designated by the AUC clinic director and if the student has informed the instructor within a period of seven working days.

9.Students who miss more than the maximum three-week equivalent of absences due to any of the excuses stated in item (8) above,

a.may petition to drop their course after the formal deadline to drop courses and before the deadline for withdrawal from the university. The dean of the school under which is the course is administrated will determine the merit of any such petitions based on the documented absences from the instructor, department chair, or

b.may petition to continue the course. The instructor of the course will determine the merit and have the final decision.

Repeating Courses Under the Course Repeat Policy

All Undergraduate students may repeat a course once for the purpose of improving a grade. The Repeat Policy is subject to the following conditions:

1. Students may repeat a maximum of five courses during the entire undergraduate career.
2. The policy applies to courses taken at AUC within two consecutive Academic Years (Four Successive Semesters).
3. All course repeats must be taken in residency at AUC.
4. Students cannot make use of the Repeat policy if the grade is related to a violation of Academic Integrity. If level 1 violation is committed by an undergraduate student as a first-time offense, it is the prerogative of the Academic Integrity Committee to allow the student to use the repeat policy.
5. After a course is repeated, the credit hours of the first attempt will not be matriculated in the total earned hours of the student record. In addition, the grade received in the first attempt will not be deleted from the student's record but will not be calculated in the grade point average; instead the second grade is the one that will be calculated in the grade point average.
6. The Online Course Repeat form is available on the Registrar's webpage: https://www.aucegypt.edu/academics/registrar. The Online form must be submitted by maximum the eighth week of the semester in which the course is being repeated.

Retaking Courses Outside of the Course Repeat Policy

Students who have consumed all privileges of the Course Repeat Policy such as Academic Integrity, Exceeding the Five Repeats, Repeating the same course more than once and earned grades of "D", "D+", or "F" will follow a different calculation path which entails that grades of the first and second attempt are kept on the student record and the average of both are matriculated, but only the credit hours of one attempt will be included in the earned hours of the student record

The Online Course Repeat form is available on the Registrar's webpage: https://www.aucegypt.edu/academics/registrar/online-forms

The Online form must be submitted by maximum the eighth week of the semester in which the course is being repeated.

Honors

The university awards honors to students who do superior work. Full-time students who earn a grade point average of 3.50 or above for the previous semester are placed on the dean's honor roll. This distinction is noted on the student's academic record.

Graduation honors are awarded to students who have maintained a superior grade point average throughout their college careers:

a. Students who enter the university as freshmen or sophomores earn honors (Cum Laude) if they graduate with a cumulative average of 3.4, high honors (Magna Cum Laude) with 3.6 and highest honors (Summa Cum Laude) with 3.8.
b. Students who graduate from the university with transfer credits of 45 hours or more receive graduation honors if they earn a cumulative average of 3.5, high honors if they earn a grade point average of 3.7 and highest honors if they earn a grade point average of 3.9.

Probation/Warning

Students who fail to meet the academic standards established by the university will be placed on probation. The probation period provides the student with an opportunity to correct the deficiency, but that period may last for no more than two regular semesters. Failure to achieve the required standard by the end of the probation period disqualifies the student from further attendance at the university.

Students who fail to maintain a cumulative grade point average of 2.0 or better at the end of a semester will be placed on probation. Students who fail ENGL 0210 will be placed on warning.

In the above cases, an email is sent to the student, which includes a statement of what is required to avoid dismissal from the university. To be allowed to continue on probation the following semester students in this category must show satisfactory improvement during the first semester of their probation period (i.e. achieve at least a 2.0 semester GPA).

Students placed on probation for a deficiency in their cumulative GPA must limit their academic load during their probation period to four courses with a maximum of 13 credit hours per semester. The permissible load for students taking ENGL 0210 is a maximum of 7 credit hours per

semester. It is the responsibility of the adviser to follow up on the student's performance and academic load.

Students who fail to maintain a grade point average of 2.0 in their major at the end of any semester following their declaration of major, will be placed on major probation. An email is sent to the student, with a copy to the department of major.

Students will have two semesters to clear the deficiency in their major. If by the end of the two semesters the deficiency is not corrected, they will be discontinued unless accepted in another major.

Students on probation/warning for any of the above deficiencies are not allowed to participate actively, or represent the university, in co-curricular activities, such as sports, teams, clubs, associations, organizations, conferences, or competitions. They may not participate in office-led programs. They may not serve in the Student Government.

Dismissal

To avoid dismissal, students on overall probation must achieve a semester grade point average of 2.0 following the first semester of their probation period, and a cumulative grade point average of 2.0 at the end of the second semester of their probation period.

A student who fails ENGL 0210 twice in two regular semesters and a third time in a Summer session will be dismissed from the University and must wait one full semester before applying for readmission. The student must score high enough on the TOEFL for direct admission to the Department of Rhetoric and Composition courses (RHET) since s/he will not be allowed to take ENGL 0210 for a third time during a regular semester.

Planned Educational Leave of Absence

Students at The American University in Cairo may apply for a Planned Educational Leave of Absence. A Planned Educational Leave of Absence is defined as a planned interruption or pause in a student's regular education during which the student temporarily ceases his or her formal studies at AUC while pursuing other activities that may assist in clarifying the student's educational goals. The intent of the policy is to make it possible for a student to suspend his or her academic work, leave the campus without jeopardizing his or her rights and privileges, and later resume his or her studies with a minimum of procedural difficulty. A student who is approved for a planned leave will be considered as maintaining his or her status as a continuing student.

Planned educational leaves may be granted for a variety of reasons or projects, but certain characteristics must be contained in any request for a leave:

1. The leave must have a definite purpose relevant to the student's overall educational objectives and goals.
2. The request must be for a specific period of time which should not exceed 3 regular semesters for students pursuing an undergraduate program.
3. The student must plan to return to AUC at the conclusion of his or her leave.

The following regulations apply to the planned educational leave:

1. An application for a Planned Educational Leave of Absence and additional information can be obtained from the Registrar's webpage: https://www.aucegypt.edu/academics/registrar/online-forms
2. The student must obtain the approval of his or her faculty advisor, the department chair of his or her major (or, in the case of an undeclared student, the Freshman Advisor) and the University Registrar.
3. The student should be in academic good standing at the time of the leave request. The leave application must be submitted to the Office of the Registrar by the start of the final examination period of the semester immediately preceding the requested leave. The Office of the Registrar will notify the leave applicant of the status of the request after all of his or her final grades have been submitted.
4. The student may cancel a leave of absence as late as the first day of classes of the term for which the leave has been requested.
5. A degree student who discontinues active enrollment in degree studies without being granted a leave of absence, or a student granted a leave who does not return to active study at the close of the period of approved absence, will be considered to have withdrawn from the University and must apply for readmission and be subject to the regulations and requirements then in force.
6. The right to use university facilities is suspended while the leave is in effect, with the exception of library privileges subject of the approval of the department of major.
7. A Planned Educational Leave of Absence is counted as part of the time limitations specified under the heading "Graduation" in this section. A student returning from an approved leave remains under the requirements of the catalog that s/he was following upon the declaration of major.
8. Any academic credit during a Planned Educational Leave of Absence is accredited by AUC only if permission is granted in advance by the University Registrar.

Withdrawal from the University

Students who drop all their courses during a semester are requested to pass by the Office of the Registrar to activate their registration screens before the advising/registration period for the consecutive semester.

Students who wish to withdraw from the University for one semester or more due to illness or other emergency circumstances are requested to fill in a "Withdrawal Form" and submit it to the Office of the Registrar - forms are available on the Registrar's webpage: https://www.aucegypt.edu/academics/registrar/online-forms

Withdrawal grades "W" will be recorded for each course. No academic credit is given for courses from which students withdraw.

Students who wish to return after an absence of one or more semesters may apply for readmission. Readmission is not granted automatically. (See the "Admissions" section of the catalog.)

Transcripts

Students who have graduated or who withdrew from the University can apply for official or student transcripts of their academic record. There will be a charge for this service. No transcript of academic record will be issued during the examination, registration, or graduation periods. Academic transcripts will not be issued when unsatisfied financial obligations to the university exist.

Non-degree Academic Regulations

Since non-degree students are usually seeking credit for transfer to other institutions, not all of the academic regulations in the previous section are applicable to them. They will be primarily concerned about the academic regulations of their home institutions to ensure that they receive maximum possible credit for their AUC work.

Non-degree students should note the sections pertaining to registration, change of courses, academic load, grades, probation, incomplete work, class attendance, and transcripts in the undergraduate section as appropriate.

Non-degree students who wish to transfer their ALIN (Arabic Language Intensive Program) credits towards a degree in a regular AUC program should get the approval of their department of major. Those wishing to transfer credits to their home universities should check these universities' policies before coming to Cairo.

Academic Integrity Policy

Preamble: Valuing the concepts of academic integrity and independent effort, the American University in Cairo expects from its students the highest standards of scholarly conduct. The University community asserts that the reputation of the institution depends on the integrity of

both faculty and students in their academic pursuits and that it is their joint responsibility to promote an atmosphere conducive to such standards.

I. Academic dishonesty is not acceptable in an institution dedicated to learning or in any society. Academic dishonesty includes, but is not limited to:
    1. Cheating: using unauthorized notes, aids, or information on an examination; altering a graded work prior to its return to a faculty member; allowing another person to do one's own work and submitting it for grading.
    2. Plagiarism: submitting material that in part or whole is not one's own work; submitting one's own work without properly attributing the correct sources of its content.
    3. Fabrication: inventing or falsifying information, data, or citation; presenting data gathered outside of acceptable professorial guidelines; failing to provide an accurate account of how information, data or citations were gathered; altering documents affecting academic records; forging signatures or authorizing false information on an official academic document, grade, letter, form, ID card, or any other university document; submitting false excuses for absence, delay or illness.
    4. Multiple Submissions: submitting identical papers or course work for credit in more than one course without prior permission of the instructor.
    5. Obtaining or Attempting to Obtain Unfair Advantage:
        a. gaining or providing access to examination materials prior to the time authorized by an instructor;
        b. stealing, defacing, or destroying library or research materials which can deprive others of their use;
        c. unauthorized collaboration on an academic assignment;
        d. retaining, possessing, or circulating previously used examination materials without the instructor's permission;
        e. obstructing or interfering with another student's academic work;
        f. engaging in any activity designed to obtain an unfair advantage over another student in the same course;
        g. offering bribes to staff or any university employee to effect a grade change, or gain unfair advantage over other students.
    6. Unauthorized Access: viewing or altering in any way computer records, modifying computer programs or systems, releasing or distributing information gathered via unauthorized access, or in any way interfering with the use or availability of computer systems/information.

7. Aiding and Abetting: providing material, information, or other assistance which violates the above Standards for Academic Integrity; providing false information in connection with any inquiry regarding academic integrity.
8. Impersonation: impersonating or allowing to be impersonated by another individual during classes, examination or other university activities.
9. Threatening harm: threatening, effecting, or encouraging bodily, professional or financial harm to any faculty, staff, administrator or student who has witnessed or reported a violation of the Code of Ethics.
10. Misconduct: behaving in a manner that violates or adversely affects the rights of other members of the AUC community (disrupting meetings or activities, unruly behavior, etc).
11. Copyright infringement: using copyrighted materials (print, electronic, or multimedia) in a manner that violates international copyright laws.

The University reserves the right to take disciplinary action as severe as dismissal according to procedures delineated in section II.

II. An instructor has full authority to deal with an academic dishonesty incident within the context of his/her course. Disciplinary action may cover the range from reprimand to "F" for the course grade. The instructor may also recommend suspension or dismissal from the University.

The instructor's action on incidents of academic dishonesty must be communicated to the student(s) involved as well as to the Student Affairs Office and the office responsible for monitoring academic integrity by her/him within two weeks of the time the instructor became aware of the incident.

All cases of academic dishonesty are to be immediately reported to the chair of the Academic Integrity Committee and to the Chair of the instructor's department. In the case of a recommendation for suspension or dismissal, the Academic Integrity Committee will meet promptly to investigate and submit a recommendation to the Provost, who is the final authority.

All students involved in academic dishonesty will receive an official letter of warning from the University administration, a copy of which will remain in the students' file in the department as well as in the Student Affairs Office and the office responsible for monitoring academic integrity.

III. Once the Academic Integrity Committee has given a hearing to the student and submitted its recommendation to the Provost, no further appeal may be made unless substantial

new evidence is presented to the Chair of the Academic Integrity Committee, who will evaluate the evidence and reopen the case if deemed necessary.

First-Year Experience Program

First-Year Program (FYP) Orientation

A mandatory orientation introducing new students to the academic and social culture of AUC, as well as the policies and support services with which all students should be familiar. Students attending the FYP orientation will engage in both classroom and out-of-class activities.

Goals

This orientation familiarizes new degree-seeking students with knowledge of the purposes and expectations of liberal arts education, AUC culture, student rights and responsibilities, and academic, personal and social competencies necessary for college success; it also equips them with the skills to become self-reliant in the use of university information resources, and in identifying relevant service offices when needed; finally it promotes the values of respect and appreciation for the institution, fellow members of the AUC community, and the learning experience.

Participants

All admitted undergraduate degree-seeking students, including students entering the ELI, will take part in the FYP Orientation.
Transfer students, international non-degree students (e.g. study abroad), and new graduate students are **not included** in this program.

Facilitators

Class content is created and approved by the Dean of Students. Classes are facilitated by trained senior undergraduate students. Staff from the Office of the Dean of Students and the Office of Student Life provide managerial and logistical oversight, as well as mentoring.

Student leaders organize social events to help first year students integrate and make social connections with other incoming students and peer leaders.

Structure

The FYP is designed as a thematic-based experiential learning program that includes interactive classroom sessions, outdoor hands-on activities, and a large social event. Each of the program days covers a theme that highlights a key area of knowledge essential for success in the first year.

Attendance and Successful Completion

First year students are required to attend all days of this program. Students who miss the entire FYP orientation or a portion thereof will be required to demonstrate knowledge of the material covered by the orientation by successfully passing an online quiz. The quiz will be administered later in the semester, but before registration takes place for the following semester. Students have two chances to pass the quiz, and tutorial materials are provided in advance to students to prepare for the quiz.

Undergraduate Studies

Undergraduate Studies

- Dean of Undergraduate Studies
- Academic Advising Center (AAC)
- The Core Curriculum
- Dialogue Program
- The Academic Community Engagement Program (ACE)
- Undergraduate Research Program
- Mohamed Taymour Writing and Communication Center
- The Writing Enriched Curriculum Program
- The Common Reading Experience (CRE)

Dean of Undergraduate Studies

The Dean of Undergraduate Studies oversees The Academy of Liberal Arts which administers several cross-curricular programs that strengthen AUC's liberal arts mission by supporting high impact teaching practices and student centered learning experiences. The Core Curriculum is at the center of these programs, the academic centerpiece of every student's liberal arts curriculum, regardless of major. In addition, The Academy of Liberal Arts administers the Academic Advising Center, The Academic Community Engagement Program, The Undergraduate Research Program, The Writing and Communication Center, The Writing Enriched Curriculum Program and The Common Reading Experience. The Academy of Liberal Arts works in close collaboration with all academic programs to support first year and undeclared students in transitioning to the university by furthering the integration and coordination of teaching and learning across the curriculum and serving overall as an advocate for undergraduate students at AUC.

Academic Advising Center (AAC)

The mission of the Academic Advising Center (AAC) at AUC is to provide academic advising and assist all undeclared undergraduate students in developing their educational plans, and setting career and life goals while helping them appreciate the values of liberal arts education until they declare their major. This is done through advising and mentoring systems offered to students throughout their year(s) at the center. Once they declare a major, the students should receive the same service in their department of major while the center will continue providing the needed academic support, advice and help regarding the Core Curriculum and general academic rules and regulations. AAC operates on the basis of shared responsibility where AUC community (faculty, student and staff) interact and coordinate efforts to achieve advising goals and desired student outcomes from admission to graduation.

One of the goals of AAC is to provide developmental advising, a process that involves both teaching and learning as it engages the students actively in their education and helps them to develop a sense of responsibility for their academic choices. Continuity and follow up on the student's academic, mental, intellectual, psychological and post-graduate planning status on a one-on-one basis are fundamental practices and assessment of the center's goals and outcomes is integral.

The Core Curriculum

At AUC, every student pursues two kinds of programs that integrate seamlessly to produce one transformative educational experience. All students enroll in a major-a specialized program of studies, in which they complete the courses of their chosen discipline or professional field. This gives them depth in a particular field. In addition, every student completes an unspecialized program that brings together students from all majors-the Core Curriculum. The Core Curriculum is the centerpiece of our liberal arts education and the core of the learning experience at AUC. Students engage in an interdisciplinary, diverse journey of learning that does not restrict their learning to knowledge or skills in only one particular field, giving them breadth of knowledge and transferable skills for lifelong learning.

Core Curriculum courses have the goal of developing the liberal arts skills of critical thinking, critical reading and written communication, collaboration, information literacy, digital literacy, and civic engagement, as well as an understanding of issues that affect humanity that are relevant to all disciplines. Core Curriculum courses assist students in understanding their place in the world-socially, culturally, intellectually, and historically.

Dialogue Program

The Dialogue Program courses are courses where students engage in cross-cultural dialogue with students on other campuses, incorporating various mediums such as videoconferencing technologies. The courses give the students the opportunity to explore the dialogue process with counter-partners from around the globe, discussing topics that range from current local events to a wide variety of global socioeconomic, political and cultural issues.

The Academic Community Engagement Program (ACE)

The Academic Community Engagement Program at AUC aims to support and foster Community-Based Learning, which is a methodology that advances articulated learning goals through student service to a partner community. Launched from the classroom and lectures, readings, and discussions, students apply academic theories and innovative thinking in co-developmental, hands-on service with local, Egyptian, and international communities. Students reflect on the changes within themselves, within the partners they've worked with, and within the community at large to assess the impact of civic engagement and responsibility on self, others, and the world.

Designation: Community-Based Learning courses are designated as "Course Title: Community-Based Learning" on the Schedule for Classes/Registrar. (ex: "Grant Writing: Community-Based Learning").

Undergraduate Research Program

The Undergraduate Research Program institutionalizes, supports and expands opportunities for undergraduate student research, entrepreneurship and creative achievement. It nurtures amongst the academic community, across the disciplines, a culture of research and development, and the drive to advance the liberal education outcomes of undergraduate inquiry and critical and creative competence.

Among other programs and services, the Program administers a conference and mini-grant program for undergraduate researchers and hosts the yearly EURECA conference featuring student research and creative work.

Mohamed Taymour Writing and Communication Center

The Writing and Communication Center helps graduate and undergraduate students in all disciplines improve their writing skills and communication abilities. The Center offers assistance to students at any stage in the writing process - whether brainstorming ideas for an essay, Master's thesis proposals, or any specific issues related to structure, language, citations or otherwise as well as providing feedback on presentations. They also assist faculty members in the effective use of writing components in their courses and offer tailored workshops upon request.

The Writing Enriched Curriculum Program

This program integrates writing within major courses, ensuring continual student engagement in writing in their respective disciplines. Emphasizing diverse writing modes aligned with specific fields, it advocates intentional integration of reading and writing into curricula of the majors. The program works with faculty and departments to provide ongoing support and professional development toward this integration.

The Common Reading Experience (CRE)

Reading offers people a way to explore, a way to be inspired, a way to connect, and a way to grow. The Common Reading Experience helps create engaging and shared reading opportunities for the AUC community. The program helps promote reading among students, faculty, administration, and staff across AUC. Discussions, reading circles, forums, guest speakers and more allow participants to go even deeper in their engagement with the CRE texts.

The Core Curriculum

The Core Curriculum

Click on any of the following links for information:

What is the Core Curriculum?

"A Liberal Arts education is a celebration of learning that encompasses pretty much everything: the arts and the humanities, the social sciences and the 'hard' sciences, business training and other professional studies. It grounds us in a sound understanding of our own culture and history, but also makes us aware and tolerant of the histories and cultures of others. Liberal learning seeks to emphasize the growth of intellectual self-reliance and independence while encouraging cooperative endeavor. It is the competence to think, analyze and understand independently." - Former AUC President Thomas Bartlett

The Core Curriculum is the centerpiece of the liberal arts education and the core of your learning experience at AUC. In addition to pursuing studies in a specialized field of major, every student completes an unspecialized program outside of their major that provides breadth of learning in diverse fields as well as transferable skills for lifelong learning.

The Core Curriculum courses have the goal of developing the liberal arts skills of critical thinking, critical reading, written communication, collaboration, information literacy, digital literacy, and civic engagement, and an understanding of issues that affect humanity that are relevant to all disciplines.

How Does the Core Curriculum Help Students?

The Core Curriculum helps students develop a diverse set of skills needed to thrive in today's complex, globalized world. Over the course of four years, the Core allows students to develop personal, professional, community skills, to become well-rounded individuals equipped for lifelong learning. By the end of the program, students should be able to communicate influentially and effectively, work in diverse environments, think critically and creatively to solve complex problems, understand issues from multiple perspectives, collaborate with diverse people, ethically engage the world around them, distinguish truth from misinformation, and overall possess the personal, civic and career readiness needed for them to participate, impact, and lead in an ever-changing world.

General Policies

- The Core Curriculum is a graduation requirement.
- Core Curriculum courses cannot be taken from the same department as a student's first major.
- Core Curriculum courses cannot be double counted for primary major courses, concentration requirements, specialization requirements, collateral requirements, concentration electives, or general electives.
- Core Curriculum courses are only allowed to "double count" (meet credit requirements for two different areas) under three situations:
    - For the secondary major when pursuing a double major.
    - For credits towards a minor (consistent with the stipulations for the department or program offering the minor).
    - For the Capstone in the Major requirement.
- Any student requesting to retake or repeat a Core Course must retake or repeat the same course. This includes Selected Topics courses. However, if a Core course is not planned to be offered for four semesters, an alternative course within the same Core category may be approved for retake or repeat by the Core Curriculum program *if it assesses that the course learning outcomes are sufficiently equivalent.*

Core Curriculum Levels: Freshman, Secondary, Capstone

I. Freshman Level: 22 credit hours

The Freshman Program aims to offer students a coherent, integrated introduction to one of the defining features of AUC: liberal arts education. In addition, the Program equips students with communication skills in English and enables them to transfer these skills to content courses so

they are prepared to cope with assignments in their majors, and enhances critical thinking skills and their application in a variety of disciplines. Finally, Freshman Program courses aim to help students think with clarity and insight about themselves, their goals and the decisions they face, and to foster their civic responsibility, personal and academic integrity, and appreciation of diversity.

The Freshman Program consists of the following:

- Students begin their first semester as members of a "learning community," taking two closely linked classes together, a Rhetoric class (RHET 1010) and a multidisciplinary seminar (CORE 1010), that work in tandem to develop and enhance the reading, writing, critical thinking and general academic skills needed for success throughout study at AUC.
- RHET 1020 (a second RHET course in research skills and writing)
- SCI 1020
- PHIL 2100 (normally taken in semester three, RHET 1010 is a prerequisite)
- LALT 1020
- A Scientific Foundations course (including a lab)
- A Cultural Foundations course

Timely Completion Policies

Students must complete their courses as per the following Timely Completion Policies:

- Timely Completion Policy of the Freshman Program
- Timely Completion Policy of RHET 1010, CORE 1010 and RHET 1020
- Timely Completion Policy of Arabic Language Requirements

Timely Completion Policy of the Freshman Program

Timely completion of Freshman Program courses and activities is of vital importance. Through these courses, students will achieve foundational learning outcomes in an integrated and sequenced manner that prepares students for subsequent study at AUC.

- All AUC students should complete the required First-Year Experience (FYE1001: Launch into AUC) course and activities in their first two semesters at AUC, regardless of whether they start their studies in ELI or RHET.
- Freshman Program courses need to be completed by a student's third semester, except in the case of engineering students who must complete Freshman Program courses by their fourth semester.
- Any student who transfers in 15 or more credit hours will be given one additional semester to complete the freshman program courses.

- Students at the School of Sciences and Engineering are required to complete Scientific Thinking but are not required to complete the Scientific Foundations course, as its outcomes are fulfilled within their majors.

  Students who fail to complete the Freshman Program requirements outlined above will have a registration hold placed on their account to ensure that missing requirements are completed without delay. To release the hold, students must petition the Registrar. Once the hold is released, the missing course(s) must be registered and completed in that same semester. Any student who does not complete the required courses in the semester following the hold release will be placed on academic probation, which may lead to dismissal.

Timely Completion Policy of RHET 1010**,** CORE 1010 **and** RHET 1020

Students should complete Courses RHET 1010 and CORE 1010 concurrently, followed by Course RHET 1020 in the subsequent semester. Students may attempt each of these three courses up to three times, in consecutive semesters. If a student's first attempt at any of the three courses is unsuccessful, the Registrar's Office will issue a warning. If the second attempt is unsuccessful, the Registrar's Office will issue a second warning. If the student does not pass the course on the third attempt in the subsequent semester, they will be dismissed from AUC. Dropping any of the three courses will count as an attempt toward the three-attempt limit.

Specific Policies For Completion of RHET 1010**,** CORE 1010 **and** RHET 1020

- All students, except for those with RHET 1010 transfer credits, take the RHET 1010/CORE 1010 tandem classes (6 credit hours total) in their first semester of being placed in RHET 1010.
- Dropping one of the two courses RHET 1010 or CORE 1010 (Freshman Writing or Freshman Seminar) will result in the other course being dropped as well, automatically.
- Any student repeating CORE 1010/RHET 1010 must enroll in a different theme.
- Students may pass or fail one or both of the tandem courses RHET 1010 and CORE 1010, depending on their performance in each course.
- RHET 1020 needs to be taken immediately after successfully completing RHET 1010 (or immediately after receiving equivalent credit for or exemption from the course) otherwise a hold will be placed on a student's subsequent registration until the issue is satisfactorily resolved.
- Students may take LALT 1020 during the same semester they are taking ENGL 0210 or ENGL 0211, RHET 1010 and CORE 1010, or, at the latest, with RHET 1020.

- All students are required to pass LALT 1020 before or during the semester in which they are registered in RHET 1020. Students who have completed RHET 1020 without successfully completing LALT 1020 will have a registration hold placed on their subsequent registration.
- If a student is taking LALT 1020 concurrently with RHET 1020, dropping LALT 1020 will result in the automatic dropping or RHET 1020.
- LALT 1020 can be dropped independently when taken concurrently with ENGL 0210 or RHET 1010.

Scientific Foundations (3 credit hours plus 1 lab credit)

Scientific Foundations courses give students exposure to the harder sciences often from STEM fields. The courses are taught in a liberal arts manner, helping students to see the importance and relevance of the topics in life and society.

Note: Students majoring in any program in the School of Sciences and Engineering meet these requirements through their program requirements rather than as part of the Core Curriculum. Actuarial science and Data Science students are required to take a lab as part of the Core Curriculum.

Scientific Foundations Courses

- ARCH 2501 - Let's get Sustainable (3 cr.) & SCI 1017 - General Science Laboratory (1 cr.)
- BIOL 1010 - Introduction to Life Sciences (3 cr. + 1 cr. lab)
- BIOL 1011 - Introductory Biology I (3 cr. + 1 cr. lab)
- BIOL 1012 - Introductory Biology II (3 cr. + 1 cr. lab)
- BIOL 1040 - Essentials of Environmental Biology (3 cr.) & SCI 1017 - General Science Laboratory (1 cr.)
- BIOL 1098 - Fundamentals of Neurosciences (3 + 1 cr.)
- BIOL 1410 - Current Health Issues (4 cr.)
- BIOL 1930 - Selected Topic for Core Curriculum (3 cr.) & SCI 1017 - General Science Laboratory (1 cr.)
- CHEM 1003 - Chemistry and Society (3 cr.) & CHEM 1013 - Chemistry of Life (1 cr.)
- CHEM 1004 - Man and the Environment (3 cr.) & CHEM 1013 - Chemistry of Life (1 cr.)
- CHEM 1005 - General Chemistry I (3 cr.) & CHEM 1013 - Chemistry of Life (1 cr.)
- CORE 1930 - Selected Topics for Core Curriculum (3 cr.) & SCI 1017 - General Science Laboratory (1 cr.)
- MACT 1930 - Selected Topic for Core Curriculum (3 cr.) & SCI 1017 - General Science Laboratory (1 cr.)
- PHYS 1001 - Physics for Poets (3 cr.) & SCI 1017 - General Science Laboratory (1 cr.)

- PHYS 1004 - Physics of Sports - Unleashing the Science Behind Athletic Mastery (3 cr.) & SCI 1017 - General Science Laboratory (1 cr.)
- PHYS 1930 - Selected Topic for Core Curriculum (3 cr.) & SCI 1017 - General Science Laboratory (1 cr.)
- SCI 1009 - Exploration of the Universe (3 cr.) & SCI 1017 - General Science Laboratory (1 cr.)
- SCI 1930 - Selected Topic for Core Curriculum (3 cr.) & SCI 1017 - General Science Laboratory (1 cr.)
- SCI 2005 - Introduction to Geology (3 cr.) & SCI 2015 - Introduction to Geology Lab (1 cr.)

Cultural Foundations (3 credit hours)

Cultural Foundations courses give students introductory exposure to topics related to the human experience, often coming from a humanities or social sciences perspective. These courses help students see human realities in a multi-dimensional depth and complexity often missing in popular culture and media. Courses can cover history, economics, sociology, literature, theater or more.

Cultural Foundations Policies

- The course taken from this category must be from a different discipline/department than the course the student will select for the Secondary Level Humanities / Social Sciences requirement. This rule applies to all courses except for courses with the prefix of SEMR and CORE as these are interdisciplinary courses. Students can therefore take a course with the CORE prefix to meet the Cultural Foundations requirement and another course with the CORE prefix for the secondary level Humanities/Social Science requirement.
- Students may only take one course from this category. Any additional completed course(s) from this category will not count for credits nor show a grade on the academic transcript.
- Courses of this category may only be taken for CORE credit and may not be taken as a major or minor course.

Cultural Foundations Courses

- AMST 1090 - What is America? (3 cr.)
- AMST 1091 - Exploring Feminist Perspectives in Egypt and the US (3 cr.)
- AMST 1099 - Selected Topics for Core Curriculum (3 cr.)
- ANTH 1099 - Selected Topics for Core Curriculum (3 cr.)
- ARIC 1099 - Selected Topics for Core Curriculum (3 cr.)
- ARIC 1102 - Passionate Love in Arabic and World Literatures (3 cr.)
- ARIC 1300 - Arabs and Muslims Encountering the Other (3 cr.)

- ARTV 1099 - Selected Topics for Core Curriculum (3 cr.)
- CORE 1099 - Selected Topics for Core Curriculum (3 cr.)
- CORE 1130 - The Human Spirit (3 cr.)
- CORE 1140 - Community Matters (3 cr.)
- ECLT 1023 - Experiencing Creativity: Texts and Images (3 cr.)
- ECLT 1099 - Selected Topics for Core Curriculum (3 cr.)
- EDUC 1099 - Selected Topics for the Core Curriculum (3 cr.)
- EGPT 1080 - Coptic Lives (3 cr.)
- EGPT 1099 - Selected Topics for the Core Curriculum (3 cr.)
- HIST 1099 - Selected Topics for Core Curriculum (3 cr.)
- PHIL 1099 - Selected Topics for Core Curriculum (3 cr.)
- POLS 1001 - Introduction to Political Science (3 cr.)
- SEMR 1023 - Celebrating Ideas: A Voyage Through Books, film, Art and Theater (3 cr.)
- SEMR 1099 - Selected Topics in Core Curriculum (3 cr.)
- SEMR 1110 - Creative Thinking & Problem Solving (3 cr.)
- SOC 1099 - Selected Topics for Core Curriculum (3 cr.)
- THTR 1099 - Selected Topics for Core Curriculum (3 cr.)
- THTR 1101 - The World of the Theatre (3 cr.)

Arabic Language (0-6 credit hours)

All newly admitted students, except those who have submitted evidence to AUC of passing the Thanawiya Amma exam or its equivalent, will take an Arabic placement exam. Students are only allowed to sit for the placement exam once in the freshman year. Based on the exam results, students may be required to take up to two Modern Standard Arabic courses.

As of Fall 2019, all degree-seeking students without Thanawiya Amma or equivalent who are eligible for the placement test will take one or two of the following courses (unless exempted by the placement exam):

For Egyptian and Arab background students:

- ALNG 1010 - Eye on Press (3 cr.)
- ALNG 1020 - Arabic in Context (3 cr. per semester)
- ALNG 2010 - Current Issues and Egyptian Society (3 cr. per semester)
- Students enrolled prior to Fall 2019 who did not complete the previously required ALNG courses ALNG 1101-1102-1103 - Elementary Modern Standard Arabic (3 cr. each per semester)

- ALNG 2101-2102-2103 - Intermediate Arabic (3 cr. each per semester) will also be placed in the new ALNG requirements as determined by the department, since the old courses are no longer offered.

For International Students:

All degree seeking international students, are also required to meet the university's Arabic Language requirement by taking up to 6 credits of the following courses:

- ALNG 1101-1102-1103 - Elementary Modern Standard Arabic (3 cr. each per semester)
- ALNG 2101-2102-2103 - Intermediate Arabic (3 cr. each per semester)

Policies:

- The timely completion of the Arabic Language requirement applies to all enrolled students, regardless of their year of admission.
- All students must sit for an Arabic language placement exam during their freshman year unless they have submitted a Thanawiyya Amma certificate or its equivalent before the date of the last placement exam for any given academic year.
- Students may sit for the Arabic Placement exam only once during their first year. Retaking of the exam is not allowed. Based on the placement exam score, students will either be exempted from required Arabic Language courses, or be required to take one or two sequenced (not concurrent) courses.
- Students who fail to take their placement exam during their first two semesters will receive registration holds upon the completion of 30 credits, and they will be automatically required to do two Arabic language courses.
- Students must take all required Arabic language courses before completing 90 credit hours. For students required to take two courses, the first of the required courses must be taken before completing 60 credit hours. Students failing to register for (or registering and dropping) their required Arabic courses in time to meet the Arabic Timely Completion Policy will be issued registration holds preventing them from registering for other courses before registering for the required Arabic courses.
- Students who have taken the placement exam before fall 2019, and have not completed their required ALNG courses following the old course numbering, will be placed in the new ALNG courses, as determined by the department of Arabic Language Instruction.

For more information on policies and procedures, please check the department of Arabic Language instruction page in the Catalog.

Please check the ALNG webpage to see the instructions and schedule of the exam.

II. Secondary Level: 12 credit hours

Category 1: Humanities and Social Sciences (3 credit hours)

These courses further deepen a student's liberal arts experience by helping them to develop a solid foundation within one of the many disciplines within the Humanities and Social Sciences.

Every student must choose and complete one course in this category. It must be from a department other than the one offering the course taken to meet the Cultural Foundations requirement in the Freshman Level, and should be from a different discipline.

- ANTH 2099 - Selected Topics for Core Curriculum (3 cr.)
- ANTH 2101 - Cultural Anthropology (3 cr.)
- ANTH 3099 - Selected Topics in Anthropology (3 cr.)
- ARCH 2211 - History, Theory & Criticism of Architecture & Urbanism I (3 cr.)
- ARIC 2099 - Selected Topics for the Core Curriculum in Humanities and Social Sciences (3 cr.)
- ARIC 2270 - Islamic Art And Architecture (650-1250) (3 cr.)
- ARIC 2271 - Islamic Art And Architecture (1250-1800) (3 cr.)
- ARIC 3020 - Introduction to Sufism (3 cr.)
- ARIC 3269 - The Arts of Fire: Ceramics and Glass of the Islamic World (3 cr.)
- ARIC 3271 - Building for Islam: Architecture of the Early Caliphates in Egypt and Syria (3 cr.)
- ARIC 3272 - Building the Sultanate: Architecture under the Ayyubids and Mamluks in Egypt and Syria (3 cr.)
- ARIC 3323 - Marriage and the Family in the Medieval and Early Modern Middle East (3 cr.)
- ARIC 3337 - Shi'i Muslims in History (3 cr.)
- ARIC 3353 - Islamic Political Thought (3 cr.)
- ARIC 3435 - Introduction to the Study of Islam (3 cr.)
- ARTV 2113 - Introduction to Visual Cultures (3 cr.)
- ARTV 2200 - Art Foundations (3 cr.)
- ARTV 3115 - Art Theory (3 cr.)
- ARTV 3270 - Selected Topics in Art (3 cr.)
- CORE 2099 - Selected Topics for Core Curriculum (3 cr.)
- CORE 2142 - Profiles in Civic Leadership and Civic Project Development (3 cr.)
- CREL 2099 - Selected Topics for Core Curriculum (3 cr.)
- DSGN 2113 - Introduction to Visual Cultures (3 cr.)
- DSGN 2200 - Design Foundations (3 cr.)
- ECLT 2010 - Introduction to Literature (3 cr.)
- ECLT 2011 - Survey of British Literature (3 cr.)

- ECLT 3005 - Romanticism (3 cr.)
- ECLT 3006 - Nineteenth-Century European Literature (3 cr.)
- ECLT 3010 - American Literature to 1900 (3 cr.)
- ECLT 3014 - Literature and Philosophy (3 cr.)
- ECLT 3060 - Shakespeare (3 cr.)
- ECLT 3070 - Creative Writing (3 cr.)
- ECON 2011 - Introduction to Microeconomics (3 cr.)
- ECON 2021 - Introduction to Macroeconomics (3 cr.)
- EDUC 2099 - Selected Topics in Core Curriculum (3 cr.)
- FILM 2099 - Selected Topics for Core Curriculum (3 cr.)
- FILM 2120 - Introduction to Film Art (3 cr.)
- FILM 3150 - Topics in Gender and Film (3 cr.)
- HIST 2403 - Europe on Fire: Revolution and Reform (3 cr.)
- LING 2200 - Introduction to Linguistics (3 cr.)
- LING 2210 - Principles and Practice of Teaching English (3 cr.)
- LING 2220 - Language and Society (3 cr.)
- LING 2230 - Language and Communication (3 cr.)
- LING 2240 - Styles in Languages (3 cr.)
- LING 2250 - Foundations of Translation Theories (3 cr.)
- LING 3320 - Language and Politics (3 cr.)
- LING 3350 - Translation of Professional Documents (3 cr.)
- MUSC 2200 - Introduction to Music (3 cr.)
- PHIL 2010 - Truth, Lies, and Logical Reasoning (3 cr.)
- PHIL 2099 - Selected Topics for Core Curriculum (3 cr.)
- PHIL 2112 - Philosophy of Religion (3 cr.)
- PHIL 2113 - Introduction to Ethics (3 cr.)
- PHIL 2117 - Political Philosophy (3 cr.)
- PHIL 3014 - Literature and Philosophy (3 cr.)
- PHIL 3017 - Philosophy of Science and Technology (3 cr.)
- PPAD 3198 - Management in Government (3 cr.)
- PSYC 1000 - Introduction to Psychology (3 cr.)
- PSYC 2099 - Selected Topics in Psychology (3 cr.)
- PSYC 3003 - Community Psychology (3 cr.)
- RHET 2099 - Selected Topics (3 cr.)
- RHET 3099 - Selected Topics (3 cr.)
- RHET 3110 - The Writer's Workshop (3 cr.)
- RHET 3120 - Life Narratives (3 cr.)
- RHET 3150 - Poetry Writing (3 cr.)

- RHET 3210 - Business Communication (3 cr.)
- RHET 3220 - Public Speaking (3 cr.)
- RHET 3230 - Technical Communication (3 cr.)
- RHET 3250 - Digital Rhetoric (3 cr.)
- RHET 3260 - Mastering Writing in an AI World (3 cr.)
- RHET 3310 - Discourse and Power (3 cr.)
- RHET 3330 - Words that Change the World (3 cr.)
- RHET 3340 - Making Your Case: The Art of Persuasion (3 cr.)
- RHET 3350 - Writing and Cognition: The Mind and the Machine (3 cr.)
- SOC 2099 - Selected Topics for Core Curriculum (3 cr.)
- SOC 2101 - Introduction to Sociology (3 cr.)
- THTR 1201 - Theatre in the Making (3 cr.)
- THTR 2099 - Selected Topics for Core Curriculum (3 cr.)
- THTR 3103 - Drama in Context I: Ritual to Pre-Modern (3 cr.)
- THTR 3501 - Scriptwriting (3 cr.)

Category 2: Arab World Studies (3 credit hours)

These courses further deepen a student's liberal arts experience by giving them deeper experience with the Arab world. Courses may dive into the Arab world through examining history, culture, religion, literature, society, architecture, stories, geopolitics or more.

Every student must choose and complete one course in this category.

- ALNG 3333 - Cairo, the City of the Thousand and One Faces (3 cr.)
- ALWT 3919 - El Ard Bititkallim 'Arabi; Know Thy World in Arabic (3 cr.)
- ANTH 2005 - Arab Society (3 cr.)
- ANTH 3301 - Anthropologies of Middle East and North Africa (3 cr.)
- ANTH 3305 - Selected Topics in Arab World Studies (3 cr.)
- ARIC 2001 - Religion and Politics in Islam (3 cr.)
- ARIC 2097 - Selected Topics for the Core Curriculum in Arab World Studies (3 cr.)
- ARIC 2101 - Classical Arabic Literature (3 cr.)
- ARIC 2102 - Modern Arabic Literature (3 cr.)
- ARIC 2103 - Classical Arabic Literature in Translation (3 cr.)
- ARIC 2104 - Modern Arabic Literature in Translation (3 cr.)
- ARIC 2205 - The World of Islamic Architecture (3 cr.)
- ARIC 2346 - Survey of Arab History (3 cr.)
- ARIC 3097 - Selected Themes and Topics in Arabic Literature (3 cr.)
- ARIC 3098 - Selected Topics in Islamic Studies (3 cr.)

- ARIC 3104 - Arabic Literature and Gender (3 cr.)
- ARIC 3106 - Arabic Literature and Film (3 cr.)
- ARIC 3107 - The Writer and the State (3 cr.)
- ARIC 3108 - Colloquial and Folk Literature (3 cr.)
- ARIC 3114 - The Arabic Novel (3 cr.)
- ARIC 3115 - Arabic Drama (3 cr.)
- ARIC 3116 - The Arabic Short Story (3 cr.)
- ARIC 3197 - Selected Themes and Topics in Arabic Literature in Translation (3 cr.)
- ARIC 3321 - Zawiyas, Harems, Coffee shops, Everyday Life in the Pre-Modern Mideast (3 cr.)
- ARIC 3324 - Non-Muslim Communities in the Muslim World (3 cr.)
- ARIC 3343 - Early Islamic History (3 cr.)
- ARIC 3344 - Caliphs and Sultans in the Age of Crusades and Mongols (3 cr.)
- ARIC 3355 - State and Society in the Middle East, 1699-1914 (3 cr.)
- ARIC 3397 - Selected Topics in Middle East History (3 cr.)
- CORE 2097 - Selected Topics for The Arab World (3 cr.)
- CREL 2097 - Selected Topics for the Core Curriculum in Arab World Studies (3 cr.)
- DSGN 3117 - History of Advertising in the Arab World (3 cr.)
- ECON 2051 - Economic History of the Modern Middle East (3 cr.)
- FILM 3120 - Cinema in Egypt and the Arab World (3 cr.)
- HIST 2097 - Selected Topics for the Core Curriculum in Arab World Studies (3 cr.)
- HIST 2203 - Survey of Arab History (3 cr.)
- HIST 2204 - The Making of the Modern Arab World (3 cr.)
- HIST 3208 - Zionism and Modern Judaism (3 cr.)
- HIST 3288 - Selected Topics in Middle East History (3 cr.)
- MUSC 3250 - Music in the Arab Tradition (3 cr.)
- PHIL 3015 - Islamic Philosophy (3 cr.)
- SOC 2301 - Social Problems of the Middle East (3 cr.)
- SOC 2302 - Arab Family Structure and Dynamics (3 cr.)

Category 3: Egypt Studies (3 credit hours)

These courses further deepen a student's liberal arts experience by giving them deeper experience with Egypt. Courses may explore Egypt through examining history, culture, religion, literature, society, architecture, stories, geopolitics or more.

Every student must choose and complete one course in this category.

- ANTH 2006 - Youth Cultures: Anthropologies of Politics and Style (3 cr.)

- ANTH 2098 - Selected Topics in Egypt (3 cr.)
- ANTH 3098 - Selected Topics in Anthropology (3 cr.)
- ARIC 2098 - Selected Topics in Egypt Studies (3 cr.)
- ARIC 2206 - The City of Cairo (3 cr.)
- ARIC 3109 - The World of Mahfouz (3 cr.)
- ARIC 3346 - Egypt since the Arab Conquest (3 cr.)
- CHEM 2001 - Egypt Water Crisis: Challenges and Solutions (3 cr.)
- CORE 2098 - Selected Topics on Egypt (3 cr.)
- EDUC 2041 - Education in Historic & Modern Cairo (3 cr.)
- EGPT 2020 - Ancient Egypt: An Introduction (3 cr.)
- EGPT 3211 - History of Ancient Egypt I: Pre-Dynastic Through Middle Kingdom Egypt (3 cr.)
- EGPT 3212 - History of Ancient Egypt II: Middle Kingdom through Ptolemaic Egypt (3 cr.)
- PSYC 3021 - Psychology of Love and Attraction in Egypt (3 cr.)
- PSYC 3022 - Psychology of Inclusion and Exclusion in Egypt (3 cr.)
- SOC 2201 - Introduction to Community Development (3 cr.)
- SOC 2401 - Society and Culture in Egypt (3 cr.)
- SOC 2402 - Family, Kin and Friends in Egypt (3 cr.)
- SOC 2403 - Social Issues in Egypt (3 cr.)
- SOC 3085 - Environmental Issues in Egypt (3 cr.)

Category 4: Global Studies (3 credit hours)

In Global Studies courses, students engage with complex global issues impacting societies. They develop global awareness and sensitivity to issues beyond Egypt and the Arab world, through examinations of history, culture, religion, society and development around the world, deepening their liberal arts experience and cultivating a sense of global citizenship.

Every student must choose and complete one course in this category.

- AMST 2096 - Selected Topics for Core Curriculum (3 cr.)
- AMST 2190 - Is America Still a Superpower? (3 cr.)
- AMST 3100 - The US and the World Economy (3 cr.)
- ANTH 2096 - Selected Topics for Core Curriculum (3 cr.)
- ANTH 3015 - Global Families: Kinship and Relatedness (3 cr.)
- ANTH 3075 - Language in Culture (3 cr.)
- ANTH 3080 - Gender, Sexuality and Social Change (3 cr.)
- ANTH 3096 - Selected Topics in Global Studies (3 cr.)
- ANTH 3302 - Anthropologies of Africa (3 cr.)

- ARIC 2096 - Selected Topics for the Core Curriculum in Global Studies (3 cr.)
- ARIC 3268 - The Art of the Book in the Islamic World (3 cr.)
- ARIC 3319 - Islamic Spain and North Africa (711-1492 A.D.) (3 cr.)
- ARIC 3345 - Gunpowder Empires: Ottomans, Safavids and Mughals (3 cr.)
- CORE 2096 - Selected Topics for the Core Curriculum in Global Studies (3 cr.)
- CREL 2096 - Selected Topics for the Core Curriculum in Global Studies (3 cr.)
- CREL 2603 - Religions of the World (3 cr.)
- DSGN 3118 - History of Arabic Calligraphy (3 cr.)
- ECLT 2019 - Introduction to American Studies (3 cr.)
- ECLT 3001 - Medieval Literature (3 cr.)
- ECLT 3002 - Renaissance and Early Modern Literature (3 cr.)
- ECLT 3008 - Modern European and American Literature (3 cr.)
- ECLT 3011 - Modern American Literature (3 cr.)
- ECLT 3030 - Literature and Cinema (3 cr.)
- ECLT 3032 - World Literature (3 cr.)
- ECLT 3033 - African Literature (3 cr.)
- ECLT 3045 - Literature and Gender (3 cr.)
- ECLT 3046 - Third World Literature (3 cr.)
- ECLT 3048 - Contemporary Literature (3 cr.)
- ECLT 3052 - Recurrent Themes in Literature (3 cr.)
- ECLT 3053 - Modern Drama (3 cr.)
- ECLT 3099 - Selected Topics (3 cr.)
- EDUC 2011 - Education and Society (3 cr.)
- EDUC 3011 - Educating Children and Youth for a Sustainable Future (3 cr.)
- FILM 3115 - Topics in American Cinema (3 cr.)
- FILM 3125 - Topics in National Cinemas (3 cr.)
- HIST 2096 - Selected Topics for the Core Curriculum in Global Studies (3 cr.)
- HIST 2104 - A History of the Whole Wide World (3 cr.)
- HIST 2300 - Becoming African (3 cr.)
- HIST 2301 - The Struggle for Africa (3 cr.)
- HIST 2501 - The Making of America (3 cr.)
- LING 2201 - Languages of the World (3 cr.)
- LING 3075 - Language in Culture (3 cr.)
- MENG 2200 - The Art, Science, and Global Aspects of Contemporary Sculpture (3 cr.)
- MUSC 2000 - World Music (3 cr.)
- MUSC 2010 - The Songs of the Americas (3 cr.)
- MUSC 3099 - Selected Topics in Music (3 cr.)
- PHIL 2200 - Philosophy and Globalization (3 cr.)

- PHIL 3016 - American Philosophy (3 cr.)
- POLS 2096 - Selected Topics for Core Curriculum (3 cr.)
- POLS 2405 - History and International Politics (3 cr.)
- PPAD 2096 - Selected Topics for the Core Curriculum (3 cr.)
- RHET 3130 - Travel Writing (3 cr.)
- SOC 3025 - Development Agencies (3 cr.)
- SOC 3045 - The Urban Experience (3 cr.)
- SOC 3060 - Social Constructions of Difference: Race, Class and Gender (3 cr.)
- SOC 3303 - Social Movements (3 cr.)
- SOC 3304 - Social Class and Inequality (3 cr.)
- SOC 3305 - Selected Topics in Sociology (3 cr.)

III. Capstone Level: 6 credit hours

These courses help bring together all of a student's liberal arts education into a single capstone experience. These courses examine a topic in both breadth and depth, requiring students to look into a topic in a thorough, multidisciplinary manner and to demonstrate mastery of high-level learning outcomes.

Only 3 of the 6 credit hour requirements in this category may be taken in the department of major. The other 3 must be from outside the major.

Any 3000 or 4000-level community-based learning courses not listed in this category and any study abroad courses must be approved by the Core Curriculum in order to count for Capstone credit. Students are advised to check approval of courses with the Core Curriculum Program prior to their study abroad if they wish for their course to count for Core Capstone credit.

- ACCT 4005 - Contemporary Issues in Financial Reporting (3 cr.) *
- AMST 4001 - Selected Topics for Core Curriculum (3 cr.)
- ANTH 4020 - Anthropology of Violence (3 cr.)
- ANTH 4025 - Religion in a Global World (3 cr.)
- ANTH 4065 - Culture, Economy and the Everyday (3 cr.)
- ANTH 4099 - Selected Topics in Anthropology (3 cr.)
- ANTH 4107 - Senior Thesis (3 cr.) *
- ANTH 4203 - Practicum in Community Development (3 cr.) *
- APLN 5323 - Discourse of Analysis for Language Teachers (3 cr.)
- ARCH 4801 - Human and Environmental Studies Theory and Dissertation (3 cr.)
- ARCH 4802 - Tectonics and Computational Design Theory and Dissertation (3 cr.)
- ARCH 4803 - Architecture and Urban Heritage Theory and Dissertation (3 cr.)

- ARCH 4935 - Coptic Art and Architecture (3 cr.)
- ARIC 5102 - Cairo in the Cultural Imaginary (3 cr.)
- ARIC 5137 - International Trade 1000 - 1700: Egypt and the Mediterranean - Red Sea Trade (3 cr.)
- ARTV 4270 - Senior Project (B) (3 cr.) *
- BADM 4001 - Business Strategy (3 cr.) *
- BADM 4900 - Graduation Project (3 cr.) *
- BIOL 4980 - Senior Research Thesis (1 cr.) *
- BIOL 4981 - Seminar in Biology (2 cr.) *
- CENG 4980 - Senior Project I (1 cr.) *
- CENG 4981 - Senior Project II (2 cr.) *
- CHEM 4980 - Senior Thesis I (1 cr.) *
- CHEM 4981 - Senior Thesis II (2 cr.) *
- CORE 4198 - Selected Topic for Core Curriculum (3 cr.)
- CSCE 4980 - Senior Project I (1 cr.) *
- CSCE 4981 - Senior Project II (2 cr.) *
- DSCI 4416 - Capstone l (Data Science Senior Project l) (1 cr.)
- DSCI 4417 - Capstone II (Data Science Project II) (2 cr.)
- DSGN 4270 - Senior Project Practice (3 cr.)
- ECLT 4099 - Capstone Seminar: Selected Topics (3 cr.)
- ECLT 5106 - Greek Classics in Translation (3 cr.)
- ECLT 5108 - History of Literary Criticism (3 cr.)
- ECLT 5109 - Modern Literary Criticism (3 cr.)
- ECNG 4980 - Senior Project I (1 cr.) *
- ECNG 4981 - Senior Project II (2 cr.) *
- ECON 3071 - Labor Economics (3 cr.) *
- ECON 4051 - Seminar on Economic Development and Policy in the Middle East (3 cr.) *
- ECON 4099 - Seminar: Selected Topics in Economics (3 cr.) *
- EDUC 4098 - Selected Topics for Core Curriculum (3 cr.)
- EGPT 5199 - Selected Topics in Egyptology (3 cr.) **
- ENGR 4990 - Entrepreneurial Development and Innovation (3 cr.)
- ENGR 5101 - Cross Talk: Implementation Science and Engineering (3 cr.)
- FILM 4250 - Senior Film Project I (3 cr.) *
- FILM 5170 - Advanced Seminar in Film Studies and Research (3 cr.)
- FINC 4301 - Corporate Finance (3 cr.) *
- GWST 5199 - Crossing Boundaries: An Introduction to Gender and Interdisciplinarity (3 cr.)
- HIST 4111 - Arabs in America (3 cr.)

- HIST 4113 - Ideas Dictators Hate (3 cr.)
- HIST 4188 - Selected Topics in World History (3 cr.)
- HIST 4215 - The Marriage Crisis and the Middle East (3 cr.)
- HIST 4216 - Remembering Cairo (3 cr.)
- HIST 4219 - Modern Movements in Islam (3 cr.)
- HIST 4288 - Selected Topics in the History of the Modern Middle East (3 cr.)
- HIST 4290 - Selected Topics in Modern Egyptian History (3 cr.)
- HIST 4303 - Global Capitalism and Africa: An Economic History (3 cr.)
- HIST 4488 - Selected Topics in European History (3 cr.)
- HIST 4588 - Selected Topics in the History of the United States (3 cr.)
- JRMC 4420 - Media Management (3 cr.) *
- JRMC 4425 - Integrated Marketing Communication Campaigns Capstone (3 cr.) *
- JRMC 4480 - Multimedia Reporting Capstone (3 cr.) *
- JRMC 4482 - Media Convergence Capstone (3 cr.) *
- LAW 4210 - Law and Global Governance in the 21st Century (3 cr.)
- LAW 4212 - Law and Justice in our Times (3 cr.)
- MACT 4950 - Practical Internship (3 cr.) *
- MACT 4980 - Senior Thesis (3 cr.) *
- MACT 4990 - Enterprise Risk Management (3 cr.) *
- MENG 4980 - Senior Project I (1 cr.) *
- MENG 4981 - Senior Project II (2 cr.) *
- MEST 4301 - Special Topics in Middle East Studies (3 cr.)
- MGMT 4970 - Special Topics in Management (3 cr.)
- MKTG 4602 - Marketing Strategy (3 cr.) *
- MOIS 4999 - Internship and Graduation Project (3 cr.)
- MUSC 4900 - Advanced Seminar (3 cr.)
- PENG 4980 - Senior Project I (1cr.) *
- PENG 4981 - Senior Project II (2 cr.) *
- PHIL 5101 - Advanced Seminar in Classical Philosophy (3 cr.)
- PHIL 5104 - Selected Topics in Contemporary Philosophy (3 cr.)
- PHIL 5112 - Advanced Seminar in Aesthetics (3 cr.) **
- PHIL 5119 - Advanced Seminar in Political Philosophy (3 cr.)
- PHYS 4980 - Research Skills (1 cr.) *
- PHYS 4981 - Senior Thesis (2 cr.) *
- POLS 4000 - The Discipline and Critical Social Theory (3 cr.) *
- POLS 4030 - Seminar: Special Topics in Political Science for Undergraduates (3 cr.) *
- POLS 4640 - Seminar: Special Topics in International Relations for Undergraduates (3 cr.)
- POLS 5130 - Seminar: Special Topics in Political Science (3 cr.)

- POLS 5140 - Seminar: Special Topics in International Relations (3 cr.)
- PPAD 5161 - Diplomacy: Theory and Practice (3 cr.)
- PPAD 5198 - Practicum (3 cr.) *
- PSYC 3202 - Participatory Action Research in Community Settings (3 cr.)
- PSYC 4062 - Clinical Psychology (3 cr.) *
- PSYC 4063 - Advanced Community Psychology (3 cr.) *
- PSYC 4203 - Practicum in Community Development (3 cr.)
- RHET 3140 - Writing Children's Literature (3 cr.) *
- RHET 4160 - Imagining the Book (3 cr.) *
- RHET 4260 - Writing for Project Funding (3 cr.) *
- RHET 4270 - Research and Writing Internship (3 cr.) *
- RHET 4360 - Writing for Publication (3 cr.) *
- SEMR 3099 - Core Seminar (3 cr.)
- SEMR 4018 - East-West Dialogue: Cross-Cultural Perceptions and Reflections (3 cr.)
- SEMR 4028 - The Arab Spring in Arab Eyes: Perceptions and Reflections from the Arab World (3 cr.)
- SEMR 4038 - South-South Dialogue: Perceptions and Reflections from the Global South (3 cr.)
- SOC 3202 - Participatory Action Research in Community Settings (3 cr.)
- SOC 4107 - Senior Seminar (3 cr.)
- SOC 4560 - Development Studies Seminar (3 cr.)

** All prerequisites apply*
*** by instructor's permission*
To see SEMR course descriptions, please click here.
To see CORE course descriptions, please click here.

Graduate Admissions

Graduate Admissions
Non-degree Admissions
Other Admissions

Graduate Admissions

Graduate applicants must complete the Graduate Admission application by the set deadlines, including all required documents/credentials. A file for each applicant is prepared, and evaluated by the Office of Graduate Admissions to ensure that the applicants have met the minimum requirements as indicated by the university catalog. The file is then evaluated by the relevant program for recommendation. The relevant school dean then reviews the file and the program recommendation, and sends his/her recommendation to the Dean of Graduate Studies for review

and final recommendation. The Office of Graduate Admissions finalizes the admission evaluation, and admission decisions are then announced based on the four stages of evaluation. If accepted, then letters of admission are sent out to the applicants indicating the conditions of the admission offer. Additionally, information regarding advising, registration, tuition payment, contact persons, and next steps in general are also provided. Applicants for whom AUC does not have an offer of admission are also informed of this final decision.

Graduate students who have previously been dismissed for the expiration of the study period cannot seek new admission to the same program, but can seek admission to other programs.

Graduate students who have previously been dismissed for failing 2 or more courses cannot ever seek new admission to the same program, but can seek admission to other programs 5 years after the semester in which this dismissal was applied.

For other cases of dismissal, please refer to the section " Probation, Dismissal, Course Repeat and Retake " in the Graduate Requirements and Regulations.

Criteria for Admission of Graduate Students

The university requires the following minimum standards in admitting graduate students. Actual admissions for a given program may be at a higher level as specified by this program.

Qualifications for graduate programs

Applicants for graduate study must have an accredited Bachelor's degree with an academic record at a level sufficient to qualify for full or provisional admission as described under "Categories of Admission" below. For consistency, the final grades for all transcripts submitted will be calculated to a final GPA mark on a scale of 1 to 4, where 4 is the highest grade. Transcripts showing only a rank grade (such as gayyed gidan), without indication of a GPA or percent value will be calculated as follows:

Emteyaz	= Excellent	= 3.75 GPA
Gayyed Gidan	= Very Good	= 3.25 GPA
Gayyid	= Good	= 2.75 GPA
Makboul	= Pass	= 2.25 GPA

However, when transcripts show grade rank value (such as gayyed gidan), as well as GPA or percent value, then the GPA or percent value will be converted to a GPA value on a scale of 1-4, and will take priority over the rank value. Furthermore, in cases where both a GPA and a percent

value are indicated in the transcript, the higher value, resulting from the conversion to a GPA (scale 1-4), will be selected as the final GPA (scale1-4).

Additional criteria such as the following may also be considered when evaluating a candidate for admission to the graduate program:

1. Evidence of academic English proficiency as required by the relevant graduate program.
2. Test scores (GRE, GMAT, etc. where applicable).
3. Maturing time since undergraduate experience.
4. Work experience in a field related to the program applied for.
5. Strong faculty advocacy with written intent to mentor the student.
6. References from instructor and/or employer speaking to motivation and maturity.
7. Personal interview.
8. Departmental Arabic language test for specific programs.
9. Any post high-school academic records showing evidence of being prepared for graduate level courses.

Qualifications for Ph.D. Degree programs

Applicants must have completed both an accredited Bachelor of Science degree and an accredited Master's degree with an academic record at a level sufficient to qualify for admissions. In addition to the criteria mentioned above for Master's degrees, the following is also considered when evaluating a candidate for admission to the Ph. D. program:

1. Academic performance showing evidence they are prepared for Ph.D. level courses.
2. Thesis abstract.
3. Research interest and objectives.
4. Evidence of academic English proficiency prior to enrollment.

English Language Proficiency

Applicants must demonstrate knowledge of adequate English language for graduate studies. For full admission to the university, graduate applicants must attain the required score on the Test of English as a Foreign Language (International TOEFL, iBT), or on the International English Language Testing System (Academic IELTS) examination, or on the academic Cambridge Assessment English test. (only Advanced or Proficiency exams are accepted). Each student's satisfactory English language test results will determine whether he/she will be assigned remedial English language courses. Combining band scores from different tests to determine the final placement is not possible.

Exemptions from these English language examinations are allowed if all the following conditions are met:

1. The applicant is currently enrolled, recently enrolled (within a maximum of 2 years prior to the intended start semester at AUC), or graduated from an accredited university where English is the sole language of instruction (this requirement does not apply to bilingual universities in Canada), and the program of study is an academic one and was instructed solely in English. Enrollment refers to one continuous year of full course load (a minimum of 9 credit hours per semester for graduate studies or 12 credit hours per semester of undergraduate studies, or their equivalent). English language courses are not included in this count.
2. The mode of study was full-time attendance.
3. The accredited university is in a country where English is an official language. Alternatively, the following conditions are satisfied:

   a. The University is classified in the World Higher Education Database (WHED) or in the International Handbook of Universities as an institution where English is the "sole" language of instruction;

   and

   b. Either one of the following is satisfied:

      (i) The English language requirements of the home university are no less than those required at AUC for a full admission status. In this case, the applicant must submit an official confirmation from the home university's registrar, with reference to test details and results, that the applicant has met the home university's English language placement requirements for admission.

   or

      (ii) The applicant completed at least 1 year of academic studies at AUC and successfully completed the remedial English language courses that were assigned to her/him.

Conditional exemption from point 3 is not applicable for applicants to the English and Comparative Literature (ECLT) graduate program and for applicants to the Teaching English to Speakers of Other Languages (TESOL) graduate program, except for those applicants who hold an AUC bachelor's degree in English and Comparative Literature.

There can be no waiver for the required English language examination if:

- It is a mandatory requirement for fellowship eligibility at AUC.
- The accredited degrees earned were completed under an affiliation or joint program, where such degrees are earned from an accredited institute where English is the sole

language of instruction, but full-time attendance was at another accredited institute that is in a country where English is not an official language. In case this other accredited institute is one where English is the sole language of instruction as per the classification of the World Higher Education Database or in the International Handbook of Universities, point (3.a) above applies.

- Valid iBT TOEFL or academic IELTS or Cambridge Assessment English tests results are evident and indicate a placement of less than full admission, in which case the test results will over-rule all other reasons for possible test exemptions.
- If a waiver was previously applied for other AUC academic studies where less than 2 semesters of full-time studies were successfully completed at AUC: This specifically addresses those students who were admitted to AUC as exchange students under an agreement mandating an English test waiver, and who completed only 1 semester of studies at AUC.

Additional notes:

- Degree-seeking applicants who do not attain the minimum test score required for full admission, but are otherwise qualified for admission are placed in an English language Instruction (ELI) course for further language study.
- Non-degree seeking applicants must attain at least the test score required for full admission to be accepted.
- Applicants may submit results for more than one test as long as these are submitted within the approved admission evaluation deadlines. The highest of the valid scores will be considered for admission. Combining band scores from different tests to determine the final placement is not possible.
- The validity of any of these English language examinations is two years from the day of the exam. The results will not be considered for graduate admission if the expiry date is before the first day of registered classes at AUC.
- The American University in Cairo reserves the right to request English proficiency test results from any applicant as deemed necessary.

Computer and Library Skills

Graduate students may be asked to demonstrate a minimum competency in use of computers and academic libraries as they relate to graduate study and research.

Entrance Examination

The program of major may require applicants to sit for a graduate entrance examination, the results of which will be considered at the time of admission.

1. The Department of Management requires MBA applicants to sit for the Graduate Management Admission Test (GMAT):

> While GMAT scores are currently not required, applicants are highly recommended to include them in their application, especially if also applying for fellowship support. However, if not submitted with the application, and upon the completion of the interview with the program, applicants may be asked to submit satisfactory GMAT, with minimum scores as determined by the program.

2. The Teaching Arabic as a Foreign Language program may require an Arabic Language Test based on the evaluation of the application.

GRE and GMAT exams have a validity of 5 years from the test date. If GRE and GMAT results are to be considered for admission to graduate studies, then the expiry date of their validity must fall after the first day of classes of the first semester of registration in the relevant graduate program.

Graduate Diploma Programs

The university offers a number of graduate diploma programs for which a bachelor's degree with an acceptable GPA are required.

When recommended by program faculty, students may be accepted for diploma programs without commitment or expectation of future admission for a master's degree.

Diploma applicants follow the same requirements and procedures for admission as master's degree-seeking students.

Admission Deferral

Only fully admitted applicants may defer their admission if the deposit against their tuition is paid to hold a place in the program, and the deferral request must be placed before the first day of classes of the semester originally applied to. This privilege may be exercised only once, and the deferral can be for a maximum of one academic year. Full admission that is conditioned by the submission of original documents will not be considered for deferral if these requirements are not submitted within the deadlines set by the Office of Graduate Admissions.

In cases where admitted applicants' test results expire before the start of the semester to which admission is to be deferred, the test results that were approved for admission will apply to the deferred-to semester.

Applicants granted provisional admission cannot defer their admission, but may reapply in a subsequent semester.

Applicants are allowed 2 weeks after the admission application deadline, to complete the credentials of the application. If during this allowance period the applicant decides that he/she cannot submit the required test results on time, then the application can be deferred, upon the applicant's request, to a subsequent semester, only if all other credentials are submitted, and all that remains pending is the test results. This type of deferral request is not permitted past the allowance period. Incomplete files can be deferred for processing to only the nearest following semester when an admission to the program is next available to applicants. This allowance is permitted only once per graduate admission application and must be requested before the first day of classes of the semester initially applied for.

Medical Examination Requirements *(admitted students only)*

Students with special medical requirements or those who would prefer that the Medical Center be made aware of specific medical conditions/needs are advised to communicate these conditions and establish contact with the specialists at the clinic, once on campus.

Categories of Admission

Categories of admission depend upon the applicant's qualifications, status, and study plan.

To be considered for graduate admission, an applicant must meet one of the following requirements:

- A bachelor's degree with an overall grade-point average (GPA) of at least 2.75 or its equivalent, and 3.0 or its equivalent in the major.
- An overall average of gayyid giddan on a bachelor's degree from an Egyptian national university if a GPA equivalency value is not indicated.
- A graduate degree with a minimum overall average of 3.0 GPA if the degree is closely related to the intended major.
- An equivalency index for local and international degrees is the main reference used for equating degree grades or percentage marks on transcripts. The index is based on a GPA scale of 1 to 4, where 4 is the highest value.

Full Admission

Full admission may be granted to applicants who have met the minimum criteria for graduate admission.

The program of the major may require satisfactory performance on an examination or interview.

Full admission may also be attained by fulfilling the conditions specified under the provisional admission category below.

Provisional Admission

Provisional admission may be granted to those applicants not qualifying for full admission, but who have additional attributes that give them a high potential for success in a given graduate program.

Under provisional admission, an applicant may be required to take English courses, a number of specified prerequisite courses, or fulfill an academic condition. He/she is required to achieve a minimum of 'B' in each of these prerequisite courses or his/her admission at AUC will be discontinued.

In some instances, students may not be required to fulfill any prerequisites while on provisional status; however, in this case, they are considered on probation and must achieve a minimum 'B' in each of the courses specified and over a specific time duration, or they will be dismissed dropped from the program.

Dual Degree Admission

Graduate students may pursue two distinct graduate degrees (two master's degrees, or a diploma and a master's degree, or 2 graduate diploma degrees) in different majors, either simultaneously or consecutively. In any case, the student must seek admission to and be accepted by each program of concern, and then fill out a "Dual Graduate Degree" form, which is available on at the Office of the Registrar's webpage https://www.aucegypt.edu/students/registrar/online-forms

Graduate Non-degree Admission

Applicants not seeking an AUC degree but wish to take AUC courses for academic credit may be admitted as a non-degree if they meet the minimum criteria for graduate admission. A number of places are set aside each year for non-degree seeking students, most of whom take up to a year away from their studies at another institution to study and live in Egypt. Since AUC is a U.S. accredited institution following an American system, students from U.S. universities are usually able to transfer AUC credits to their home institutions, but they are advised to check in advance. Non-degree applicants follow the same procedures for admission as degree-seeking applicants. They are, however, not required to submit letters of recommendation or GMAT or GRE entrance exams.

Graduate Non-Degree applicants:

1. Must attain full admission status, including the necessary English language proficiency test results, prior to being approved for admission: https://documents.aucegypt.edu/Docs/admissions_grad_req/Grad%20Language%20Requirements.pdf

2. Interested in graduate courses in English and Comparative Literature (ECLT) or Teaching English to Speakers of Other Languages (TESL), must achieve English test results that are required for full admission to these programs.
3. Interested in graduate courses offered by the Master of Business Administration (MBA) or Finance (FINC), can register (if admitted) for a maximum of 3 courses that could count to the degree- seeking program of each.
4. Are allowed a maximum of two subsequent semesters, to complete any of the approved courses indicated in the letter of admission and starting with the semester indicated in the letter.

Upon request, the university may approve a change of status from non-degree to degree student. The student will need to apply afresh for admission consideration to the degree-seeking program(s), and if a graduate non-degree student should become a degree candidate, the department of major will consider the possibility of accepting credit for courses taken under non-degree status, for up to a maximum of 3 graduate courses successfully completed, with a minimum average grade of B, within 5 years prior to the date of first registration as a degree-seeking student in the program of relevance. All academic regulations applicable to degree students will apply retroactively with such a change of status.

Non-degree applicants must indicate in their application a list of courses of interest. International applicants are recommended to indicate no less than 6 such graduate courses, out of which registration must be for at least 3. Egyptian applicants can indicate 3 for which approval is sought and out of which at least 1 course is selected for registration. Courses can be selected from the list of graduate programs offered each semester: Graduate Degree Programs.

Graduate Exchange or Study Abroad Admission

Students joining AUC for a semester through an agreement with a partner university are also non degree seeking students who have been nominated by their home university for this exchange opportunity. The home university's admission criteria will be taken into account for admission consideration at AUC. Recent graduate transcripts verifying studies at the partner university are required. However, the English placement requirement for admission can be satisfied by means of taking one of the approved English tests, or by providing alternative documentation that is specific to exchange or study abroad applicants, of having met the required English proficiency for graduate studies at AUC.

Other Categories

Auditing

Those who wish to attend individual classes may apply as auditors; however, they may not sit for final examinations, nor receive academic credit or any university certificate of enrollment.

Auditors do not have to meet all requirements for regular admission but must apply by the end of the first week of classes of each semester, by submitting a form with the instructor(s) approval, and then by filling out the application form. Since permission to audit is on a space-available basis, applicants are not permitted to register until after the registration of regular students has been completed. Auditors are not allowed to enroll in language courses.

Complete forms should be forwarded to enrolauc@aucegypt.edu

Links to forms:

- Auditor registration form
- AUC-Registrar online forms

Non-Egyptian applicants must have a permanent resident visa or a work permit visa to be eligible to apply for auditing courses.

Readmission

AUC students who withdraw from the University in good standing and subsequently wish to return may apply for readmission. The semester to which readmission is requested must be within the study period, as specified in the section " Enrollment Status and Time Limit for a Degree Completion" of the Graduate Academic Requirements and Regulations. Application must be made before the appropriate application deadline, and the applicant must meet all the admission requirements prevailing at the time of readmission. Readmission is not guaranteed.

Dismissed students may petition for readmission taking into account the conditions specified in the section "Dismissal, Probation, Course Repeat and Retake" under Graduate Academic Requirements and Regulations, and must meet all the admission requirements prevailing at the time of readmission. Readmission is not guaranteed.

Students who are dismissed because they have not successfully completed the English language requirements in two semesters, may petition for readmission and are required to submit new valid International TOEFL with TWE, (iBT) or Academic IELTS or Cambridge Assessment English (only Advanced or Proficiency), demonstrating a level of proficiency that is higher than previously registered for: If they were students in intensive English course ELIN 0301 or ELIN 0302 then their new test results must place them in the level of Academic English Language modules or in direct admission with no English language requirements; if they were students in Academic English language modules, then their new test results must place them in direct admission with no English language requirements.

Students who withdraw from the University without having completed at least one graduate or prerequisite course required for their degree program may seek readmission so as to resume their

studies no later than 4 semesters following the semester of their withdrawal. Beyond 4 semesters, these students would need to apply afresh for admission. This privilege may be exercised only once.

Conditions in the table below apply

English Level at Time of Withdrawal	Lapse of Time (measured to the first day of the semester)	iBT TOEFL /Academic IELTS Required
Completed all language requirements	Less than 24 months	No
Completed all language requirements	More than 24 months	Yes, and apply afresh for admission
Enrolled in Intensive English or Academic English	Less than 12 months	No
Enrolled in Intensive English or Academic English	More than 12 months	Yes
Enrolled in Intensive English or Academic English	More than 24 months	Yes, and apply afresh for admission

Summer/ Winter Admission

The University does not usually admit graduate degree-seeking students for the summer session, but exceptional cases may be brought to the attention of the Dean of Graduate Studies for consideration.

New degree-seeking students are not admitted to the winter session.

Non-degree applicants for the summer or winter sessions should follow the application procedures for non-degree admission and must submit their application forms by the admission deadlines set for the following semester. For more information about the programs: Graduate Degree Programs.

Graduate Academic Requirements & Regulations

Academic requirements and regulations govern the relationship between the university and its students. Students must complete the general academic requirements described below as well as those listed under individual degree programs (described in the next section) in order to obtain an academic degree.

The academic regulations described in this section are effective at the time of publication. The university reserves the right to modify them, in which case changes will be announced when necessary. The student is responsible for being aware of all academic regulations. Current university regulations apply regardless of the regulations in effect at the time a student entered the university, except where current regulations specifically state the contrary.

Student Responsibility

Students are responsible for familiarizing themselves with the information presented in this catalog and for observing all policies and procedures related to their participation in the university community. In addition, AUC has adopted a set of policies and procedures concerning the statutes and regulations on the campus. Copies of these policies and procedures may be obtained at the Office of the Registrar.

Regulations will not be waived nor exceptions granted based on a student's lack of awareness of the policies and procedures of the American University in Cairo. Although a number of university personnel (e.g. advisors, faculty members, registrar, departmental staff, and student affairs staff members) assist students, the student is personally responsible for following all policies and meeting deadlines and requirements. This responsibility includes, but is not limited to, academic requirements and the rules listed under the appropriate information sections of this catalog.

Privacy Rights of Student Records

Students have the right to access their own official records. The written consent of the student must be received before personally identifiable data is released from the student's records to any party other than the exceptions specified below.

While the university is authorized under the United States Family Educational Rights and Privacy Act of 1974 to release "directory information" about students, AUC does not publish a student directory. Student information is subject to release by the university unless the university has

received prior written objection from the student specifying information that the student requests not to be released. Such written objection should be submitted to the Office of the Registrar.

AUC is authorized to provide access to student records to campus officials and employees who have legitimate educational interests in such access. These persons are those who have responsibilities in connection with the academic, administrative, or service functions of the university and who have reason for using student records connected with their academic or other university responsibilities. Disclosure may also be made to other persons or organizations under certain conditions (e.g. as part of an accreditation or program evaluation; in response to a court order or subpoena; in connection with financial aid; or to US institutions to which the student is transferring).

Click on any of the following links for information:

- Graduate Academic Requirements
- Graduate Academic Regulations
- Non-degree Academic Regulations

Graduate Academic Requirements

The university has established the following general requirements which apply to all students working toward a graduate diploma, master's degree or a Ph.D. Specific requirements for each degree program are described under the relevant "Fields of Study."

The degree programs described represent the core of the university's wide range of academic and service activities. The university also conducts significant programs in research, training, and adult education, which are briefly listed in a separate section of this catalog and in more detail in other publications. Nondegree, intensive language programs in English and Arabic are described in the "English and Arabic Language Programs" section.

Adviser

Upon starting the program of major, the student will be assigned an academic adviser who will provide counsel concerning degree requirements, course offerings, preparation for the comprehensive examination, and selection of a thesis topic and thesis supervisor. When a thesis topic and supervisor are selected and approved, the thesis supervisor then also becomes the academic adviser.

Residence

Residence is the period of study completed at AUC. For the master's and for the PhD degrees, two-thirds of the required credit hours, excluding research seminars and thesis credit hours, must

be completed in residence. An acceptable thesis is also required. Additional courses are assigned in lieu of the thesis if it is optional.

Enrollment Status and Time Limit for a Degree Completion

The normal load for a full time student is 9 credit hours per semester. Upon the recommendation of the program concerned, students may register for up to 15 credit hours per semester.

A student taking a load of less than 9 credit hours per semester is typically considered a part-time student. A foreign student taking a course load of 9 credit hours per semester is entitled to university certification for obtaining a student visa. Foreign students carrying less than a full load are not entitled to such certification unless they are fellows or sponsored students. In case of withdrawal, the university reports to the Egyptian authorities to cancel the student residence visa that was received through the university.

Typically, the completion of these requirements takes two years of full time academic work for the master's degree, and five years for the PhD degree. Students unable to carry a full course load may be permitted to take more time to complete their degree. However, they must complete all requirements, including the thesis, where applicable, within five years of the date of first registration as a provisional or fully admitted graduate student in a master's degree program. Students enrolling in the master in Counseling Psychology program must complete all requirements within six years of their provisional or full admission to the program. Students enrolling in the PhD program must complete all requirements within seven years of their provisional or full admission to the program. The time limit does not include semesters for which students are only enrolled in English language instruction. Any period of interrupted studies, such as an approved Planned Educational Leave of Absence, or a period of temporary withdrawal, is counted as part of the time period required for degree completion.

An academic program may grant an extension for completing the degree beyond the set limit by one semester, up to a maximum of one academic year. This requires the approvals of the dean of the degree program and the dean of Graduate Studies.

Comprehensive and Qualifying Examinations

A student may sit for a required comprehensive examination after completing 24 credit hours or while taking the final 6 credit hours. Comprehensive examinations are offered usually in mid-December and mid-April. Students not registered for courses or thesis credit hours and planning to sit for the comprehensive examination in any semester must register for comprehensives in that semester and pay tuition equivalent to one graduate credit hour.

A PhD student should sit for the PhD qualifying examination the semester immediately following the completion of the required course credit hours, but no later than the fourth semester since full or provisional admission. The exam is offered twice a year: once in each of the fall and spring semesters. Dates are announced at the beginning of each academic year. A PhD student can only sit for the PhD qualifying examination while enrolled at AUC.

Comprehensive and qualifying examinations may be repeated once. A student who fails the comprehensive or qualifying examination a second time would be dismissed from the degree program after the end of the semester in which the examination was retaken.

Thesis Requirements

Additional to required courses, most master's degree programs and the PhD program require a thesis. Exceptions to this requirement are noted in the descriptions of the individual programs, which may specify supplementary requirements instead of a thesis.

The student is responsible for selecting and developing a thesis topic which has program approval and for which a qualified supervisor is available. In consultation with the supervisor, the student must submit a thesis proposal, as per the specifications of the degree program, for consideration by the program. Once the proposal is approved, the student may proceed with thesis research and writing. A copy of the proposal approval must be kept in the program of major.

At the program's discretion, and in order for a master's student to embark on his/her thesis work, the student may register for Research Guidance and Thesis credits, and pay tuition equivalent to 3 credit hours each semester until completion of the thesis. For a PhD student, he/she may register for up to 9 credit hours of Research Guidance Dissertation credits each semester. A student who does not complete the thesis requirement within the period of two semesters for master's degrees, three semesters in case of M.Sc. in Finance and within the assigned total number of dissertation credits for a PhD degree, will be charged a fee equivalent to one graduate credit hour for each additional semester of thesis registration.

The thesis must be written in English. It will be judged on content, organization, documentation, and presentation and originality. Guidelines on thesis writing and format are available at the graduate studies website.

Approvals from the Institutional Review Board and CAPMAS

All research involving human subjects requires in-advance approval from AUC's Institutional Review Board (IRB). Each student's thesis supervisor is responsible for ensuring that the student has obtained IRB approval, where applicable, before embarking on thesis work. Thesis work involving human subjects and conducted without obtaining prior IRB approval cannot be used.

Without proper IRB approval, the thesis cannot be accepted nor be posted on **AUC Knowledge Fountain**, and the student is not eligible to graduate. For more information, please refer to the IRB webpage https://www.aucegypt.edu/research/institutional-review-board

For some research, approval from the Egyptian Central Agency for Public Mobilization and Statistics (CAPMAS) is required for data collection. Where applicable, a student must secure this approval prior to his/her data collection.

Submission of Thesis

If the degree is expected at the end of the fall semester, an acceptable (supervisor -approved) thesis must be presented by November 15. If graduation is expected at the end of the spring semester, the deadline for submitting the thesis is April 1. Each student is advised to submit the thesis early to allow time for the revisions which may be required. Otherwise, awarding of the degree may be delayed.

Within three weeks of submission of the thesis, the candidate will meet with the committee appointed by the program for an examination of the thesis. The committee may include members from outside the department or outside the university.

All revisions required by the committee must be incorporated in the final copy. The originality of the final thesis text must be checked. The committee members may consider the revised thesis individually or schedule another meeting with the candidate.

The electronic copy of the accepted and signed thesis is submitted to the office of the dean of the degree program by the third Tuesday of January (for fall, and winter graduates), by the third Tuesday of May (for spring graduates) and by the third Tuesday of July (for summer graduates). If the thesis is submitted late, the degree will not be conferred that semester. In addition to submitting a digital file of the thesis, students are required to submit an electronic version of the thesis, including the required forms and the completed signature page, directly to **AUC Knowledge Fountain** (https://fount.aucegypt.edu/)

Graduate Academic Regulations

Registration

Students must register during the official registration period at the times announced in the university calendar. They should plan their courses with their advisers prior to registration and follow the instructions contained in bulletins issued by the Office of the Registrar or on the Registrar's web site. Planning forms are available on the Registrar's webpage: https://www.aucegypt.edu/students/registrar. For foreign students, registration must be completed before a student visa can be issued.

Newly admitted degree-seeking students must successfully complete the online Academic Integrity Modules during their first semester at AUC. Registration in subsequent semesters shall not be possible until the successful completion of these modules.

Change of Courses

With careful attention to the degree requirements and course offerings, there should be minimal need for course changes after registration has been completed. Any student who desires a change must follow the instructions contained in the bulletin issued by the Office of the Registrar. Change of courses can only take place during the start of a semester during the drop/add period determined by the Office of the Registrar .

- No other course may be substituted for a required course unless university action requires that the change be made.
- A course may not be added to the student's schedule after the registration deadline.
- Students may drop and/or add courses without penalty during the formal "Late Registration and Course Changes Period" specified in the bulletin issued by the Office of the Registrar.
- A course may not be added to the student's schedule after the end of the period of Late Registration and Course Changes.
- Students may drop a course and receive a "W" grade during the seven weeks following the conclusion of any period of Late Registration and Course Changes associated with a fall or spring semester (that is, up to eight weeks after the beginning of a semester).
- Students are not permitted to drop classes after the seventh week of the closing date of Late Registration and Drop/Add operations.
- Students will receive a grade of "F" if they stop attending classes without officially dropping the course.
- Students may petition their dean for permission to drop a class and receive a "W" grade after the seventh week of the closing date of Late Registration and Drop/Add operations. However, such petitions will be approved only in special cases, which in most extraordinary circumstances will mean documented health or family crises. Petitions will be neither accepted nor approved for the purpose of avoiding a low or failing grade.
- Fulltime international transfer students may petition for permission to drop a class and receive a "W" grade after the seventh week of the closing date of Late Registration and Drop/Add operations by seeking the approval of the concerned program director and dean. In general, such petitions will be approved only in special cases, which in most circumstances will mean documented health or family crises. Petitions will be neither accepted nor approved for the purpose of avoiding a low or failing grade.

Course Substitution

A course substitution is the replacement of a required course for a degree with another course, provided that the latter meets the learning outcomes of the required course. In the unlikely event that a course substitution is needed, the concerned student must complete a course substitution form available at the Office of the Registrar's webpage: https://www.aucegypt.edu/students/registrar and secure all the necessary approvals on the form before submitting the completed form to the Office of the Registrar. Course substitution is limited to up to one-third of the credit hours of the course work required for a graduate degree.

Credit Hours

Coursework is counted in credit hours. In general, a credit hour represents a one-hour class period and at least two hours of individual study each week for one semester.

Academic Load

The normal load for a full-time graduate student is 9 credit hours per semester. Upon the recommendation of the program concerned, students may register for up to 15 credit hours per semester, at an extra tuition charge. In this respect, overload forms are available at the Office of University Registrar's webpage: https://www.aucegypt.edu/students/registrar

Overload shall not be allowed for students that are on any sort of academic probation or have not completed the outstanding course work related to an incomplete grade.

A student taking a load of less than 9 credit hours per semester is considered a part-time student. A foreign student taking a course load of 9 credit hours per semester is entitled to university certification for obtaining a student visa. Foreign students carrying less than a full load are not entitled to such certification unless they are fellows or sponsored students. In case of withdrawal, the university reports to the Egyptian authorities to cancel the student residence visa that was received through the university.

The academic load in the winter session is a maximum of 4 credits.

The academic load in the summer session is a maximum of 6 credits, overlapping of courses in the longer summer session with the shorter sessions is not allowed.

Independent study

Independent study is a student-initiated directed study in a field of special interest not available through current course offerings and is detailed in a mutually agreed-upon contract between a faculty member and a student. Independent study can provide students with a unique opportunity to work on carefully selected projects under the direct supervision of a faculty member volunteer with a shared interest.

A graduate student in good academic standing may enroll in independent study not exceeding 3 credit hours within a single graduate degree. In case of dual degrees, whether simultaneous or sequential, up to 3 credit hours of independent study may be taken for each degree. The Independent Study form is available at the Office of the Registrar's webpage: https://www.aucegypt.edu/students/registrar

Grades

At the close of the semester students receive a final grade in each course. The grade is the course instructor's official evaluation of the student's achievement as reflected in course work. This final grade is recorded by the course instructor on Banner, and becomes part of the permanent academic record maintained by the Office of the Registrar. The grade may not be changed or removed from the record.

The following letter grades are used at The American University in Cairo, with the corresponding GPA conversion.

Letter Grade	GPA Conversion Points	Description
A	4.0	Excellent
A-	3.7	
B+	3.3	Very good
B	3.0	Good
B-	2.7	Conditionally Passing
C+	2.3	
C	2.0	
F	0.0	Failing

Grades not included in the Grade Point Average	
I	Incomplete
S	Satisfactory

U	Unsatisfactory
W	Withdrew
AU	Audit
IP	In progress
NR	Deferred Grade
P	Pass

The grade point average is calculated by multiplying the grade point value by the number of credit hours the course represents. The result is listed as quality points. The total quality points are then divided by the total credit hours. The results in courses for no credit are not included in the computation of a grade point average. Grades of "I", "S", "U", "W", "AU", "IP", "NR" and "P" are not assigned grade point values and are not used in the computation of the grade point average. Decimals beyond two places are truncated, not rounded up, in computing the grade point average.

Dual Graduate Degrees

Graduate students may pursue two distinct graduate degrees (two master's degrees, or a diploma and a master's degree, or two graduate diploma degrees) in different majors, either simultaneously or consecutively. In any case, the student must seek admission to and be accepted by each program of concern, and then fill out a "Dual Graduate Degree" form, which is available on at the Office of the Registrar's webpage: https://www.aucegypt.edu/students/registrar

The student may have up to a maximum of 12 credit hours accepted for credit in both degree programs contingent on the approvals of the concerned programs and school deans. A maximum of 9 credit hours may be accepted for the case of dual graduate diploma degrees or the case of a dual master's and graduate diploma degrees.

In the case of sequential degrees, credit hours from the first degree can be accepted for credit in the second degree contingent on the approval of the second degree concerned program and concerned school dean. A period of five years should not be exceeded between the dates of completing these credits in the first degree and the start of the second degree.

In the case of simultaneous degrees, students who have completed all the requirements for one of the degrees and who decide to withdraw from the other degree, will receive the appropriate single degree. Students who have withdrawn from one of the degrees and later decide to

complete this degree, must apply for readmission, be readmitted and then fulfill the requirements for this degree. This must be carried out within the period of the time limit for completing a degree (please refer to section of "Enrollment Status and Time Limit for a Degree Completion")

A student who withdraws from his/her master's degree, then joins another master's degree may have up to 12 credit hours completed for the former degree accepted in the latter. For the case of two graduate diploma degrees or the case of a master's and a graduate diploma degrees, up to 9 credit hours completed for the former degree may be accepted into the newly pursued degree. The above is contingent on the approvals of the concerned program and school dean. A period of five years should not be exceeded between the dates of completing these credits for the first degree and the start of the second degree.

Dual Undergraduate/Graduate Programs

A dual undergraduate/graduate degree program is an approved program in which a student pursues a graduate degree with an undergraduate degree in a related field. The total time for the two degrees could be decreased through the acceptance of up to 12 credit hours of required courses in both degrees. A student enrolled in such a program must complete all requirements for the two degrees and is awarded both degrees at the end of the program. In this regard, this student is admitted to the graduate program before he/she has earned a bachelor's degree. The student is typically able to take both undergraduate and graduate courses for the program during his/her senior year.

A student who decides to withdraw from this dual degree program, will receive his/her appropriate undergraduate degree contingent on having completed all requirements for this undergraduate degree.

Combined Programs

Combined Programs allow students to earn both an undergraduate and a graduate degree in a timely and cost-effective way.

Combined programs allow students to begin an AUC graduate degree while still undergraduate students, and apply graduate credits completed while undergraduate students towards both the undergraduate and the graduate degrees. This typically reduces the total time spent earning both degrees.

All bachelor's degrees, on the one hand, and all master's degrees and graduate diplomas, on the other hand, can thus be joined in a Combined Program.

- Undergraduate students with an overall GPA of at least 3.0 are eligible for pursuing a Combined Program.

- An undergraduate student interested in pursuing a Combined Program between his/her bachelor's program and a master's program or a graduate diploma program at AUC must submit a graduate admission application during his/her junior year. The student must follow the graduate admission application procedures, deadlines, and requirements.
- The submitted graduate admission application is reviewed and evaluated as per the procedures in place for the graduate admission applications.
- If accepted in the graduate program he/she has applied to, the student may then register in and successfully complete up to one-third of the total credit requirements of this graduate program, with a maximum of 12 credits, during his/her senior undergraduate year. The credits, thus successfully completed, may be double counted towards his/her bachelor's and graduate degrees, conditional that a "B" grade or higher is achieved in each of the courses thus completed. The credits for any of these courses with a grade lower than "B" shall not be counted towards the graduate degree.
- A student embarking on a Combined Program must apply to and be accepted in the graduate program of his/her choice before the start of his/her undergraduate senior year. Students already enrolled in a graduate program may not retroactively use this policy. Students in their undergraduate senior year and alumni having completed their bachelor's degrees cannot use this policy.
- An undergraduate student in a Combined Program will be awarded his/her bachelor's degree at the completion of the bachelor's degree requirements. He/she will be awarded the graduate degree after the completion of the graduate degree requirements.
- For a student in a Combined Program, the bachelor's degree study duration and graduate degree study period follow the respective regulations in place and specified in the relevant sections of the catalog.
- In case a student pursuing a Combined Program decides to no longer continue with the Combined Program, all regular bachelor's program and course requirements will apply. Completed credits from the bachelor's degree cannot be used towards the requirements of a graduate degree at a later date.
- Students pursuing a Combined Program will be considered undergraduates for the purposes of financial aid/federal reporting, tuition, class standing, and all other undergraduate academic requirements and regulations until their undergraduate degree has been awarded. Once awarded his/her undergraduate degree, the student will be considered a graduate student for the purposes of financial aid/federal reporting, fellowship support, tuition, and all other graduate academic requirements and regulations.

Incomplete Work

In rare cases, graduate students who are unable to complete a course may be permitted to continue and complete it in the following semester. In the meantime, a grade of "I" is assigned to

the course. Any course instructor submitting an incomplete grade must supplement this submission with an incomplete form to the Office of the Registrar (with copies to the program director, and the student) giving the following information:

a. Reason for the incomplete.
b. The material which is lacking.
c. Action necessary for removal of the incomplete.

Incomplete forms are available at the Office of the Registrar's webpage: https://www.aucegypt.edu/students/registrar

The student must make the necessary arrangements with the course instructor to complete the outstanding course work before the start of the examination period of the following semester, whether the student is enrolled at university or not. In completing the outstanding work, the student need not register again for the incomplete course. Failure to complete the course work within this time period will result in the grade to change to "F", signifying failure for the course. No extension of this time period is allowed.

Students in good academic standing, with incomplete grades, are not allowed to have a load higher than 12 credit hours, including the load of the incomplete course or courses, during the semester in which they need to complete the required coursework for clearing the incomplete grades. Students with incomplete grades and who are on probation will not be allowed to register for any credits during the semester in which they need to complete the coursework for clearing the incomplete grades.

Only the final grade, received upon completion of the outstanding work, is kept on the student's record.

Probation, Dismissal, Course Repeat and Retake

If a student's grade falls below "B" either in graduate work or in prerequisite course requirements, he/she will be placed on probation for one semester, during which time he/she must regain a "B" average. In case the student's overall GPA does not meet the "B" average at the end of the given semester, the student will be dismissed from the university.

A graduate student, who receives an "F" in any course, will be dismissed from the university.

Provisionally admitted students must meet the required admission condition specified by the graduate program. In case the student fails to meet the admission condition, he/she will be dismissed from the program.

When a student does not complete all program requirements within the period specified under "Enrollment Status and Time Limit for a Degree Completion", he/she will be dismissed from the

program for the expiration of the study period. A student may not seek new admission to the same program from which he/she has been dismissed for the expiration of the study period.

A student dismissed from university, may petition for repeating one course. This would be to possibly clear an "F" or to improve his/her GPA to 3.0 or above. If allowed, he/she will need to apply for a readmission. If this repeat is to clear an "F", the student is not allowed to register in any other courses until successfully repeating this course and clearing the "F" grade.

With the recommendation of the program and the approval of the school dean, a graduate student may be allowed to repeat one graduate level course, regardless of the grade achieved, except if the grade is received for breaching academic integrity (please refer to the paragraph below if the grade is because of a breach of academic integrity). With the recommendation of the program and approval of the school dean, substitution is allowed for an elective or an infrequently offered course. Both the original grade and the new grade will appear on the transcript but only the new grade will be used in calculating the GPA.

With the recommendation of the program and the approvals of the school dean and the dean of graduate studies a student may be allowed to retake a graduate level course in which the grade received was because of a breach of academic integrity, when the course is next offered, unless otherwise stipulated by the academic integrity sanctions. Both the original grade and the new grade will appear in the transcript and both will be used in calculating the GPA. This privilege of repeating and/or retaking a graduate course may be exercised only once. Repeat forms are available at the Office of the Registrar's webpage: https://www.aucegypt.edu/students/registrar

Planned Educational Leave of Absence

A degree-seeking student may apply for a Planned Educational Leave of Absence. A Planned Educational Leave of Absence is defined as a planned interruption of a student's regular education during which the student temporarily ceases his or her formal studies at AUC, and after which he/she resumes his/her studies without the need to apply for readmission. A student who is approved for a Planned Educational Leave will be considered as maintaining his or her status as a continuing student.

1. A student requesting a Planned Educational Leave of Absence must be in good academic standing at the time of request. The leave is conditional on the approval of the concerned program, and school dean. The leave application must be submitted to the Office of the Registrar no later than two weeks before the start of the semester by when the leave is requested. The Office of the Registrar will notify the leave applicant of the status of the request before the start of the semester when the leave is requested.

Planned Educational Leave requests should:

- Specify the purpose of the leave, which must be relevant to the student's overall educational objectives.
- Not exceed a maximum of 2 regular semesters.
- Include the student's confirmation of returning to AUC at the conclusion of the leave.

2. The Planned Educational Leave of Absence form is available at the Office of the Registrar's webpage: https://www.aucegypt.edu/students/registrar

3. The student may cancel a leave of absence as late as the first day of classes of the term for which the leave has been requested and approved.

A degree-seeking student shall be considered as having withdrawn from the university if he/she discontinues active enrollment in his/her program without being granted an approved leave of absence, if he/she does not return to active study at the close of the period of approved leave absence. This student must apply for readmission and be subject to the regulations and requirements then in force.

The right to use university facilities is suspended while the approved leave of absence is in effect, with the exception of library privileges subject to the approval of the program of major and the concerned school dean.

A Planned Educational Leave of Absence is counted as part of the time period for the completion of the degree. A student returning from an approved leave remains under the requirements of the catalog that he or she was following upon his/her first registration into the program.

Any academic credits accrued during a Planned Educational Leave of Absence is accepted by AUC only if prior permission is granted by the Office of the Registrar and the department program of major.

Withdrawal from the University

Degree-seeking students who wish to withdraw from the university for one semester or more due to illness or other emergency circumstances are requested to fill in a withdrawal form available at the Office of the Registrar's webpage: https://www.aucegypt.edu/students/registrar

A "W" grade will be recorded for each course from which the student withdrew, unless the withdrawal has taken place during the drop and add period in a semester and no academic credit is given for these courses.

Withdrawn students who wish to return after an absence of one or more semesters must apply for readmission. Readmission is not granted automatically. (See the "Admissions" section of the catalog.)

A withdrawal period is counted as part of the time period for the completion of the degree.

Transcripts

Students who have graduated or who withdrew from the University can apply for official or student transcripts of their academic record. There will be a charge for this service. No transcript of academic record will be issued during the examination, registration, or graduation periods. Academic transcripts will not be issued when unsatisfied financial obligations to the university exist.

Non-degree Academic Regulations

Since non-degree students are usually seeking credit for transfer to other institutions, not all of the academic regulations in this section are applicable to them. They will be primarily concerned about the academic regulations of their home institutions, where applicable, to ensure that they receive maximum possible credit for their work at AUC. Non-degree students who wish to transfer credits to their home universities should check these universities policies before coming to Cairo.

Non-degree students should note the regulations pertaining to registration, change of courses, academic load, grades, probation, incomplete work, class attendance, and transcripts in the graduate section, as appropriate.

Non-degree students who wish to transfer non-degree credits completed at AUC towards a graduate degree should first obtain admission into the intended graduate program. A maximum of three courses (9 credits) can be transferred to the graduate degree sought. A minimum "B" grade per course is required together with the approvals of the graduate program and the respective school dean. Non-degree credits to be transferred must have been completed within five years of admission to the relevant degree program.

Transfer Credits

Upon the recommendation of the student's program to the school dean in consultation with the Office of the Dean of Graduate Studies and the Office of the University Registrar, a graduate student may receive a number of transfer credits equivalent to up to one-third of the credit hours of graduate course work required for his/her graduate degree. Transfer course work is applied as credit (TR) toward the degree and is not included in the calculation of the grade point average.

Graduate transfer credits will not be granted for credits earned by examination or for completing required thesis or dissertation credit hours.

A graduate degree program may establish lower limits on the number of transfer credits than those of the university. Degree programs establishing lower limits may waive their own policy,

but within the university specified limit, by approval of the concerned school dean. Course work credits to be transferred, and taken prior to matriculation to a current AUC degree program, must have been completed within five years of admission to this degree program.

Types of credits allowed to transfer encompass graduate-level course work taken at another institution and meeting the following conditions:

- They have not been previously used to earn another degree or transcripted certificate.
- They are for graded graduate level course work from an accredited institution, for which the student has achieved a grade of "B" or better.
- They are of relevance to the student's program of study.
- They have been completed within a period of five years from the date of the start of the degree to which they are to be transferred.

Any request for the acceptance of transfer credit towards an AUC degree shall be carefully considered by the program concerned before submitting a recommendation to the school dean for approval.

Schools and Departments

The American University in Cairo

The Academy of Liberal Arts

Department of Arabic Language Instruction

Chair of the Department of Arabic Language Instruction: Shahira Yacout

Arabic Language Teachers: D. Abo El-Seoud, L. Al-Sawi , M. Al-Qaffash, S. El-Ezabi, N. Harb, M. K. Hassan, A. Hassanein (Executive Director, Center for Arabic Study Abroad at AUC/ Center for Advanced Arabic Study in Cairo (CASA@AUC/CAASIC), I. Saad (Director, Arabic Language Intensive (ALIN) program), H. Salem (ALNG Director), I. A. Soliman, A. Waked, and S. Yacout (Chair, ALI and Director of Arabic Language Intensive, Summer (ALIS).

The Department of Arabic Language Instruction (ALI) is responsible for Arabic Language Instruction within the university's academic structure. The ALI administers regular non-intensive and accelerated courses in Arabic offered for academic credit (ALNG). This Unit offers courses that cater to undergraduates and graduates who need to fulfill their Arabic requirements. It also serves non-degree and study abroad students. ALNG Unit offers courses at the elementary,

intermediate, and advanced levels in both Modern Standard Arabic and Egyptian Colloquial Arabic. There are two tracks for Modern Standard Arabic classes: normal and accelerated.

Under the umbrella of the Department of Arabic Language Instruction, three intensive programs are administered: the Arabic Language Intensive Program (ALIN), the Arabic Language Intensive Summer Program (ALIS), and the Center for Advanced Arabic Study in Cairo (CAASIC) that hosts the Center for Arabic Study Abroad (CASA@AUC). ALIN students who are qualified to change to undergraduate programs may receive up to 12 undergraduate credits in the fall and in the spring semesters from AUC, except elementary undergraduate students who can receive 10 credit hours. In the Summer Program (ALIS), students can receive up to 6 credit hours. Students may be able to obtain credit toward an academic degree at their home institution for their Intensive Arabic Language (ALIN) coursework. They should determine their institution's policy regarding transfer credit before coming to Cairo.

Students registered in the ALIN and wishing to change their program to AUC undergraduate, graduate and non-degree programs have to satisfy the admission requirements listed in the catalog for these programs.

Arabic Language Undergraduate Credit Courses (ALNG)

Director: Heba Salem

All Arabic language credit classes at AUC are administered and taught by the Department of Arabic language Instruction.

Timely Completion Policy for Arabic Language Requirement

In order to avoid any delay in graduation, all students must sit for an Arabic language placement exam during their freshman year unless they have submitted a Thanawiyya Amma certificate or its equivalent before the date of the last placement exam for any given academic year. Based on the placement exam score, students will either be exempted from required Arabic Language courses or be required to take one or two sequenced courses. Students exempted from Arabic may still opt to register in elective Arabic courses.

Students must take all required Arabic language courses before completing 90 credit hours. For students required to take two courses, the first of the required courses must be taken before completing 60 credit hours. Students failing to register for, or registering and dropping, their required Arabic courses in time to meet the Arabic Timely Completion Policy will be issued registration holds preventing them from registering for other courses before registering for the

required Arabic courses. All students are required to take up to 6 credits from the following ALNG courses:

ALNG 1010 - Eye on Press (3 cr.)

ALNG 1020 - Arabic in Context (3 cr. per semester)

ALNG 2010 - Current Issues and Egyptian Society (3 cr. per semester)

These courses replace the previously required ALNG courses:

ALNG 1101-1102-1103 - Elementary Modern Standard Arabic (3 cr. each per semester)

ALNG 2101-2102-2103 - Intermediate Arabic (3 cr. each per semester)

Arabic Language Intensive Program (ALIN)

Director: I. Saad

The Department of Arabic language Instruction offers intensive Arabic language courses for students, businessmen, diplomats, scholars, and others needing to gain a broad command of contemporary Arabic as quickly and as effectively as possible. For over sixty years, first through its School of Oriental Studies and then through its Center for Arabic Studies, AUC has taught Arabic to foreigners. Since the inception of what is now the Department of Arabic language Instruction, in the 1970s, this program has attracted students from the United States, Africa, Asia and Europe, offering intensive courses in both modern standard and Egyptian colloquial Arabic. A summer program is also offered.

Arabic Language Intensive Program (ALIN) is part of the Department of Arabic language Instruction program. Students must register for a minimum of twelve credit hours per semester, while the normal course load is twenty contact hours per week. Diplomats and professionals may enroll on part-time basis and register in for less credit hours. All courses are taken for grades, and credit is granted as indicated at the beginning of each course listing. Summer students can receive up to 6 credit hours. ALI offers all proficiency levels from complete beginners to advanced. Each level is studied in one separate semester. The Fall semester runs from the first week of September through mid-December. The Spring semester runs from the first week of February through mid-May, and the summer session runs from the first week of June through end of July.

Elementary Level

The main emphasis is on modern standard Arabic, but Egyptian colloquial Arabic is simultaneously offered (about twenty five percent of class time is devoted to colloquial). Attention is given to the

Arabic of print and broadcast media too. Arabic is used as the main medium of instruction in the second half of the program. The course comprises up to twenty hours per week of classroom instruction, and up to twenty hours of home assignments. A student who successfully completes the first year of intensive study with the Department of Arabic Language Instruction can expect to possess a working competence in reading and writing modern standard Arabic and understanding and speaking Egyptian colloquial or modern standard Arabic.

Intermediate Level

Courses at this level are designed for those who have completed a year of intensive study at the elementary level of the Department of Arabic Language Instruction or who have studied two or more years elsewhere and can demonstrate a similar level of competence. Arabic is the chief medium of instruction. Students continue work in modern standard Arabic and Egyptian colloquial Arabic. Students who complete this second year of study should be able to read and write modern standard Arabic with some fluency, to pursue study in topics that specially interest them in Arabic, and to converse freely in Arabic.

Advanced Level

Exceptional students may wish to take a third year. These courses are arranged according to demand, but they typically include advanced work in reading and writing, listening, and speaking, as well as media. At the end of such a course a student should be able to compete with Arab students at the university level.

Certificate and Program Requirements

ALIN fulltime students must take at least twenty contact hours per week for which they are awarded twelve credit hours per semester. At the end of students' enrollment in the Department of Arabic Language Instruction, certificates of achievement will be awarded from the department (specifying the level that they have successfully completed, i.e., elementary, intermediate, or advanced) (See the Intensive Arabic Language Course listing and the number of program credits awarded for each course). Students who are enrolled on part-time basis, receive certificates of course completion.

Arabic Language Intensive Courses (ALIN) (*To see all ALIN courses, please go to the "Courses" link in the homepage.)*

ALIN courses are listed sequentially by area. In this four-digit system, the first digit represents the level of the course: 1 for elementary, 2 for intermediate, and 3 for advanced. Prerequisites are not listed for every course. However, entry into all intermediate and advanced courses presupposes that the student is of intermediate or advanced standing. The instructor's

permission may also be required. Standing will be determined by written and/or oral placement tests for incoming students and sometimes for continuing students.

Arabic Language Intensive Summer Program (ALIS)

Director: Shahira Yacout

The Department of Arabic Language Instruction offers an intensive summer program from the second week of June until the last week of July. Students must take twenty hours of class per week to be considered full-time. The summer curriculum includes Modern Standard Arabic (MSA) and Egyptian Colloquial Arabic (ECA) at all levels, or Modern Standard Arabic only, both options as a full load. In addition, a number of electives are also offered depending on the students' level. Students in summer receive from six to eight credit hours depending on their level. A certificate of achievement from the Department of Arabic language Instruction is then offered upon successful completion of the program.

Co-Curricular Activities/Student Cultural Activity Program

An integral part of the intensive language program, both full year & summer, is an extensive series of tours of Cairo and trips to the easily visited sites of interest all over Egypt. These tours and trips are supplemented by a lecture series. While the department subsidizes a large portion of the expenses, including transportation (except where air travel is involved) and entrance fees, students are required to pay for their food and lodging. The Department of Arabic Language Instruction cultural program also includes a cultural component featuring activities such as calligraphy, music, folkloric dance and an overview of Egyptian films. In addition, the program includes an end of semester summer party which is organized with the active participation of the students.

Arabic Language Intensive Summer Program Courses (ALIS): To see all ALIS courses, please go to the "Courses" link in the homepage.

Center for Advanced Arabic Study in Cairo/Center for Arabic Study Abroad at AUC (CAASIC/CASA@AUC)

Executive Director: Azza Hassanein

CAASIC offers full-year and short term advanced-level training in Arabic language and culture to graduate and undergraduate students at The American University in Cairo. CAASIC welcomes applicants from all nationalities with a minimum of three years of formal instruction in Arabic. Students receive 8 credit hours in summer, 12 credit hours in fall, and 12 credit hours in spring. The normal course load is twenty contact hours per week.

Program Requirements

CAASIC students apply and undergo a selection process that requires sitting and passing a language entry exam, submitting transcripts, three letters of recommendation as well as a statement of purpose.

Program Description

The program consists of three semesters - summer, fall and spring - as follows:

A. Summer Program

The summer program offers 20 contact hours per week and fellows are expected to spend between four to five hours daily doing homework and preparing for class activities for the following day. The summer academic program includes two courses:

AIAS 4101 - An Introduction to Cairo, MSA (4 cr.)

This is a content-based course that offers eight to ten contact hours per week and aims to engage students through a number of historical, political, social and cultural issues of significance to the society in which they are living. The course places emphasis on the development of all language skills with attention to expanding vocabulary and enhancing grammatical accuracy.

AIAS 4301 - An Introduction to Cairo, ECA (4 cr.)

This course offers eight to ten contact hours per week and aims to develop the fellows' proficiency in the Egyptian dialect quickly so that they can function in their new environment. In addition to focusing on the colloquial of daily life, the course places emphasis on aammiyyat al-muthaqqafiin (educated colloquial), in which the colloquial is mixed with formal Arabic. Multiple sections of this course are offered to accommodate varying levels of proficiency.

B. Fall Academic Program

Description and Courses

The fall semester requires learners to study three core courses at 20 contact hours per week. The following courses are offered in the fall:

1. AIAS 5121 - Reading, Writing and Vocabulary Building (6 cr.)
2. AIAS 5151 - Listening And Speaking (3 cr.)
3. AIAS 5301 - Egyptian Colloquial Arabic (3 cr.)

C. Spring Academic Program (12 credits)

The spring semester represents the culmination of the CAASIC program. The spring semester allows learners to utilize the advanced language skills they have developed during the summer and fall by working with Arabic materials in their own fields of specialization. Each fellow is required to study four courses, each course is for 3 credit hours, a total of 12 credit hours. Any spring course offered must have a minimum enrollment of six students. All CAASIC/CASA@AUC students will be required to abide by an Arabic-only speaking policy on campus and off campus as much as possible.

Exit Exam

All CAASIC/CASA@AUC students will be required to participate in an end of full-year proficiency exit exam. This exam is no substitute for the regular quizzes or monthly and end of semester achievement exams.

Department of English Language Instruction

Chair: M. El Saady

Senior Instructors II: S. Abdel Hady Makhlouf, E. Arrigoni, I. Baza, M. Baza, A. Demian, S. El Esnawy, M. Fairley, S. Farag, R. Jabr, L. Kamal, N. Kassabgy, N. Khafagi, Y. Salah Eldin, E. Yoder

Senior Instructors: N. Aboul Fetouh, K. Helmy, A. Lewko, A. Mishriki, M. Osman, H. Shawarbi, A. Shebeenie

Instructor: M. Salah Eldin

- **Mission Statement**
- **ELI Program Accreditation**
- **Undergraduates**
    - Intensive Academic English
    - Academic English for the Liberal Arts
- **The Academic English for Graduates**
    - Intensive English for Graduates Courses
    - Academic English for Graduates Modules

Mission Statement

The Department of English Language Instruction (ELI) offers intensive, semi-intensive, and modular non-credit courses to prepare undergraduate and graduate students in academic English, critical thinking, and academic readiness skills that they need at university. This is accomplished by qualified faculty using content-based and learner-centered approaches

designed to empower learners and to align with courses at AUC. ELI is fully accredited by the Commission for English Language Program Accreditation (CEA).

ELI Program Accreditation - ELI/CEA

The Department of English Language Instruction of the American University in Cairo, Academy of Liberal Arts is accredited by The Commission on English Language Program Accreditation and agrees to uphold the CEA Standards for English Language Programs and Institutions. CEA is recognized by the U.S. Secretary of Education as a nationally recognized accrediting agency for English language programs and institutions in the U.S.

Undergraduates

Academic Bridge Program

An Academic Bridge Program ensures academic preparedness and provides foundations for success for incoming students needing developmental course-work prior to their freshman semester. The undergraduate courses offered by the Department of English Language Instruction (ELI) are the essential core of AUC's efforts in this regard. As such, their goal is to provide the proficiency in Academic English, along with enhanced reading, critical thinking and study skills, needed for successful study at the American University in Cairo as an English-Language, American style institution of higher learning committed to the principles of a liberal arts education.

As detailed below, the ELI offers two levels of study for undergraduates: Intensive Academic English and Academic English for the Liberal Arts. Both are designed to help transition students into the freshman program at AUC, and to contribute to ensuring future academic success for students, whatever their fields of study.

Intensive Academic English (ELIN 0101/ELIN 0102)

The Intensive Academic English Program (IEP) is specially designed to help incoming AUC students improve their English and academic skills necessary to pursue their studies effectively at AUC. IEP courses are non-credit courses. Students enrolled in IEP may not enroll in any other academic courses for credit. IEP offers ELIN 0101 (Intermediate English), and ELIN 0102 (Advanced English). Students are placed in one of the two levels according to their scores on international English measurement tests recognized by AUC Undergraduate Admissions.

IEP students take five hours of classes a day. Because of the intensive nature of the classes, regular attendance and active involvement are major factors in a student's success. It is very difficult and often impossible to make up what has been missed.

IEP students are allowed to take up to two full semesters and a summer term to reach either the level of ENGL 0210 - Academic English for the Liberal Arts (0 cr.), ENGL 0211 - Academic English for the Liberal Arts (0 cr.) or RHET 1010 - Freshman Writing (3 cr.). At the end of a period including two full semesters and a summer term, a student who has still not attained the required level will be dismissed. A full semester is 20 contact hours per week, five hours a day four days a week. The summer term is a condensed six-week term that is equivalent to approximately half a full semester with five hours a day, five days a week. Instruction is more individualized to focus on individual students' needs in order to pass the course.

Readmission

Students who have been dismissed from the IEP may be readmitted to AUC only if they submit new results from international English measurement tests recognized by AUC Undergraduate Admissions placing them in levels higher than the IEP. Other applicants for readmission may not submit a new international English measurement test score unless more than six months have elapsed since their last international English measurement examination or the IEP exit battery.

Academic English for the Liberal Arts (ENGL 0210/ENGL 0211)

Academic English for the Liberal Arts (ENGL 0210) is a non-credit, concurrent, conference-centered course intended to transition students into a full course of study in the Freshman Program at AUC. Sessions are devoted to the comprehension and summary of university-level texts, the introduction to basic research tools, the writing of essays on science and humanities topics, and remedial grammar, within the context of individual teacher-student conferences. Newly developed materials and approaches ensure that students see the relevance and impact of their efforts in terms of their long-term academic success.

Since students receive the equivalent of nine credit hours of instruction in Academic English for the Liberal Arts, students taking the course (ENGL 0210) may enroll in no more than two academic courses with a maximum of 7 credit hours of academic course credits. Any student who withdraws from ENGL 0210 must also withdraw from the two other academic courses. Regular attendance in ENGL 0210 is important; a student who for any reason misses more than the number of hours specified in the ENGL 0210 Attendance Policy will be dropped from the course. A student who is dropped will be allowed to retake the course the following semester. For new students, placement in ENGL 0210 is determined by their scores on International English measurement tests recognized by AUC Undergraduate Admissions. For students enrolled in Intensive Academic English (IEP) courses, placement in Academic English for the Liberal Arts (ENGL 0210) is determined by their score on the IEP exit test. All students who have been admitted into ENGL 0210 must satisfactorily complete the course work within a time period not to exceed two full

semesters and a summer session. Students taking ENGL 0210 in summer may not enroll in any other academic course.

ENGL 0211 is a non-credit, concurrent, conference-centered course in which classes meet two days a week for a total of 6 (in-class) instructional hours. Sessions are devoted to the comprehension and summary of university-level texts, student-led discussions, reflective writing, the writing of essays on science and humanities topics, and to the basics of research-based writing within the context of individual conferences. Students taking ENGL 0211 may enroll in no more than three academic courses with a maximum of 10 academic course credits. Any student who withdraws from ENGL 0211 must also withdraw from the three other academic courses.

For new students, placement in ENGL 0211 is determined by their scores on International English measurement tests recognized by AUC Undergraduate Admissions. Students enrolled in the Intensive English Program (ELIN 0101 and ELIN 0102) may place in the subsequent semester in ENGL 0211 as determined by their scores on the IEP exit test. All students who have been admitted into ENGL 0211 must satisfactorily complete the course work within a time period not to exceed two full semesters and a summer session. Students taking ENGL 0211 in summer may not enroll in any other academic course.

The Academic English for Graduates:

Graduate students who are otherwise qualified to enter the university but whose English does not meet the necessary level of proficiency, based on the applicant's performance on international English measurement tests recognized by AUC graduate admissions, will be admitted to ELIN 0301 or ELIN 0302 , or placed in the appropriate modules of ENGL 0310, ENGL 0311 and ENGL 0312.

Graduate students in the intensive ELIN 0301 and ELIN 0302 courses are allowed a maximum of two semesters to reach the level of Academic English for Graduates (see Academic English for Graduates Modules in this section), or beyond. Graduate students enrolled in the modules are allowed a maximum of two semesters per module to pass out of the program.

Intensive English for Graduates Courses

The intensive English for Graduates course is offered at ELIN 0301 (intermediate) and ELIN 0302 (advanced) levels. Students are placed in one of the two levels according to their scores on international English measurement tests recognized by AUC graduate admissions. Students in these courses are not allowed to concurrently enroll in other AUC courses.

Content of Courses

Students are placed in sections normally composed of up to twelve students. Students are given a grammar review, extensive reading and writing practice, advanced vocabulary review, and practice in speaking and listening comprehension. Grading in this course is on a Pass/Fail system.

Course Exit Pathways

Passing ELIN 0301 or ELIN 0302 may still require the student to take additional English courses in order to continue with graduate study. ELIN 0301 students, depending on their exit score, may need to take ELIN 0302 or up to three Academic English for Graduates Modules, which include effective writing (ENGL 0310), academic reading (ENGL 0311), and listening and speaking (ENGL 0312). ELIN 0302 students, depending on their exit score, may need to take up to three modules. Students finishing ELIN 0301 or ELIN 0302 with sufficient scores as published in the course syllabus will not be required to complete additional English courses.

Attendance

Attendance and participation are considered so important to this intensive language program that a student who for any reason misses the equivalent of more than 21 class hours in any one semester will be asked to withdraw. Applicants for readmission may submit a score from an international English measurement tests recognized by AUC graduate admissions. If their score is the intensive level, they will be allowed to return to ELIN 0301 or ELIN 0302. Students who are asked to withdraw but fail to do so will be dismissed.

Dismissal and Readmission

Graduate students dismissed from ELIN 0301 or ELIN 0302 must petition for readmission and must meet all the admission requirements prevailing at the time of readmission. Readmission is not granted automatically. Students dismissed from ELIN 0301 or ELIN 0302 who are readmitted to the university must score high enough on international English measurement tests recognized by AUC graduate admissions for direct admission to Academic English for Graduates or higher, as they will not be allowed to return to ELIN 0301 or ELIN 0302.

Academic English for Graduates Modules

Academic English for graduate students consists of three non-credit modules covering effective writing (ENGL 0310), academic reading (ENGL 0311), listening and speaking (ENGL 0312). Students who are taking all their required modules may take other courses at the same time, thus enabling them to apply what they are learning in these modules to what they will be expected to do in other graduate courses. Grading in these modules is on a Pass/Fail system.

ENGL 0310 meets for two hours two times a week, while the other two modules (ENGL 0311 and ENGL 0312) meet for two hours one time per week. Students who have part-time or full-time jobs are strongly advised not to attempt other undergraduate or graduate courses until they have completed their academic English requirements. Students enrolled in any of the modules are expected to spend at least three hours per week outside of class in preparation for each weekly class meeting of each module in which they are enrolled (e.g., a student enrolled in three modules should expect to spend at least 9 hours per week outside class plus eight hours per week in class).

Generally students taking the modules are limited to taking courses according to the formula below:

Required Academic English modules	**Students may take**
3 modules	One undergraduate course
2 modules	One undergraduate or one graduate course
1 module	Two undergraduate or graduate courses

Any student who withdraws from a module must first withdraw from any non-ENGL courses. Students who fail any given module(s) may repeat the module(s) once. Students who are repeating a given module will not be allowed to take concurrent courses without the written approval of the ELI Department Chair. Students who fail the same module twice will be disqualified but may apply for readmission. Applicants for readmission must score high enough on international English measurement tests recognized by AUC graduate admissions to be exempt from English courses, as they will not be allowed to return to ENGL 0310, ENGL 0311, or ENGL 0312.

Department of Rhetoric and Composition

Senior Instructors II: M. Carter (Associate Chair), A. El Afifi, A. Elshimi, M. Henry, G. McCullough, Y. Motawy

Senior Instructors: A. Abdullah, H. Attiah, O. Abdelhamid, M. Brand, F. Boutros, S. Darwish, E. ElShimi, N. Fakhr, D. Gomaa, Al. Young, Y. ElMasry, G. Elshimi (ALA Dean), M. Gibson, A. Hamad, L. Richardson, H. Shahin, K. Saville (Chair), Y. Soheim, W. Wali, S. Zaki

Instructors: A. Amin, S. Barber, P. Barsoum, S. Elcheikhali, H. Fatelbab, L. ElSerty, S. ElSherif, H. El Minyawi, J. Harvey, E. Lewko

The Department of Rhetoric and Composition provides a solid foundation for critical thinking, reading, writing, and promoting excellence in research and rhetoric. As part of this effort, we work to maintain a community where knowledge, research methods, rhetorical skills, and

universal human values are cultivated to deepen scholarly practices, personal growth and community engagement.

AUC's Freshman Program requires students to take 6 credit hours of writing. The Department of Rhetoric and Composition offers the following sequence of courses to fulfill this requirement:

- RHET 1010 - Freshman Writing (3 cr.)
- RHET 1020 - Research Writing (3 cr.)

Placement in Department of Rhetoric and Composition Courses:

- Students sitting for international English measurement tests recognized by AUC undergraduate admissions and achieving scores that place them at RHET 1010 entry level will be placed directly in RHET 1010 in their first semester at AUC.
- Students in the English Language Instruction program who pass their exit exam will be placed in RHET 1010.
- Students with university transfer credits, or certain high school credits (e.g. HL or AP English) may transfer credit or be exempted from RHET courses, depending on their circumstances (as indicated in their letters of acceptance from AUC.)
- The University reserves the right to make changes in student placement during the first two weeks of classes, in the rare event this is deemed necessary by program instructors.

Department of Rhetoric and Composition Course Policies:

- All students need to complete 6 credits of RHET courses - RHET 1010 (along with its 3-credit partner course, CORE 1010), and RHET 1020, as described below:

1. Students who are placed by an external placement exam or the ELI exit exam in RHET 1010 should complete RHET 1010 and RHET 1020 consecutively in their first two semesters as freshmen.
2. Students who have been exempted from RHET 1010 must complete RHET 1020 in their first semester at AUC, then take an upper division course in the Department of Rhetoric and Composition to complete their requirements.
3. Students who have transferred RHET 1010 credit must complete RHET 1020 in their first semester at AUC. This will complete their RHET requirements.

- Students enrolled in RHET 1010 must be concurrently registered in a CORE 1010 course with the same theme. This creates a student learning community across the two courses, emphasizing the scholarly practices necessary for undergraduate success.
- Both RHET 1010 and CORE 1010 must be completed in the freshman year.
- In the event that the department has accepted transfer credits for CORE 1010, the student will be placed in a standalone (non-tandem) section of RHET 1010 to complete freshman requirements. In the event that the department has accepted transfer credits for RHET

1010, the student will be placed in a standalone (non-tandem) section of CORE 1010 to complete freshman requirements
- RHET 1020 must be taken in the semester immediately following the passing of RHET 1010.
- Dropping one of the two courses RHET 1010 or CORE 1010 will result in the other course being automatically dropped.
- Students repeating the tandem course CORE 1010/RHET 1010 must enroll in a different theme, unless approved by the department to repeat in the same theme.
- The passing of one of the tandem courses is not contingent upon the passing of the other. Students may pass or fail one or both.
- Students may take each of RHET 1010 and RHET 1020 up to three times in three consecutive semesters in order to fulfill department or graduation requirements.
- Only students repeating RHET 1010 or CORE 1010 will be able to enroll during summer semesters. Enrollment will not be open to students wishing to take the course for the first time in summer.
- As of Fall 2014, students retaking RHET 101 (RHET 1000) will instead take the RHET 1010 along with the matching CORE 1010 course. RHET 1010 will also meet the requirement for RHET 102 (RHET 1100).
- As of fall 2014, students taking or retaking RHET 102 (RHET 1100) will take RHET 1010 with the choice of taking the CORE 1010 partner course.
- As of fall 2014, students taking or retaking RHET 201 (RHET 2010) will instead enroll in RHET 1020 - an equivalent course.
- RHET 1010, CORE 1010 and RHET 1020 are part of the freshman program. They are governed by the Timely Completion of Required Freshman Classes policies, found here.

Minors

Writing Minor

The Writing Minor advances the rhetoric and writing discipline's knowledge, competencies, and values. Students will read theory, practice the conventions of writing in different genres, consider ethical issues raised in writing and publication, and develop critical mastery in writing for differing purposes and contexts - creative, reflective, digital, professional, and academic. Students cultivate creative thought, facility in expression, social power through writing, and professional communication competencies. The Writing Minor complements all majors and supports students' ability to communicate effectively and be competitive in their chosen fields.

Requirements (15 credits)

Students who opt to minor in Writing must have completed RHET 1020 with a minimum grade of B-.

Writing Minor courses listed in the Core Curriculum may be double-counted for Core Curriculum credit at the secondary and capstone levels, consistent with the rules and policies of the Core Curriculum.

Writing Minor Course list:

Secondary level (3-12 credits):

- ECLT 3070 - Creative Writing (3 cr.)
- RHET 2099 - Selected Topics (3 cr.)
- RHET 3099 - Selected Topics (3 cr.)
- RHET 3110 - The Writer's Workshop (3 cr.)
- RHET 3120 - Life Narratives (3 cr.)
- RHET 3130 - Travel Writing (3 cr.)
- RHET 3150 - Poetry Writing (3 cr.)
- RHET 3160 - Fiction writing (3 cr.)
- RHET 3210 - Business Communication (3 cr.)
- RHET 3220 - Public Speaking (3 cr.)
- RHET 3230 - Technical Communication (3 cr.)
- RHET 3250 - Digital Rhetoric (3 cr.)
- RHET 3260 - Mastering Writing in an AI World (3 cr.)
- RHET 3310 - Discourse and Power (3 cr.)
- RHET 3330 - Words that Change the World (3 cr.)
- RHET 3340 - Making Your Case: The Art of Persuasion (3 cr.)
- RHET 3350 - Writing and Cognition: The Mind and the Machine (3 cr.)
- THTR 3501 - Scriptwriting (3 cr.)

Capstone level (3-12 credits):

- RHET 3140 - Writing Children's Literature (3 cr.)
- RHET 4060 - Independent Study (1-3 cr.)
- RHET 4099 - Selected Topics for Rhetoric and Composition Capstones (3 cr.)
- RHET 4160 - Imagining the Book (3 cr.)
- RHET 4260 - Writing for Project Funding (3 cr.)
- RHET 4270 - Research and Writing Internship (3 cr.)
- RHET 4360 - Writing for Publication (3 cr.)

(Selected Topics courses may be repeated for credit as long as the content differs each time it is taken)

Office of the Associate Dean for Undergraduate Studies - ALA

- FLNG 1991 - Selected Topics in Beginner Level Foreign Language (3 cr.)
- FLNG 2991 - Selected Topics in Intermediate Level Foreign Language (3 cr.)
- FLNG 3991 - Selected Topics in Advanced Level Foreign Language (3 cr.)

Core Curriculum

The Core Curriculum

Onsi Sawiris School of Business

Youssef Nabih Department of Accounting

Emeriti Professor: S. Farag
Professors: A. Abdel-Meguid, M. Basouny (Department Chair), K. Dahawy, M. Hegazy, K. Samaha, N. Shehata
Associate Professors: A. Abdel-zaher, A. Elbayoumi, M. El Helaly
Assistant Professor: D. El Bassionuy

Bachelor of Accounting

Accounting (B.A.C.)

Accounting is both a primary communication channel between business entities and its stakeholders and a comprehensive information system which supports effective decision making. The role of the accounting profession is becoming more pronounced in today's business environment which is characterized by scarce resources, fierce rivalry, complex transactions and increased public scrutiny. Furthermore, auditors are considered the key deterrent to managerial malfeasance, a phenomenon which adversely affects markets and investors' confidence. Students pursuing the Bachelor of Accounting will be exposed to a comprehensive set of technical knowledge of financial accounting, cost/managerial accounting, taxation, and auditing. Ethical considerations, corporate governance and financial transparency issues are covered throughout the course offerings.

Accounting graduates are qualified to work within different professional capacities at corporate multinationals, Big 4 auditing firms, banks, consulting firms, and other types of organizations. In addition, recent graduates of the program have attained, or are currently pursuing, professional

certifications such as the Certified Public Accountant (CPA), the Chartered Financial Analyst (CFA), the Certified Management Accountant (CMA), and the Association of Chartered Certified Accountants (ACCA) qualification, in addition to other postgraduate studies.

The objective of the Bachelor of Accounting degree is to provide conceptual and practical knowledge to graduates who will prepare, report and analyse economic and financial information used for making sound managerial decisions.

Program Declaration Policy

Students now have two pathways to declare their major in Accounting:

Option 1: Declaration Upon Admission (From the Gate)

Qualified students, who have fulfilled AUC admission requirements, may apply to declare their major at the time of admission. Selection is competitive, and will be decided after evaluating:

- High school grades
- Aptitude Test score (ASSESS or ITB Business)
- Interview

Option 2: Declaration After Enrollment

Students who do not declare upon admission may follow the standard declaration process after entering AUC. Students must complete 27 credit hours of study, including the courses listed in (1) below. Students who have successfully completed these courses, with the minimum required grades (where applicable), and who meet the minimum major weighted grade point average (GPA) as determined by the department, will be accepted in the major.

1. Required Courses to be completed to declare Accounting as a major

ACCT 2001 - Financial Accounting (3 cr.) with a minimum grade of B
ACCT 2002 - Managerial Accounting (3 cr.) with a minimum grade of B
ECON 2011 - Introduction to Microeconomics (3 cr.) or ECON 2021 - Introduction to Macroeconomics (3 cr.)
MACT 2222 - Statistics for Business (3 cr.)

2. Calculation of the Major Weighted Grade Point Average

The major weighted Grade Point Average = Overall GPA at time of declaration x 60% + (Average GPA in ACCT 2001 and ACCT 2002) x 40%.

3. The minimum major Weighted Grade Point Average

Admission to the Accounting major is competitive. Eligible students will be ranked and selected based on their major weighted grade point average. Additional combination of discipline relevant factors and evidence of interest in the field of Accounting through personal statements and/or interviews will be used to determine acceptance into the major.

Students must complete a minimum of 127 credit hours for the Bachelor of Accounting degree.

Students who seek the Bachelor of Accounting degree are not permitted to minor in Business Administration.

Core Curriculum (37 credits)

The remaining 3 credit hours required to satisfy the Core are fulfilled by completing the course ACCT 4005 - Contemporary Issues in Financial Reporting (3 cr.).

Collateral Requirements (12 credits)

All students seeking a Bachelor of Accounting degree are required to complete the following collateral requirements (12 credits):

- ECON 2011 - Introduction to Microeconomics (3 cr.)
- ECON 2021 - Introduction to Macroeconomics (3 cr.)
- ECON 3041 - Monetary Economics (3 cr.)
- MACT 2222 - Statistics for Business (3 cr.)

Management Requirements (9 credits)

- BADM 2001 - Introduction to Business (3 cr.)
- BADM 3003 - Decision Making for Sustainable Organizations (3 cr.)
- BADM 4999 - Internship and Assessment (0 cr.)
- MGMT 3301 - Business Law (Commercial & Fiscal) (3 cr.)

Marketing Requirements (3 cr.)

- MKTG 2101 - Principles of Marketing (3 cr.)

Finance Requirements (12 credits)

- FINC 2101 - Business Finance (3 cr.)

- FINC 3201 - Investment Analysis (3 cr.)
- FINC 3501 - International Finance (3 cr.)
- FINC 4301 - Corporate Finance (3 cr.)

Management of Information Systems Requirements (3 credits)

- MOIS 2101 - Introduction to Information Systems/Technology (3 cr.)

Accounting Requirements (42 credits)

- ACCT 2001 - Financial Accounting (3 cr.)
- ACCT 2002 - Managerial Accounting (3 cr.)
- ACCT 3001 - Intermediate Accounting I (3 cr.)
- ACCT 3002 - Intermediate Accounting II (3 cr.)
- ACCT 3003 - Advanced Accounting (3 cr.)
- ACCT 3004 - Cost Accounting (3 cr.)
- ACCT 3005 - Auditing (3 cr.)
- ACCT 3006 - Principles of Taxation (3 cr.)
- ACCT 3007 - Accounting Analytics (3 cr.)
- ACCT 4000 - Automated Financial Accounting (3 cr.)
- ACCT 4001 - Contemporary Issues in Auditing and Forensic Accounting (3 cr.)
- ACCT 4002 - Special Topics in Tax Accounting (3 cr.)
- ACCT 4004 - Financial Statement Analysis and Sustainability Reporting (3 cr.)
- ACCT 4005 - Contemporary Issues in Financial Reporting (3 cr.)

Electives (9 credits)

CO-OP (3 cr.)

Students majoring in Accounting (B.A.C.) who meet other relevant criteria are eligible to apply for the optional BUSC 4000 - Experiential Learning : CO-OP (3 cr.) that counts towards their general electives. Selection is highly competitive, subject to limited capacity, and based on criteria set by the School of Business. Students enrolled in BUSC 4000 are only permitted to concurrently enroll in the seminar course BUSC 4001 - Business 360 (3 cr.) that counts towards their electives. Enrollment in this extra course is optional and subject to the approval of the CO-OP faculty mentor.

Minors

Accounting Minor

Students who seek to minor in accounting must already be declared in another major and completed ACCT 2001 - Financial Accounting (3 cr.) with a minimum grade of B and ACCT 2002 - Managerial Accounting (3 cr.) with a minimum grade of B. Students who have successfully completed these courses, with the minimum required grades and who meet the minimum minor weighted grade point average as determined by the department, will be accepted in the minor. Accepted students should plan their minor with their academic advisor with the approval of the department.

Calculation of the Minor weighted grade point Average

The minor weighted grade point Average = Overall GPA at time of minor declaration x 60% + (Average GPA in ACCT 2001 and ACCT 2002) x 40%.

Admission to the Accounting minor is competitive. Eligible students will be ranked and selected based on their minor weighted grade point average.

Students who seek any of the following degrees are not permitted to minor in accounting:

- Bachelor of Business Administration - Management of Information and Communication Technology (MICT)
- Bachelor of Business and Entrepreneurship (B.B.E.)
- Bachelor of Business in Finance (B.B.F.)
- Bachelor of Business in Marketing (B.B.M.)

The accounting minor consists of at least five courses (15 credits) two of which are required, and three are electives, as follows:

Required courses:

- ACCT 2001 - Financial Accounting (3 cr.)
- ACCT 2002 - Managerial Accounting (3 cr.)

Additional elective courses (at least THREE) from the following with approval of the advisor:

- ACCT 3001 - Intermediate Accounting I (3 cr.)
- ACCT 3002 - Intermediate Accounting II (3 cr.)
- ACCT 3003 - Advanced Accounting (3 cr.)
- ACCT 3004 - Cost Accounting (3 cr.)
- ACCT 3005 - Auditing (3 cr.)
- ACCT 3006 - Principles of Taxation (3 cr.)

Mohamed Shafik Gabr Department of Economics

Professors: A. El-Shennawy, S.Ille, N. Rizk, M. Said

Associate Professors: S. Atallah (Associate Dean of Graduate Studies and Research, School of Business), M. Al-Ississ, M. Ayad, M. Bouaddi, M. El-Komi, H. El-Ramly, A. Kamaly

Assistant Professors: D. Abdel Fattah (Chair), Y. Eissa, N. Omar, I. Tharwat

A society's scarce resources are allocated among various production activities and among various consumers. An economy is made up of business producing goods and services for sale, individuals working, receiving income, and spending that income on the goods and services, and government taxing businesses and individuals and providing services not available from the private sector. The methods in which this complex system is organized and coordinated through a series of interrelated markets is the subject of economics. The basic training in these methods is provided in concentration requirements covering economic theory, statistics, econometrics, finance, development, trade, and economic history.

The Mohamed Shafik Gabr Department of Economics offers three graduate programs in economics: an established master's program and two new programs: an M.A. Economics in International Development and a Graduate Economics Diploma in International Development. Together, these three programs cater to evolving job market needs and keep up with recent developments in the field.

Bachelor of Arts

Economics (B.A.)

Bachelor of Arts

The curriculum for the B.A. degree in Economics is designed to prepare students to be i) economists with a deep knowledge of a wide range of economics subjects equipped with the required analytical tools to apply this knowledge or ii) experts in the field of economic development and policy making or iii) economists with a strong foundation in quantitative and financial economics. For the first group, the curriculum offers a wide range of courses pertaining to the different aspects of the economy in theory and practice. For the second group, the curriculum offers courses that specifically address the challenges of economic development and policy making. For the third group, the program offers rigorous and advanced courses in econometric theory and application and in financial economics.

Program Declaration Policy

Students now have two pathways to declare a major in Economics :

Option 1: Declaration Upon Admission (At the Gate)

Qualified students, who have fulfilled AUC admission requirements may apply to declare their major at the time of admission. Selection is competitive, and will be decided after evaluating:

- High school grades
- Aptitude Test score (ASSESS or ITB Business)
- Interview

Option 2: Declaration After Enrollment

Students who do not declare upon admission may follow the standard declaration process after entering AUC. According to this process, eligible students must:

- Complete a minimum of 27 credit hours including ECON 2011, ECON 2021 and ECON 2061.
- Earn an average grade of B or higher in ECON 2011 and ECON 2021 with a minimum grade of B minus in each course.
- Earn a minimum grade of B in ECON 2061 (Equivalently, earn a minimum grade of B MACT 1121).

* In the case of a second attempt of courses required for major declaration, the higher of the two grades earned will be considered. The grade of a third or more attempts will not be considered for the purpose of declaring a major in Economics.

The score for declaration will be calculated as follows:

(Economics GPA*50%) + (Overall GPA*50%)

Economics GPA is the GPA of all economics courses completed prior to applying for declaration (except ECON 1099).

Additional combination of discipline relevant factors and evidence of interest in the field of Economics through personal statements and/or interviews will be used to determine acceptance into the major.

Selection to declare a major in Economics is competitive and will be based on availability of space.

Degree Requirements

Students must complete a minimum of 120 credit hours for the Bachelor of Arts in Economics degree in the following areas:

I. Core Curriculum (37 credits)

II. Collateral Requirements (9 credits)

III. Economics Core Requirements (40 credits)

IV. Requirements for General Economics Degree (15 or 16 credits)

V. Requirements for 'Economic Development and Policy Analysis' Concentration (15 or 16 credits)

VI. Requirements for 'Quantitative and Financial Economics' Concentration (16 credits)

VII. General Electives (18 or 19 credits)

I. Core Curriculum (37 credits)

The remaining 3 credit hours required to satisfy the Core are fulfilled by completing the course ECON 3071 - Labor Economics (3 cr.)

II. Collateral Requirements (9 credits)

- ACCT 2001 - Financial Accounting (3 cr.)
- BADM 4999 - Internship and Assessment (0 cr.)
- FINC 2101 - Business Finance (3 cr.)
- MACT 2222 - Statistics for Business (3 cr.) or DSCI 1411 - Fundamentals of Data Science I (3 cr.)

III. Economics Core Requirements (40 credits)

- ECON 2011 - Introduction to Microeconomics (3 cr.)
- ECON 2021 - Introduction to Macroeconomics (3 cr.)
- ECON 2061 - Mathematics for Economists I (3 cr.)
- ECON 2081 - Statistics for Economists (3 cr.)
- ECON 3011 - Intermediate Microeconomic Theory (3 cr.)
- ECON 3021 - Intermediate Macroeconomic Theory (3 cr.)
- ECON 3041 - Monetary Economics (3 cr.)
- ECON 3053 - Economic Development (3 cr.)
- ECON 3061 - Mathematics for Economists II (3 cr.)
- ECON 3071 - Labor Economics (3 cr.)
- ECON 3081 - Introduction to Econometrics (3 cr.)
- ECON 3082 - Practicum (1 cr.)
- ECON 4031 - International Trade (3 cr.)

- ECON 4091 - History of Economic Thought (3 cr.)

IV. Requirements for General Economics Degree (15 or 16 credits)

Students should choose five out of the following courses (a maximum of two finance courses is allowed):

- ECON 2051 - Economic History of the Modern Middle East (3 cr.)
- ECON 3054 - Environmental and Natural Resource Economics (3 cr.)
- ECON 3055 - The Digital Economy: Artificial Intelligence, the Future of Work and Development (3 cr.)
- ECON 3099 - Special Topics in Economics (3 cr.)
- ECON 4012 - Feasibility Study (3 cr.)
- ECON 4013 - Behavioral Economics (3 cr.)
- ECON 4014 - Public Economics and Policy Analysis (3 cr.)
- ECON 4015 - Applied Econometrics (3 cr.)
- ECON 4041 - Financial Economics (3 cr.)
- ECON 4050 - CopyrightX: The Economics of Copyright and Creativity (3 cr.)
- ECON 4051 - Seminar on Economic Development and Policy in the Middle East (3 cr.)
- ECON 4061 - Mathematical Economics (3 cr.)
- ECON 4081 - Econometrics (3 cr.) and ECON 4082 - Practicum (1 cr.)
- ECON 4094 - Economics of Egypt (3 cr.)
- ECON 4099 - Seminar: Selected Topics in Economics (3 cr.)
- FINC 3201 - Investment Analysis (3 cr.)
- FINC 4202 - Capital Markets (3 cr.)
- FINC 4301 - Corporate Finance (3 cr.)

V. Requirements for 'Economic Development and Policy Analysis' Concentration (15 or 16 credits)

Students should complete the following three courses:

- ECON 4014 - Public Economics and Policy Analysis (3 cr.)
- ECON 4051 - Seminar on Economic Development and Policy in the Middle East (3 cr.)
- ECON 4094 - Economics of Egypt (3 cr.)

and choose two out of the following courses:

- ECON 3054 - Environmental and Natural Resource Economics (3 cr.)
- ECON 3055 - The Digital Economy: Artificial Intelligence, the Future of Work and Development (3 cr.)

- ECON 3099 - Special Topics in Economics (3 cr.)
- ECON 4012 - Feasibility Study (3 cr.)
- ECON 4013 - Behavioral Economics (3 cr.)
- ECON 4015 - Applied Econometrics (3 cr.)
- ECON 4050 - CopyrightX: The Economics of Copyright and Creativity (3 cr.)
- ECON 4061 - Mathematical Economics (3 cr.)
- ECON 4081 - Econometrics (3 cr.) and ECON 4082 - Practicum (1 cr.)
- ECON 4099 - Seminar: Selected Topics in Economics (3 cr.)
- ECON 5254 - Economic Growth & Development (3 cr.) or PPAD 5211 - Qualitative Analysis for Policy and Administration (3 cr.)

VI. Requirements for 'Quantitative and Financial Economics' Concentration (16 credits)

Students should complete the following four courses:

- ECON 4041 - Financial Economics (3 cr.)
- ECON 4061 - Mathematical Economics (3 cr.)
- ECON 4081 - Econometrics (3 cr.) and ECON 4082 - Practicum (1 cr.)

and choose two out of the following courses:

- ECON 3054 - Environmental and Natural Resource Economics (3 cr.)
- ECON 3055 - The Digital Economy: Artificial Intelligence, the Future of Work and Development (3 cr.)
- ECON 3099 - Special Topics in Economics (3 cr.)
- ECON 4012 - Feasibility Study (3 cr.)
- ECON 4013 - Behavioral Economics (3 cr.)
- ECON 4015 - Applied Econometrics (3 cr.)
- ECON 4050 - CopyrightX: The Economics of Copyright and Creativity (3 cr.)
- ECON 4051 - Seminar on Economic Development and Policy in the Middle East (3 cr.)
- ECON 4094 - Economics of Egypt (3 cr.)
- ECON 4099 - Seminar: Selected Topics in Economics (3 cr.)
- ECON 5241 - Financial Economics (3 cr.) or ECON 5215 - Competitive Strategy and Game Theory (3 cr.)
- FINC 3201 - Investment Analysis (3 cr.)
- FINC 4202 - Capital Markets (3 cr.)
- FINC 4301 - Corporate Finance (3 cr.)
- MACT 4233 - Applied Multivariate Analysis (3 cr.)
- MACT 4314 - Financial Modeling (3 cr.)

VII. General Electives (18 to 19 credits)

Students majoring in Economics who get accepted into the Combined BA and MA in Economics degree may take up to three graduate economics courses that would count towards both the BA and MA degrees.

CO-OP (3 cr.)

Students majoring in Economics (B.A) who meet other relevant criteria are eligible to apply for the optional BUSC 4000 - Experiential Learning : CO-OP (3 cr.) that counts towards their general electives. Selection is highly competitive, subject to limited capacity, and based on criteria set by the School of Business. Students enrolled in BUSC 4000 are only permitted to concurrently enroll in the seminar course BUSC 4001 - Business 360 (3 cr.) that counts towards their electives. Enrollment in this extra course is optional and subject to the approval of the CO-OP faculty mentor.

Minors

Economics Minor

Students who seek a minor in economics must complete:

- ECON 2011 - Introduction to Microeconomics (3 cr.)
- ECON 2021 - Introduction to Macroeconomics (3 cr.)

With an average grade of B prior to applying for declaration.

After minor declaration, students must complete three other economics courses, 3000-level or above.

Economics courses that cannot be included in the minor are:

- ECON 3061 - Mathematics for Economists II (3 cr.)
- ECON 3081 - Introduction to Econometrics (3 cr.)

Accepted students should plan their minor with their academic advisor with the approval of the department.

The minor in field of study provides students with an introduction to the fundamental historical, descriptive, and theoretical concepts of the field.

Heikal Department of Management

Professors: M. Apaydin (Director of AUC CEMS), T. El Domiaty, M. El Shinnawy, S. Elwan, J. Fouad, G. Galal-Edeen, T. Hatem, I. Hegazy, S. Kamel (Dean), M. Mourad (BP Endowed Chair) (Associate Dean for Undergraduate Studies), H. Shamma, A. Tolba (Chair)

Professors of Practice: A. Awni (Director of John D. Gerhart Center), N. Farhadi (CIB Endowed Chair)

Associate Professors: W. Abdalla, I. Azzam, D. Bassiouni, N. Becheikh, R. El Bedawy, A. Ismail (Abdul Latif Jameel Endowed Chair of Entrepreneurship and Director of AUC Venture Lab), H. Meshreki, D. Rateb, R. Samir

Associate Professor of Practice: M. Darwish

Assistant Professors: R. Cherif, N. Eid, N. ElEnany, H. El Kolaly, H. Moussa, S. Toumi

The Heikal Department of Management offers four undergraduate degree programs:

- Bachelor of Business in Finance (BBF)
- Bachelor of Business in Marketing (BBM)
- Bachelor of Business and Entrepreneurship (BBE)
- Bachelor of Business Administration in Management of Information and Communication Technology (MICT) as a joint degree between the School of Business (BUS) and the School of Sciences and Engineering (SSE)

Mission

Our mission is to develop entrepreneurial and responsible business leaders and professionals who are dedicated to the betterment of the society by providing a high quality business education to top caliber students from all segments of Egyptian society as well as from other countries while focusing on continuous improvement and commitment to excellence in learning, intellectual contributions and service.

In support of this mission the department:

- Provides a high quality contemporary - style business education that blends a global perspective with national cultures and is relevant to the business needs of Egypt and the region.
- Provides programs that encourage the development of an entrepreneurial spirit that emphasizes creativity, innovation, individual initiative and teamwork.
- Provides learning environment that fosters faculty/student communication and promotes lifelong learning and career development.

- Encourages faculty development activities that improve teaching, maintain competence and keep faculty current with ideas and concepts in their fields.
- Seeks to develop a portfolio of intellectual contributions to learning and pedagogy, to practice, and to the theory and knowledge base of the disciplines.
- Encourages the establishment of close partnerships with the business community through consultancies and service that enhance the intellectual and economic quality of Egypt while enriching the learning process.

Core Values

In support of the mission, the faculty and staff are committed to shared core values that promote:

- Individual excellence
- Personal integrity and ethical professional behavior
- Collaboration, contribution, and inclusiveness
- Life-long learning
- Continuous improvement
- Adaptation to a changing global environment
- Social responsibility and community service

Bachelor of Business Administration

Management of Information and Communication Technology (MICT)

Bachelor of Business Administration in Management of Information and Communication Technology (MICT)

The study of Management of Information and Communication Technology (MICT) is designed with a particular focus to adapt its content in a local context congruent with the needs of Egyptian organizations and capable of addressing IT challenges that arise in such organizations. The MICT curriculum provides students with a foundation in the liberal arts and sciences while enabling them to develop expertise in business management and information technology. This program is a joint degree between the School of Business (BUS) and the School of Sciences and Engineering (SSE).

Students who select a major in MICT should be able to function as a user advocate and select, create, apply, integrate and administer computing technologies to meet the needs of users within a societal and organizational context. Equipped with this knowledge, the students enrolled in the major will be able to analyze, design and manage information and communication technology infrastructure.

Program Declaration Policy

Students now have two pathways to declare their major in MICT:

Option 1: Declaration Upon Admission (At the Gate)

Qualified students, who have fulfilled AUC admission requirements, may apply to declare their major at the time of admission. Selection is competitive, and will be decided after evaluating:

- High school grades
- Aptitude Test score (ASSESS or ITB Business)
- Interview

Option 2: Declaration After Enrollment

Students who do not declare upon admission may follow the standard declaration process after entering AUC. Students must complete 27 credit hours of study, including the courses listed below.

- CSCE 1001 CSCE 1001
- MACT 2222 or MACT 3223 or MACT 3224 or PSYC 2000 or SOC 3103
- MOIS 2101

Admission to the major is competitive. Eligible students will be ranked and selected based on the overall GPA requirement (weight of 50%) as well as the average GPA in the three courses required (weight of 50%).

Overall GPA of 100% = overall GPA is 50% +[average GPA in (CSCE 1001, (MACT 2222 or MACT 3223 or MACT 3224 or PSYC 2000 or SOC 3103), MOIS 2101)]* 50%

**Additional combination of discipline relevant factors and evidence of interest in the field of Management of Information and Communication Technology, through personal statements and/or interviews, will be used to determine acceptance into the major.

Students who seek the MICT Degree are NOT permitted to:

- Double major within the same department (i.e. BBE, BBM or BBF).
- Minor in Business Administration or Information Systems.

Degree Requirements

Students must complete a minimum of 131 credit hours for the MICT degree with no more than 63 hours of courses in the business area.

I. Core Curriculum (37 credits)

The remaining 3 credit hours required to satisfy the Core are fulfilled by completing the course MOIS 4999 - Internship and Graduation Project (3 cr.)

II. Collateral Requirements (18 credits)

- ACCT 2001 - Financial Accounting (3 cr.)
- ACCT 2002 - Managerial Accounting (3 cr.)
- DSCI 2410 - Fundamentals of Data Science II (3 cr.)
- ECON 2011 - Introduction to Microeconomics (3 cr.)
- ECON 2021 - Introduction to Macroeconomics (3 cr.)
- MACT 2222 - Statistics for Business (3 cr.) or MACT 3223 or MACT 3224 or PSYC 2000 or SOC 3103

III. Business Core Requirements (33 credits)

- BADM 2001 - Introduction to Business (3 cr.)
- BADM 3003 - Decision Making for Sustainable Organizations (3 cr.)
- ENTR 3102 - Entrepreneurship and Innovation (3 cr.)
- FINC 2101 - Business Finance (3 cr.)
- MGMT 3301 - Business Law (Commercial & Fiscal) (3 cr.)
- MKTG 2101 - Principles of Marketing (3 cr.)
- MKTG 3201 - Marketing Research (3 cr.)
- MOIS 2101 - Introduction to Information Systems/Technology (3 cr.)
- MOIS 3201 - Management Information Systems and Database Management (3 cr.)
- OPMG 3201 - Operations for Sustainable Advantage (3 cr.)
  Students can either take:
- MGMT 4203 - Organizational Behavior (3 cr.)
  or
- OPMG 4301 - Supply Chain Management (3 cr.)

IV. MICT Major Requirements (12 credits)

- MOIS 3301 - Entrepreneurial IT and Digital Transformation in E-Business (3 cr.)
- MOIS 4202 - Business Information Systems Analysis and Development (3 cr.)
- MOIS 4704 - AI in Business (3 cr.)
- MOIS 4999 - Internship and Graduation Project (3 cr.)
  (MOIS 4999 is the capstone course for this major.)

V. Computer Science Requirements (13 credits)

- CSCE 1001 - Fundamentals of Computing I (3 cr.)
- CSCE 1101 - Fundamentals of Computing II (3 cr.)
- CSCE 1102 - Fundamentals of Computing II Lab (1 cr.)
- CSCE 3422 - Introduction to Information Security (3 cr.)
- CSCE 3701 - Software Engineering (3 cr.)

VI. MICT Major Electives (12 cr.)

Choose 12 cr. from the below list:

- BUSC 4000 - Experiential Learning : CO-OP (3 cr.)
  Students majoring in Management of Information and Communication Technology (MICT) who meet other relevant criteria are eligible to apply for the optional BUSC 4000 - Experiential Learning : CO-OP (3 cr.) that counts towards their major electives. Selection is highly competitive, subject to limited capacity, and based on criteria set by the School of Business. Students enrolled in BUSC 4000 are only permitted to concurrently enroll in the seminar course BUSC 4001 - Business 360 (3 cr.). Enrollment in this extra course is optional and subject to the approval of the CO-OP faculty mentor.
- CSCE 2501 - Fundamentals of Database Systems (3 cr.)
- CSCE 3101 - Programming Language (1-3 cr.)
- CSCE 3104 - Concepts of Programming Languages (3 cr.)
- CSCE 3421 - Fundamentals of Computing and Communication Systems (3 cr.)
- CSCE 4502 - Design of Web-based Systems (3 cr.)
- CSCE 4930 - Selected Topics in Computer Science and Engineering (1-3 cr.)
- MOIS 3401 - Human Machine Interaction and Internet of Things (IoT) (3 cr.)
- MOIS 3501 - Geographic Information Systems (GIS) (3 cr.)
- MOIS 3601 - Intelligent Decision Support Systems (3 cr.)
- MOIS 3801 - Strategic Management of Information Technology (3 cr.)
- MOIS 4701 - Software Quality Management (3 cr.)
- MOIS 4702 - IT Service Management Course (ITSM) (3 cr.)
- MOIS 4703 - Enterprise Information Systems (3 cr.)
- MOIS 4705 - IT Project Management (3 cr.)
- MOIS 4970 - Special Topics in Management of Information Systems (3 cr.)
  (Different topics could be counted as different electives)

VII. General Electives (6 credits)

Bachelor of Business and Entrepreneurship (B.B.E.)

Business and Entrepreneurship (B.B.E.)

Bachelor of Business and Entrepreneurship (BBE)

A successful economic future for Egypt and the Middle East is highly concerned with a basic understanding of the principles and practices of business as they apply to firms in a dynamic environment. The business administration curriculum provides students with a foundation in the liberal arts and sciences while enabling them to develop expertise in business management and practices. Major emphasis is placed on the role of business in Egypt and the Middle East. This new program is built on the previous BBA program, with additional emphasis on business integration and entrepreneurship to cater to the current market needs for graduates with holistic business knowledge & entrepreneurial skills.

Program Declaration Policy

Students now have two pathways to declare their major in BBE:

Option 1: Declaration Upon Admission (At the Gate)

Qualified students, who have fulfilled AUC admission requirements may apply to declare their major at the time of admission. Selection is competitive, and will be decided after evaluating:

- High school grades
- Aptitude Test score (ASSESS or ITB Business)
- Interview

Option 2: Declaration After Enrollment

Students who do not declare upon admission may follow the standard declaration process after entering AUC. Students must complete 27 credit hours of study, including the courses listed below.

- ACCT 2001
- BADM 2001
- ECON 2011 or ECON 2021
- MACT 2222 or MACT 3223 or MACT 3224 or PSYC 2000 or SOC 3103

Based on the available space, a limited number of students who have successfully completed these courses and who meet the declaration requirements as determined by the department will be accepted in the major. The selection of students into the BBE Major is competitive and will depend mainly on the calculation of an equal weighted score between the overall GPA and major GPA. Additional combination of discipline relevant factors and evidence of interest in the field of Business and Entrepreneurship, through personal statements and/or interviews, will be used to determine acceptance into the major.

I. Overall GPA

The Overall GPA will be calculated using the following criteria:

- A minimum of 27 credit hours must be completed.
- All courses a student has completed will be included in the calculation, excluding, in certain cases, the course with the lowest grade*.

* A student could be eligible to have his/her lowest grade excluded from the calculation of the Overall GPA if he/she has completed 30 or more credit hours.

II. Major GPA

The Major GPA based will be calculated using the following criteria:

- A minimum of 12 credit hours of courses related to the Business Major must be completed.
- All Business Major courses, including collateral courses, that the student has completed will be included in the calculation.
- Admission to the Business & Entrepreneurship major is competitive. Eligible students will be ranked and selected based on their weighted grade point average.

Declaration GPA = Major GPA*50% + Overall GPA*50%

Students who seek the BBE Degree are NOT permitted to:

- Double major within the same department (i.e. BBF, BBM or MICT).
- Minor in Business Administration or Entrepreneurship.

Degree Requirements

Students must complete a minimum of 127 credit hours for the Bachelor of Business and Entrepreneurship degree in the following areas:

I. Core Curriculum (37 credits)

II. Collateral Requirements (15 credits)

III. Business Core Requirements (60 credits)

IV. Track Requirements (9 credits)

V. General Electives (6 credits)

I. Core Curriculum (37 credits)

The remaining 3 credit hours required to satisfy the Core are fulfilled by completing the course BADM 4001 - Business Strategy (3 cr.).

II. Collateral Requirements (15 credits)

All students seeking a Bachelor of Business and Entrepreneurship degree must complete the following collateral requirements:

- ACCT 2001 - Financial Accounting (3 cr.)
- ACCT 2002 - Managerial Accounting (3 cr.)
- ECON 2011 - Introduction to Microeconomics (3 cr.)
- ECON 2021 - Introduction to Macroeconomics (3 cr.)
- MACT 2222 - Statistics for Business (3 cr.) or MACT 3223 or MACT 3224 or PSYC 2000 or SOC 3103

III. Business Core Requirements (60 credits)

- BADM 2001 - Introduction to Business (3 cr.)
- BADM 3002 - International Business (3 cr.)
- BADM 3003 - Decision Making for Sustainable Organizations (3 cr.)
- BADM 4001 - Business Strategy (3 cr.) is the capstone course for this major.
- BADM 4900 - Graduation Project (3 cr.)
- BADM 4999 - Internship and Assessment (0 cr.)
- ENTR 3102 - Entrepreneurship and Innovation (3 cr.)
- ENTR 4302 - Corporate Entrepreneurship and Innovation (3 cr.)
- ENTR 4503 - Digital Strategy (3 cr.)
- FINC 2101 - Business Finance (3 cr.)
- FINC 4301 - Corporate Finance (3 cr.)
- MGMT 3301 - Business Law (Commercial & Fiscal) (3 cr.)
- MGMT 4202 - Managing the Human Capital (3 cr.)
- MGMT 4203 - Organizational Behavior (3 cr.)
- MKTG 2101 - Principles of Marketing (3 cr.)
- MKTG 3201 - Marketing Research (3 cr.)
- MKTG 4602 - Marketing Strategy (3 cr.)
- MOIS 2101 - Introduction to Information Systems/Technology (3 cr.)
- MOIS 3301 - Entrepreneurial IT and Digital Transformation in E-Business (3 cr.)
- OPMG 3201 - Operations for Sustainable Advantage (3 cr.)
- OPMG 4301 - Supply Chain Management (3 cr.)

IV. Track Requirements (9 credits)

Choose one Track from:

A. Entrepreneurship Track

Choose 9 credits from the track:

- BUSC 4000 - Experiential Learning : CO-OP (3 cr.) *
- ENTR 3201 - Entrepreneurial Finance and Venture Capital (3 cr.)
- ENTR 4301 - Entrepreneurship Lab: Developing and Launching a New Venture (3 cr.)
- ENTR 4303 - Social Entrepreneurship, Innovation and Sustainability (3 cr.)
- ENTR 4501 - Managing and Growing Family Businesses (3 cr.)
- ENTR 4502 - Innovation and Technology (3 cr.)
- ENTR 4970 - Special Topics in Entrepreneurship (3 cr.)

B. Management Track

Choose 9 credits from 3000 or 4000 level courses:

MGMT, MKTG, FINC, ENTR, MOIS, OPMG, BADM electives, and BUSC 4000 * Course.

* Students majoring in Business and Entrepreneurship (B.B.E.) who meet other relevant criteria are eligible to apply for the optional BUSC 4000 - Experiential Learning : CO-OP (3 cr.) that counts towards their major electives. Selection is highly competitive, subject to limited capacity, and based on criteria set by the School of Business. Students enrolled in BUSC 4000 are only permitted to concurrently enroll in the seminar course BUSC 4001 - Business 360 (3 cr.). Enrollment in this extra course is optional and subject to the approval of the CO-OP faculty mentor.

V. General Electives (6 credits)

Bachelor of Business in Finance (B.B.F.)

Business in Finance (B.B.F.)

Bachelor of Business in Finance (BBF)

With the proliferation of ground-breaking financial services, the unprecedented growth in banking and the interconnectedness of global economies, the field of finance has never been more vital. The Bachelor of Business in Finance helps participants advance their careers in the finance field and keep up with the growth in the banking and financial services sector in Egypt.

The BBF provides the deep financial knowledge needed to be a well-rounded professional who can understand the industry's best practices and apply them to meet local market demands. The courses are designed with a focus to adapt to a local context, fitting with the needs of Egyptian firms and meeting market needs and challenges.

Program Declaration Policy

Students now have two pathways to declare their major in BBF:

Option 1: Declaration Upon Admission (At the Gate)

Qualified students, who have fulfilled AUC admission requirements may apply to declare their major at the time of admission. Selection is competitive, and will be decided after evaluating:

- High school grades
- Aptitude Test score (ASSESS or ITB Business)
- Interview

Option 2: Declaration After Enrollment

Students who do not declare upon admission may follow the standard declaration process after entering AUC. Students must complete 27 credit hours of study, including the courses listed below.

- ACCT 2001
- BADM 2001
- ECON 2011 or ECON 2021
- MACT 2222 or MACT 3223 or MACT 3224 or PSYC 2000 or SOC 3103

Based on the available space, a limited number of students who have successfully completed these courses and who meet the declaration requirements as determined by the department will be accepted in the major. The selection of students into the BBF Major is competitive and will depend mainly on the calculation of an equal weighted score between the overall GPA and major GPA. Additional combination of discipline-relevant factors and evidence of interest in the field of Finance, through personal statements and/or interviews, will be used to determine acceptance into the major.

I. Overall GPA

The Overall GPA will be calculated using the following criteria:

- A minimum of 27 credit hours must be completed.

- All courses a student has completed will be included in the calculation, excluding, in certain cases, the course with the lowest grade*.

* A student could be eligible to have his/her lowest grade excluded from the calculation of the Overall GPA if he/she has completed 30 or more credit hours.

II. Major GPA

The Major GPA based will be calculated using the following criteria:

- A minimum of 12 credit hours of courses related to the Business Major must be completed.
- All Business Major courses, including collateral courses, that the student has completed will be included in the calculation**.**
- Admission to the Business in Finance major is competitive. Eligible students will be ranked and selected based on their weighted grade point average.

Declaration GPA = Major GPA*50% + Overall GPA*50%

Students who seek the BBF Degree are NOT permitted to:

- Double major within the same department (i.e. BBE, BBM or MICT).
- Minor in Business Administration.

Degree Requirements

Students must complete a minimum of 127 credit hours for the Bachelor of Business in Finance degree in the following areas:

I. Core Curriculum (37 credits)

II. Collateral Requirements (21 credits)

III. Business Core Requirements (21 credits)

IV. Finance Major Requirements (36 credits)

V. Finance Major Electives (6 credits)

VI. General Electives (6 credits)

I. Core Curriculum (37 credits)

The remaining 3 credit hours required to satisfy the Core are fulfilled by completing the course BADM 4001 - Business Strategy (3 cr.).

II. Collateral Requirements (21 credits)

All students seeking a Bachelor of Business in Finance degree must complete the following collateral requirements:

- ACCT 2001 - Financial Accounting (3 cr.)
- ACCT 2002 - Managerial Accounting (3 cr.)
- DSCI 2410 - Fundamentals of Data Science II (3 cr.)
- ECON 2011 - Introduction to Microeconomics (3 cr.)
- ECON 2021 - Introduction to Macroeconomics (3 cr.)
- ECON 2061 - Mathematics for Economists I (3 cr.)
- MACT 2222 - Statistics for Business (3 cr.) or MACT 3223 or MACT 3224 or PSYC 2000 or SOC 3103

III. Business Core Requirements (21 credits)

- BADM 2001 - Introduction to Business (3 cr.)
- BADM 3003 - Decision Making for Sustainable Organizations (3 cr.)
- BADM 4999 - Internship and Assessment (0 cr.)
- FINC 2101 - Business Finance (3 cr.)
- MGMT 3301 - Business Law (Commercial & Fiscal) (3 cr.)

  Please Choose 3 courses out of the following 4:
- ENTR 3102 - Entrepreneurship and Innovation (3 cr.)
- MKTG 2101 - Principles of Marketing (3 cr.)
- MOIS 2101 - Introduction to Information Systems/Technology (3 cr.)
- OPMG 3201 - Operations for Sustainable Advantage (3 cr.)

IV. Finance Major Requirements (36 credits)

- ACCT 3001 - Intermediate Accounting I (3 cr.)
- ACCT 3002 - Intermediate Accounting II (3 cr.)
- FINC 3201 - Investment Analysis (3 cr.)
- FINC 3301 - Non-Banking Financial Institutions (3 cr.)
- FINC 3401 - Applied Banking (3 cr.)
- FINC 3501 - International Finance (3 cr.)
- FINC 4203 - Introduction to Derivatives (3 cr.)
- FINC 4204 - Portfolio Management (3 cr.)

- FINC 4301 - Corporate Finance (3 cr.) is the major capstone course for the BBF major.
- FINC 4302 - Introduction to Private Equity (3 cr.)
- FINC 4303 - Financial Risk Management (3 cr.)
- MACT 4314 - Financial Modeling (3 cr.)

V. Finance Major Electives (6 credits)

Choose 2 courses from the below list:

- BUSC 4000 - Experiential Learning : CO-OP (3 cr.)
  Students majoring in Business in Finance (B.B.F.) who meet other relevant criteria are eligible to apply for the optional BUSC 4000 - Experiential Learning : CO-OP (3 cr.) that counts towards their major electives. Selection is highly competitive, subject to limited capacity, and based on criteria set by the School of Business. Students enrolled in BUSC 4000 are only permitted to concurrently enroll in the seminar course BUSC 4001 - Business 360 (3 cr.). Enrollment in this extra course is optional and subject to the approval of the CO-OP faculty mentor.
- ECON 2081 - Statistics for Economists (3 cr.)
- ECON 3041 - Monetary Economics (3 cr.)
- ECON 3081 - Introduction to Econometrics (3 cr.)
- ENTR 3201 - Entrepreneurial Finance and Venture Capital (3 cr.)
- FINC 3601 - Debt Markets (3 cr.)
- FINC 4202 - Capital Markets (3 cr.)
- FINC 4970 - Special Topics in Financial Management (3 cr.)
- MOIS 3301 - Entrepreneurial IT and Digital Transformation in E-Business (3 cr.)

VI. General Electives (6 credits)

Bachelor of Business in Marketing (B.B.M.)

Business in Marketing (B.B.M.)

Bachelor of Business in Marketing (BBM)

Marketing is at the heart of every institution. In fact, success of businesses has always been dependant on Marketing's ability to develop effective marketing strategies; from continuously examining markets and strategically adapting to consumer trends, to managing brands as well as innovating new product ideas to satisfy market needs. A Bachelor of Business in Marketing aims to provide its graduates with the skills and knowledge expected by the industry today. The course work will cover topics that influence business performance and marketing's role in shaping relevant decisions including brand management, product innovation, advertising and communication, and exploring buying behaviours among other topics. This program also aims to expose its graduates to a multi-disciplinary perspective taking into consideration psychology as

well as information systems and data analytics to accommodate to the changing industry requirements and provide a more in-depth knowledge of the latest market trends.

Program Declaration Policy

Students now have two pathways to declare their major in BBM:

Option 1: Declaration Upon Admission (At the Gate)

Qualified students, who have fulfilled AUC admission requirements, may apply to declare their major at the time of admission. Selection is competitive, and will be decided after evaluating:

- High school grades
- Aptitude Test score (ASSESS or ITB Business)
- Interview

Option 2: Declaration After Enrollment

Students who do not declare upon admission may follow the standard declaration process after entering AUC. Students must complete 27 credit hours of study, including the courses listed below.

- ACCT 2001
- BADM 2001
- ECON 2011 or ECON 2021
- MACT 2222 or MACT 3223 or MACT 3224 or PSYC 2000 or SOC 3103

Based on the available space, a limited number of students who have successfully completed these courses and who meet the declaration requirements as determined by the department will be accepted in the major. The selection of students into the BBM Major is competitive and will depend mainly on the calculation of an equal weighted score between the overall GPA and major GPA. Additional combination of discipline relevant factors and evidence of interest in the field of Marketing, through personal statements and/or interviews, will be used to determine acceptance into the major.

I. Overall GPA

The Overall GPA will be calculated using the following criteria:

- A minimum of 27 credit hours must be completed.
- All courses a student has completed will be included in the calculation, excluding, in certain cases, the course with the lowest grade*.

* A student could be eligible to have his/her lowest grade excluded from the calculation of the Overall GPA if he/she has completed 30 or more credit hours.

II. Major GPA

The Major GPA based will be calculated using the following criteria:

- A minimum of 12 credit hours of courses related to the Business Major must be completed.
- All Business Major courses, including collateral courses, that the student has completed will be included in the calculation.

Declaration GPA = Major GPA*50% + Overall GPA*50%
Admission to the Business in Marketing major is competitive. Eligible students will be ranked and selected based on their weighted GPA.

Students who seek the BBM Degree are NOT permitted to:

- Double major within the same department (i.e. BBE, BBF or MICT).
- Minor in Business Administration.

Degree Requirements

Students must complete a minimum of 127 credit hours for the Bachelor of Business in Marketing degree in the following areas:

I. Core Curriculum (37 credits)

II. Collateral Requirements (18 credits)

III. Business Core Requirements (39 credits)

IV. Marketing Major Requirements (18 credits)

V. Marketing Major Electives (9 credits)

VI. General Electives (6 credits)

I. Core Curriculum (37 credits)

The remaining 3 credit hours required to satisfy the Core are fulfilled by completing the course BADM 4001 - Business Strategy (3 cr.) as a major capstone.

II. Collateral Requirements (18 credits)

All students seeking a Bachelor of Business in Marketing degree must complete the following collateral requirements:

- ACCT 2001 - Financial Accounting (3 cr.)
- ACCT 2002 - Managerial Accounting (3 cr.)
- ECON 2011 - Introduction to Microeconomics (3 cr.)
- ECON 2021 - Introduction to Macroeconomics (3 cr.)
- MACT 2222 - Statistics for Business (3 cr.) or MACT 3223 or MACT 3224 or PSYC 2000 or SOC 3103
- RHET 3210 - Business Communication (3 cr.)

III. Business Core Requirements (39 credits)

- BADM 2001 - Introduction to Business (3 cr.)
- BADM 3003 - Decision Making for Sustainable Organizations (3 cr.)
- BADM 4001 - Business Strategy (3 cr.) is the capstone course for this major.
- BADM 4900 - Graduation Project (3 cr.)
- BADM 4999 - Internship and Assessment (0 cr.)
- ENTR 3102 - Entrepreneurship and Innovation (3 cr.)
- FINC 2101 - Business Finance (3 cr.)
- MGMT 3301 - Business Law (Commercial & Fiscal) (3 cr.)
- MGMT 4203 - Organizational Behavior (3 cr.)
- MKTG 2101 - Principles of Marketing (3 cr.)
- MKTG 3201 - Marketing Research (3 cr.)
- MOIS 2101 - Introduction to Information Systems/Technology (3 cr.)
- OPMG 3201 - Operations for Sustainable Advantage (3 cr.)
- OPMG 4301 - Supply Chain Management (3 cr.)

IV. Marketing Major Requirements (18 credits)

- MKTG 3202 - Consumer-Buyer Behaviour (3 cr.)
- MKTG 3301 - Marketing Communications Management (3 cr.)
- MKTG 4034 - Strategic Brand Management (3 cr.)
- MKTG 4302 - Digital Marketing (3 cr.)
- MKTG 4601 - International Marketing (3 cr.)
- MKTG 4602 - Marketing Strategy (3 cr.)

V. Marketing Major Electives (9 credits)

Choose three out of the following marketing elective courses:

- BUSC 4000 - Experiential Learning : CO-OP (3 cr.)
  Students majoring in Business in Marketing (B.B.M.) who meet other relevant criteria are eligible to apply for the optional BUSC 4000 - Experiential Learning : CO-OP (3 cr.) that counts towards their major electives. Selection is highly competitive, subject to limited capacity, and based on criteria set by the School of Business. Students enrolled in BUSC 4000 are only permitted to concurrently enroll in the seminar course BUSC 4001 - Business 360 (3 cr.). Enrollment in this extra course is optional and subject to the approval of the CO-OP faculty mentor.
- DSCI 2410 - Fundamentals of Data Science II (3 cr.)
- ENTR 4303 - Social Entrepreneurship, Innovation and Sustainability (3 cr.)
- ENTR 4503 - Digital Strategy (3 cr.)
- JRMC 3366 - Online Behavior and Web Analytics (3 cr.)
- MKTG 3203 - Social Media Marketing (3 cr.)
- MKTG 4201 - Advanced Marketing insights and Analytics (3 cr.)
- MKTG 4303 - Principles of Public Relations (3 cr.)
- MKTG 4401 - Professional Selling (3 cr.)
- MKTG 4501 - Services Marketing (3 cr.)
- MKTG 4970 - Special topics in Marketing (3 cr.) *
  ** Different topics can be counted as different electives*
- MOIS 3201 - Management Information Systems and Database Management (3 cr.)
- MOIS 3301 - Entrepreneurial IT and Digital Transformation in E-Business (3 cr.)
- MOIS 4704 - AI in Business (3 cr.)
- PSYC 3010 - Social Psychology (3 cr.)
- PSYC 3130 - Learning and Behavioral Psychology (3 cr.)
- PSYC 3270 - Theories of Personality (3 cr.)
  *** Students who wish to take PSYC courses are only allowed to take a MAX. of 1 course to count towards their Marketing Major Electives.*

VI. General Electives (6 credits)

Minors

Business Administration Minor

The minor in business administration is designed to introduce students to the basic concepts, models and techniques of the discipline. Students seeking to minor in Business Administration have to apply for the minor following the completion of the following three courses:

ACCT 2001 - Financial Accounting (3 cr.)

BADM 2001 - Introduction to Business (3 cr.)

ECON 2011 - Introduction to Microeconomics (3 cr.)

or

ECON 2021 - Introduction to Macroeconomics (3 cr.)

or

ENGR 3222 - Engineering Economy (3 cr.)

Declaration Policy

Students seeking to minor in Business Administration have to apply for the minor prior to registering for the remaining two business minor courses. The selection of students into the minor in Business Administration is competitive and will depend on the calculation of an equal weighted score between:

I. Overall GPA

The Overall GPA will be calculated using the following criteria:

1. A minimum of 27 credit hours must be completed.
2. All courses a student has completed excluding the course with the worst grade*.

*The worst grade is only excluded if the student has taken 30 or more credit hours.

II. GPA in Minor Requirement courses

The student's GPA in the above three courses required for minor declaration.

Admission to the Business Administration minor is competitive. Eligible students will be ranked and selected based on their weighted grade point average.

Declaration GPA = Minor GPA*50% + Overall GPA*50%

Requirements

The minor requires completion of five courses* (15 credit hours) as follows:

*Please make sure you have satisfied the pre-requisites for those courses.

1. ACCT 2001 - Financial Accounting (3 cr.)

2. BADM 2001 - Introduction to Business (3 cr.)

3. ECON 2011 - Introduction to Microeconomics (3 cr.)

Or ECON 2021 - Introduction to Macroeconomics (3 cr.)

Or ENGR 3222 - Engineering Economy (3 cr.)

4. FINC 2101 - Business Finance (3 cr.)

5. MKTG 2101 - Principles of Marketing (3 cr.)

Entrepreneurship Minor

The Minor in business entrepreneurship is designed to introduce students to the idea of entrepreneurship, the traits and behaviors of an entrepreneur. They will learn how to identify market opportunities and how to conduct simple feasible studies for their business ideas. Students can also expect to learn the basic legal aspects of establishing a company in Egypt, and the basic marketing and financial knowledge and skills they need to manage their new company. This knowledge is finally integrated when students engage in multidisciplinary teams in the challenging yet exciting task of creating a new venture and preparing a full business plan. Further exposure to real life will be attained through an internship that each student will have to attend.

Declaration Policy

Students seeking to minor in Entrepreneurship have to apply for the minor prior to registering for the minor courses. The selection of students into the minor in Entrepreneurship is competitive and depends on the student's overall GPA.

Students who minor in entrepreneurship are not permitted to have a minor in accounting.

Requirements

The Entrepreneurship minor requires completion of five courses (15 credit hours) as follows:

Students must take the following courses:

- BADM 2001 - Introduction to Business (3 cr.)
- ENTR 3102 - Entrepreneurship and Innovation (3 cr.)

In addition, students choose three of the following elective courses:

ENTR 3201 - Entrepreneurial Finance and Venture Capital (3 cr.)

ENTR 4301 - Entrepreneurship Lab: Developing and Launching a New Venture (3 cr.)

ENTR 4302 - Corporate Entrepreneurship and Innovation (3 cr.)

ENTR 4303 - Social Entrepreneurship, Innovation and Sustainability (3 cr.)

ENTR 4501 - Managing and Growing Family Businesses (3 cr.)

ENTR 4502 - Innovation and Technology (3 cr.)

ENTR 4503 - Digital Strategy (3 cr.)

Information Systems Minor

The study of information systems focuses on the need to improve systems for the benefit of individuals, organizations and society at large. An information system is concerned not only with the technical development of systems applications but also with the interface with people and the support of different business and decision processes. The information systems minor aims to provide a supplementary course of study for students who are neither taking a major in MICT nor Computer Science nor Computer Engineering.

Students who select a minor in information systems (IS) understand the fundamental concepts of information processing and the relationship between the underlying technology and end-user applications that are continuously changing and affecting different elements related to business and organizational development and growth. Equipped with this knowledge, the students enrolled in the minor will be able to solve different computer and information systems related problems, as well as exploring the latest in information and communication technology.

Declaration Policy

Students seeking to minor in Information Systems have to apply for the minor prior to registering for the minor courses. The selection of students into the minor in IS is competitive and depends on the student's overall GPA.

Course Requirements

Students who minor in information systems are required to complete the following courses:

1. CSCE 1001 - Fundamentals of Computing I (3 cr.)

2. MOIS 2101 - Introduction to Information Systems/Technology (3 cr.)

3. MOIS 3201 - Management Information Systems and Database Management (3 cr.)

or MOIS 4970 - Special Topics in Management of Information Systems (3 cr.)

4. MOIS 3601 - Intelligent Decision Support Systems (3 cr.)

or MOIS 4970 - Special Topics in Management of Information Systems (3 cr.)

5. CSCE 4502 - Design of Web-based Systems (3 cr.)

or MOIS 3301 - Entrepreneurial IT and Digital Transformation in E-Business (3 cr.)

Office of the Associate Dean for Undergraduate Studies and Administration - BUS

The Office of the Associate Dean for Undergraduate Studies and Administration oversees BUSC 4000 Experiential Learning : CO-OP.

Office of the Associate Dean for Graduate Studies and Research - BUS

Executive Master of Business Administration (EMBA)

Executive Master of Business Administration (EMBA)

The EMBA is a professional degree designed for experienced executives with significant work experience (minimum 8 years) who are seeking to push their boundaries and limits with greater strategic vision, skills and leadership development that can immediately be applied to their current positions and have immediate effect on advancing to senior management positions in their organizations. The program focuses on integrating innovation, entrepreneurship and leadership to encourage future executives to think out the box. The curriculum emphasizes managerial and leadership skills, developing creativity and innovation, building on previous experiences, creating a solid networks with classmates, alumni and faculty as well as mastering broad range of functional and managerial knowledge. It enable students to apply immediately newfound skills and ideas in their workplace and engage in real-time global business challenges.

Admissions

All applicants must satisfy the general university requirements for graduate programs and have a bachelor's degree from a regionally accredited college or university in any academic discipline with minimum GPA of 3.0 and minimum 8 years of experience in his field of work. The GMAT is recommended but not required as the case of the MBA. A personal interview is a must to be accepted in the program. In addition, minimum acceptable results for standardized test for English Language proficiency will be required as in line with university policies for admission i.e TOFEL, 2 recommendation letters, written essay, written letter of commitment from the organization, whether sponsoring or not its employees, to allow their employees off the job during the program. To obtain EMBA degree, a total of 36 credit hours are required.

EMBA Program Structure

The EMBA program is delivered in a highly interactive modular format. It consists of 23 modules for a total of 36 credit hours to satisfy the requirements of the program at AUC.

Program Details

The 23 modules of the program are divided into five sections:

Section 1: General Management Perspectives (4.5 cr.)

Takes Participants from general insights to challenging business practices of today's economy and globalization, thus preparing them for what they will be doing in the coming modules. Participants will learn general insights about business practices, globalization of economy latest theories and best practices of today, importance of using team-work approach which the program focuses on through out the modules either through group assignments, case studies and projects and building basic framework in a qualitative, analytical and problem solving skills. It covers the following modules:

- EMBA 5601 - Leading and Navigating Strategic Change (1.5 cr.)
- EMBA 5603 - Data-Driven Decision Making (1.5 cr.)
- EMBA 5604 - Economic Analysis for Business Decisions (1.5 cr.)

Section 2: Business Core (12 cr.)

Gaining common business knowledge background with more depth and complexity in order to master the management's fundamentals and disciplines. This section is going to prepare them to master the management fundamentals i.e. accounting, finance, marketing etc., with a much higher level of complexity and expertise. It will expand and strengthens participants' basic knowledge in the fundamental disciplines of business, so they will be able to integrate everything together when making business decisions or developing action plans that provide effective leadership of the organization.

- EMBA 5605 - Financial Statements Engineering (1.5 cr.)
- EMBA 5606 - Financial Management (1.5 cr.)
- EMBA 5607 - Corporate Financial Management (1.5 cr.)
- EMBA 5626 - International Business Tour I (2 cr.)
- EMBA 5627 - The Art of Business Strategy (1.5 cr.)
- EMBA 5628 - Dynamic Marketing Strategy (1.5 cr.)
- EMBA 5629 - Marketing Management (1.5 cr.)
- EMBA 5630 - Master Class I (1 cr.)

Section 3: Managerial Global Leadership (12.5 cr.)

The modules combine a solid foundation in critical management practices with essential skills for senior level executives i.e. negotiation. It prepares executives to be effective leaders, confident, innovative, visionary, be able to manage entrepreneurial ventures and for the management greatest challenge of all, constant change. The continuous shift in the globalized economy and the rapid advances in communication technology forces organizations to constantly reshape their business strategies, structure and role of their business leaders. Executives have to change themselves to be confident, speedy, visionary, innovative, and responsive to this challenging business environment. Being effective leaders, they will help their organizations to survive in this unpredictable global business environment.

- EMBA 5613 - Effective Leadership (1.5 cr.)
- EMBA 5614 - Navigating the Frontiers of Strategic Innovation Management (1.5 cr.)
- EMBA 5616 - Mastering the Art of Negotiation (1 cr.)
- EMBA 5617 - Designing, Launching and Growing Entrepreneurial Ventures (1.5 cr.)
- EMBA 5618 - International Business Tour II (2 cr.)
- EMBA 5625 - Doing Business in Africa (1.5 cr.)
- EMBA 5631 - Navigating the Dynamics of Strategic Operations and Supply Chain Management (1.5 cr.)
- EMBA 5632 - Master Class II (1 cr.)
- EMBA 5633 - Master Class III (1 cr.)

Section 4: Advanced Business Core (3 cr.)

Relating business to legal environment, competition law and corporate governance and how they affect decision-making. This section addresses what executives should know about legal environment, competition law and about how corporate governance affects the way organizations are directed and controlled. It will address some important aspects such as separation of ownership and control, property rights and reconciling conflicts between stakeholders. It examines how the quality of corporate governance system influences prices, shares of the company and cost of raising capital and how it complies with the legal and regulatory requirements. It relates business to its legal environment and provides broad analysis of how laws influence management decisions and strategies. Participants will be familiarized with certain basic legal concepts relating to doing business on the national and international levels. Thus completing the cycle by making executives familiar with how business decisions and transactions should comply with national as well as international laws.

- EMBA 5620 - Corporate Governance and Sustainability in Action (1.5 cr.)
- EMBA 5634 - Business Challenges and Legal Environment (1.5 cr.)

Section 5: Integrating Project (4 cr.)

This section is the integrating part of the program. Participants undertake a consulting project within their own organization, identify a challenge or an opportunity to seek to address and undertake the appropriate analysis leading to a recommended course of action. They are encouraged to apply and integrate several analytic tools and organizational skills learned in various modules during the program.

- EMBA 5623 - Capstone Consulting Project: Developing a CEO Mindset for Strategic Business Transformation (4 cr.)

Master of Arts

Economics in International Development (M.A.)

This program is specially designed for students who wish to acquire in-depth understanding and knowledge in the field of development. An interdisciplinary approach is adopted as an essential requirement for gaining a broader and more integrated perspective of this dynamic field of study. The program should be of interest to those who plan to seek a position or a career with a wide range of development-related institutions at the macro or micro levels. Examples include; United Nations Agencies, The World Bank, bilateral donor representative offices/projects, NGOs, and development-finance institutions. In addition, the program equips students to assume technical positions in government departments directly concerned with development planning and evaluation.

Admission

The applicant for admission to this program should have a good knowledge of the concepts and analytical tools of economics. An applicant whose bachelor's degree is in a discipline other than economics may be admitted provisionally, but in such cases the applicant must either display competence in economics by passing required examinations or develop the necessary competence by completing additional undergraduate courses.

Applicants have to fulfill the academic and prerequisite requirements to receive full admission to the master's program in Economics in International Development.

This program does not have an equivalency from the Supreme Council of Universities.

Courses

A minimum of 27 credit hours is required. All students must:

1. Take six core courses

- ECON 5213 - Project Evaluation (3 cr.)
- ECON 5250 - Economic Setting for Development I (3 cr.)
- ECON 5251 - The Economic Setting for Development II (3 cr.)
- ECON 5252 - Economic Development in Middle East Countries (3 cr.)
- ECON 5259 - Research Practicum (3 cr.)
- ECON 5282 - Empirical Methods in Development Economics (3 cr.)

2. Choose one Economics elective

- ECON 5215 - Competitive Strategy and Game Theory (3 cr.)
- ECON 5231 - Advanced International Trade (3 cr.)
- ECON 5254 - Economic Growth & Development (3 cr.)
- ECON 5257 - Economic Strategies for Sustainable Development (3 cr.)
- ECON 5271 - Advanced Labor Economics (3 cr.)
- ECON 5299 - Advanced Topics in Economics (3 cr.)

3. Choose one track

Students will complete their degree credit requirements by choosing 6 credits in one of the following tracks:

International Political Economy

- POLS 5202 - Scope and Method of Developmental Analysis (3 cr.)
- POLS 5225 - International Political Economy (3 cr.)
- POLS 5245 - Development Politics and International Cooperation (3 cr.)

Non Governmental Organisations and Development

- PPAD 5126 - Managing NGOs in Developing and Transitional Countries (3 cr.)
- PPAD 5128 - Corporate Social Responsibility and NGO Partnerships (3 cr.)
- PSYC 5253 - Consultation to Non-Profit Organizations (3 cr.)

Financial Management for Development

Two of the following courses (each for 1. 5 cr.) are offered concurrently within the same semester. Students must take both courses in tandem. If a student drops a 1. 5 credit hours course the other co-requisite course is dropped automatically.

- ACCT 5211 - Accounting for Managers (1.5 cr.)
- ENTR 5211 - Developing an Entrepreneurial Mindset (1.5 cr.)
- FINC 5202 - Financial Management (3 cr.)
- PPAD 5222 - Fundamentals of Financial Planning and Management for Government and Nonprofit Organizations (3 cr.)

International Migration and Development

- MRS 5200 - Introduction to Migration and Refugee Studies (3 cr.)
- MRS 5202 - Migration & Refugee Movements in the Middle East and North Africa (3 cr.)
- MRS 5203 - International Migration and Development (3 cr.)

Economics with a Thesis Option or with concentrations in Middle East Economic Development, Competitive Strategy and Valuation, International Economics, and Financial Economics for Non-Thesis Track (M.A.)

Completion of the AUC Graduate Program in Economics opens wide opportunities for prestigious and creative jobs in research centers and departments, both in government and private institutions. AUC graduates of this program have also made valuable additions to several U.N. and international development institutions.

Admission

The applicant for admission to the master's program in economics should have a considerable background in economic theory. An applicant whose bachelor's degree is in a discipline other than economics may be admitted provisionally, but in such cases the applicant must complete additional undergraduate courses. The prerequisite for full admission to the master's degree in economics is completion of ECON 4061 and ECON 4081 with a grade of B or better; i.e. a student must complete ECON 4061 and ECON 4081 before enrolling in any 5000 level course.

Applicants must fulfill the academic and prerequisite requirements to receive full admission to the Master in Economics program.

Students applying for Master in Economics can choose either Thesis Track or Non-Thesis Track option. Total credit hours for completion of the Master's Degree for either track is 27 credit hours.

Requirements for Thesis Track

Courses

All students must take the following four courses (12 credit hours)

- ECON 5201 - Research Workshop (3 cr.)
- ECON 5211 - Advanced Microeconomic Theory (3 cr.)
- ECON 5221 - Advanced Macroeconomic Theory (3 cr.)
- ECON 5281 - Time Series Econometrics (3 cr.)

Three Additional Courses (9 credit hours)

A maximum of three hours of 5000-level courses or 4000 level courses in related fields other than economics may be taken for graduate credit with the approval of the Director of Graduate Studies and the Department Chair.

Thesis (six credit hours)

An M.A. thesis is not allowed to be submitted for examination until the student has made a presentation of a major part of it at the department seminar.

Requirements for Non-Thesis Track

Courses

All students must take the following four courses (12 credit hours)

- ECON 5201 - Research Workshop (3 cr.)
- ECON 5211 - Advanced Microeconomic Theory (3 cr.)
- ECON 5221 - Advanced Macroeconomic Theory (3 cr.)
- ECON 5281 - Time Series Econometrics (3 cr.)

Three Additional Courses (9 credit hours)

A maximum of three hours of 5000-level courses or 4000 level courses in related fields other than economics may be taken for graduate credit with the approval of the Director of Graduate Studies and the Department Chair.

ECON 5259 - Research Practicum (3 cr.)

Concentration Fields

Within the Non-Thesis track student must complete at least one Concentration Field (6 credit hours).

The MA in Economics offers four concentration fields:

1. Middle East Economic Development (6 credit hours)

- ECON 5252 - Economic Development in Middle East Countries (3 cr.)
- ECON 5254 - Economic Growth & Development (3 cr.)

2. Competitive Strategy and Valuation (6 credit hours)

- ECON 5213 - Project Evaluation (3 cr.)
- ECON 5215 - Competitive Strategy and Game Theory (3 cr.)

3. International Economics (6 credit hours)

- ECON 5231 - Advanced International Trade (3 cr.)
- ECON 5233 - International Finance (3 cr.)

4. Financial Economics (6 credit hours)

- ECON 5241 - Financial Economics (3 cr.)
- ECON 5242 - Financial Econometrics (3 cr.)

Master of Business Administration (MBA)

Business Administration (M.B.A.)

Master of Business Administration (MBA)

The AUC MBA program is designed to prepare students of all backgrounds to become responsible global leaders and to equip students with a strong understanding of real-life business practices and a versatile "toolbox" of analytical skills and technical competencies that drives their managerial professional success. The program is housed by the School of Business which holds the triple-crown accreditation; the Association to Advance Collegiate Schools of Business (AACSB), European Quality Improvement System (EQUIS), and the Association of MBAs (AMBA) accreditations.

While the curriculum adopts international guidelines and standards, it also addresses local and regional business particularities. By incorporating a comprehensive body of knowledge and the

right set of experiences, the AUC MBA program helps students develop the right managerial perspective to address the challenges and seize the opportunities of today's ever-changing local, regional and global business environment.

The students' MBA experience is built on the foundation of four Business Essentials courses that are complemented with the five Functional Disciplines of Management and two Integrative Strategic Management courses. Students then move on to choose between two career prospect tracks that guide their advanced learning journey; the Corporate Advancement track which allows students to focus on career growth opportunities within and beyond their organizations, and the Entrepreneurship track that allows students to focus on entrepreneurial firms and family businesses. Students are also given the flexibility to tailor their business education from a variety of in-depth and insightful elective courses and/or Business Seminar or a multidisciplinary elective from other schools that cover contemporary topics in business in the region.

Admission

All MBA applicants must satisfy the university's graduate admission requirements. While Graduate Management Admission Test (GMAT) scores or NMAT scores are currently not required, applicants are highly recommended to include with the admission application their results, especially if also applying for fellowship consideration. Preferences in the allocation of fellowships will be given to applicants with high test scores. In addition, applicants should have three or more years of relevant professional experience. A minimum of 36 credit hours is required to obtain an MBA degree. Waiving of any course will be replaced with another equivalent credit course.

Business Essentials Modules (6 credits)

The Business Essentials Modules (BEMs) provide students with the basic background required for their MBA studies. Each Business Essentials Module consists of two courses (each for 1.5 cr.) offered concurrently within the same semester. Students must take both courses in tandem. If a student drops a 1.5 credit hours course the other co-requisite course is dropped automatically.

The Business Essentials Module blocks are as follows:

Business Essentials Module 1

- ACCT 5211 - Accounting for Managers (1.5 cr.)
- ENTR 5211 - Developing an Entrepreneurial Mindset (1.5 cr.)

Business Essentials Module 2

- FINC 5211 - Managerial Economics in Business (1.5 cr.)

- OPMG 5211 - Statistics in Business (1.5 cr.)

Functional Management (15 credits)

Students must complete the following five Functional Management courses:

- FINC 5202 - Financial Management (3 cr.)
- MGMT 5302 - Managing Organizations and the Human Capital (3 cr.)
- MKTG 5306 - Strategic Marketing (3 cr.)
- MOIS 5211 - Information Technologies and Systems (3 cr.)
- OPMG 5202 - Operations and Supply Chain Management (3 cr.)

Integration Course (6 credits)

- BADM 5310 - Strategic Management (3 cr.)
- BADM 5401 - Business Consultancy (3 cr.)

Career Prospects (6 credits)

Following the completion of the Business Essentials and Functional Management courses students must choose between the two following career prospect tracks:

Corporate Advancement Track (6 credits)

To complete this track, students are required to complete two 5000-level courses (6 credits) selected from any of the following areas: FINC, MKTG, MGMT, MOIS, OPMG, and a maximum of 3 credits from the ENTR area.

Entrepreneurship Track (6 credits)

To complete this track, students are required to complete two 5000-level courses (6 credits) offered under ENTR.

Relevance Themes (3 credits)

In alignment with the career prospect tracks selected, students may choose a 5000-level course including BADM 5370 - Business Seminar and Contemporary Topics in Management (3 cr.) or a 5000-level multidisciplinary course from another school upon faculty advisor recommendation and approval, to provide a variety of in-depth and thematic topics that help advance the students' learning journey.

Master in International Management/CEMS

Master in International Management/CEMS (MIM/CEMS)

The Master in International Management/CEMS (MIM/CEMS) is a one-year pre-experience master program that builds on previous knowledge acquired by students in their Bachelor's degree studies. The MIM year is composed of three main terms, whereby students are required to spend one term at AUC, one term at any of the other CEMS member schools around the globe, and one international internship of at least 8 weeks outside the country at which the student applied and was accepted. Students command of at least three (3) languages, including mother tongue, are mandatory to graduate. Upon graduation, the MIM students become alumni of both AUC and CEMS.

The (MIM/CEMS) is the most international pre-experience master program in the world as it combines solid academic education with relevant business practice. The curriculum includes components of the (MIM/CEMS) common curriculum (i.e. offered in all schools member of the CEMS alliance) as well courses and seminars tailored to the specific local and regional context. The curriculum as well as the courses' content are designed, regularly updated, and delivered in collaboration with corporate and social partners to ensure the curriculum is practical and relevant to the local, regional, and global business environment. It represents hence a perfect preparation for the students targeting an international career in business.

Admission Requirements

To be accepted in the AUC- MIM/CEMS applicants shall fulfill the following requirements:

- A Bachelor's degree in business, economics, accounting.
- For students holding a bachelor degree in a non-business bachelor degree a minimum of 30 credit hours of business courses is required (60 ECTS).
- High academic records.
- Provide proof of proficiency in English (if not mother tongue) (Check English Proficiency requirements below).
- A maximum of two years from the graduation date (undergraduate degree) and the date of the start of the MIM program.
- Two (2) letters of references from instructors or employers advocating the student's readiness to the AUC- MIM/CEMS program and including multi-cultural aptitude with emphasis on academic rigor.
- One-page letter of motivation. (Check components of letter of motivation below).
- Applicant's updated Curriculum Vitae.

- Command of a second language other than English (this may include Arabic, French, German or any CEMS approved language[RS1]).
- Filled mother tongue declaration form https://cems.box.com/s/xox7sjjcegabkcgms06zbdyo6npnrlri signed by the applicant to be submitted with the rest of the documents.
- Good international exposure, relevant extra-curricular activities and/or community service.
- Selected applicants will go through a rigorous personal interview.

English Proficiency Requirements

Students applying to Master in International Management / CEMS (MIM/CEMS) need to provide a proof of English proficiency through any of the following Methods:

- IELTS: minimum IELTS Band score: 7.0, minimum IELTS Writing score: 7.0.
- iBT TOEFL: minimum overall iBT TOEFL score: 100, minimum iBT Writing score: 27.
- CPE Grade C(*): An overall score of 200 or above with a writing score of 200 or above.
- CAE Grade B(*): An overall score of 193 or above with a writing score of 193 or above.

(*): No letter grades will be taken into account for the English Language results, only numerical scores.

Exemption from the English language examinations is only allowed for applicants who received a degree solely taught in English from an EQUIS and/or AACSB accredited institution.

Additional Notes

- While the validity of any of these English language examinations is 2 years from the day of the exam, the results will not be considered for graduate admission if the expiry date is before the first day of registered classes at AUC.
- The American University in Cairo reserves the right to request English proficiency test results from any applicant as deemed necessary.
- This program does not have an equivalency from the Egyptian Supreme Council of Universities (SCU).

Components of Letter of Motivation

At AUC MIM/CEMS program, we seek a strong sense of international spirit in the candidate's motivation. We also seek strong, convincing written motivation for the program, in the first instance. The letter of motivation should therefore address some of the following topics.

- Why do you apply for MIM CEMS at AUC?
- Why do you want to study in Egypt?
- Why do you think you are the right person for this program?

- In which way will you contribute to the MIM CEMS program?
- What knowledge and skills gathered in your previous education/experience will be useful?
- How do you estimate your own personality? Do you think you are a good leader? Are you somebody who can make a difference? What makes you think so? (Emphasize your strong points, but be realistic).

Program Details

The MIM program requires a total of (33 Credits) including required courses, exclusive courses, elective courses, seminars and culminates with a business project and international internship. The program also requires all MIM/CEMS students to graduate with competence in three languages, one of which must be English.

AUC adopts the credit hours system while the (CEMS) adopts the ECTS (European Credit Transfer and Accumulation System).

Below is the definition of each of these two systems.

- Credit Hour: Coursework is counted in credit hours. In general, a credit hour represents a one-hour class period and at least two hours of individual study each week for one semester. Hence 3 credit hour course represents 3 hours of class work and 6 hours of individual study per week.
- ECTS: workload ranges from 1,500 to 1,800 hours for an academic year, which means that one credit corresponds to 25 to 30 hours of work.

According to the above definitions, the credit conversion of the European ECTS and the credit units at AUC (2 ECTS = 1 credit).

CEMS Required Courses

CEMS 5201 - Global Strategy (3 cr.)

CEMS 5202 - Global Leadership (3 cr.)

CEMS Exclusive courses

TERM 1 (September-December)

CEMS 5203 - Bottom of the Pyramid (BOP) Marketing (3 cr.)

CEMS 5205 - Global Supply Chain Management (3 cr.)

CEMS 5208 - International Business Analytics (3 cr.)

TERM 2 (February- May)

CEMS 5206 - Cultural Heritage and Sustainable Business (1.5 cr.)

Elective Courses (6 credits)

Any 5000 level course without specific prerequisites is acceptable.

Seminars

The CEMS- MIM program includes a set of seminars in both terms. These seminars grading is based on a pass/fail grade. The number of credit hours for these seminars are distributed according to the following:

TERM 1 (September-December)

CEMS 5200 - Block Seminar (1.5 cr.) 5-day seminar delivered before the start of term 1

CEMS 5221 - Skill Seminar (0.5 cr.)

TERM 2 (February- May)

CEMS 5220 - Global Citizenship Seminar (0.5 cr.)

CEMS 5221 - Skill Seminar (0.5 cr.)

CEMS 5250 - Business Project (7.5 cr.)

CEMS 5355 - International Internship (0 cr.)

Language Requirements

All MIM/CEMS students graduate with competence in three languages, one of which must be English (at an advanced level) and another which must be a CEMS language.

The current CEMS Languages are: Arabic, Bengali, Cantonese, Czech, Danish, Dutch/Afrikaans, Farsi/Tajik, Finnish, French, German, Greek, Hebrew, Hindi/Urdu, Hungarian, Indonesian/Malay, Irish, Italian, Japanese, Korean, Mandarin, Norwegian, Polish, Portuguese, Romanian, Russian, Serbo-Croat (Bosnian, Croatian, Serbian, Montenegrin), Spanish, Swedish, Tagalog, Tamil, Thai, Turkish and Vietnamese.

The third language can be a CEMS language or any other language.

It is the students' responsibility to meet these language requirements. The school will be guiding the students to language teaching/testing certified locations.

The minimum language requirements are the following:

Language 1	English
Mother Tongue or Proficiency (Fulfilled through entry requirements of the MIM program	
Language 2	A CEMS official language
Mother tongue or B2/oral B1/written	
Language 3	Any Language
Mother Tongue or Elementary Level	

Master of Science

Finance, with concentration in FinTech (M.Sc.)

The MSc in Finance directly targets the expertise required in today's global financial environment. This program gives a clear understanding of practical financial decision-making. Graduates work in investment and merchant banks, insurance and pension funds, and for governments and multinational companies. The MSc in Finance (thesis track) prepares students for more advanced graduate programs (DBA/PhD).

To obtain the MSc in Finance degree, students must complete 36 credits of which 24 credits of course work and 12 credits for thesis requirements to be completed in two full years.

Admission

The Applicant must present a bachelor's degree from a regionally accredited college or university with a minimum GPA of 3.0 or very good for non-GPA measured degrees. GRE or GMAT test results are not a requirement for the MSc Finance application, but they strengthen the application. A completed Level I exam for the Chartered Financial Analyst (CFA) designation is also considered a significant asset in your application.

No previous working experience is needed.

Students who do not have finance background will need to take a set of preparatory courses.

Candidates considering the MSc in Finance will be invited to complete a math test to assess their quantitative skills.

MSc Core Courses (12 credits)

Students must complete four core courses.

The core courses are:

- FINC 5201 - Managerial Economics (3 cr.)
- FINC 5203 - Investments and Portfolio Management (3 cr.)
- FINC 5204 - Quantitative Financial Methods (3 cr.)
- FINC 5231 - Statistical Methods in Finance (3 cr.)

MSc Elective Courses (12 credits)

The student must complete all core courses before attempting to take any of the elective courses. Students pursuing the general track of the Finance (M.Sc.) must choose 12 credits from the below list of elective courses that are geared towards Investment and Corporate Finance. To complete the Finance with Fintech Concentration (M.Sc.), students must choose 12 credits from the Fintech concentration below.

- FINC 5311 - International Financial Management (3 cr.)
- FINC 5312 - Financial Institutions and Markets (3 cr.)
- FINC 5313 - Derivatives (3 cr.)
- FINC 5314 - Real Estate Finance (3 cr.)
- FINC 5315 - Islamic Finance (3 cr.)
- FINC 5325 - Sustainable Finance (3 cr.)
- FINC 5331 - Fixed Income Securities (3 cr.)
- FINC 5333 - Private Equity and Venture Capital (3 cr.)
- FINC 5351 - Advanced Corporate Finance (3 cr.)
- FINC 5352 - Financial Modeling (3 cr.)
- FINC 5353 - Financial Risk Analysis (3 cr.)
- FINC 5370 - Selected Topics in Financial Management (3 cr.)

  ** One elective graduate course could be selected from the Fintech concentration.*

  *** In exceptional cases, FINC 5375 independent course could be offered to students.*

FinTech Concentration (12 credits)

The student must complete the following course:

- FINC 5320 - Financial Computing (3 cr.)

In addition the student chooses 3 courses (9 cr.) from the following concentration courses:

- CSCE 5261 - Advanced Artificial Intelligence (3 cr.)
- FINC 5221 - Financial data Analytics (3 cr.)

- FINC 5313 - Derivatives (3 cr.)
- FINC 5322 - Machine Learning and Artificial Intelligence in Finance (3 cr.)
- FINC 5353 - Financial Risk Analysis (3 cr.)
- FINC 5370 - Selected Topics in Financial Management (3 cr.)

** One elective graduate course could be selected from the list of MSc elective courses.*
*** In exceptional cases, FINC 5375 independent course could be offered to students.*

Thesis Requirements (12 credits)

A student must take a research methodology course before starting the thesis.

FINC 5402 - Research Methodology (3 cr.)

The thesis is not allowed to be submitted for examination until the student has made a presentation of a major part of it at a department seminar.

FINC 5401 - Thesis (3 cr.)

Graduate Diploma

Economics in International Development (Graduate Diploma)

This graduate diploma is designed for students who wish to gain a basic understanding and knowledge of development, but who may not intend to proceed to obtain a Master's Degree. This Diploma program is also interdisciplinary to provide a broader and more integrated perspective of development issues.

The Diploma should be of interest to those who plan to seek a position or a career with development-related institutions or with government departments directly concerned with development planning and evaluation.

Admission

The applicant for admission to this program should have a good knowledge of the concepts and analytical tools of economics. An applicant whose bachelor's degree is in a discipline other than economics may be admitted provisionally, but in such cases, the applicant must either display competence in economics by passing required examinations or develop the necessary competence by completing additional undergraduate courses.

Courses

A minimum of 15 credit hours is required. All students must:

1. Take three core courses

- ECON 5250 - Economic Setting for Development I (3 cr.)
- ECON 5251 - The Economic Setting for Development II (3 cr.)
- ECON 5282 - Empirical Methods in Development Economics (3 cr.)

2. Choose two electives

One from each of the following groups of courses as indicated below:

Group 1

- ECON 5213 - Project Evaluation (3 cr.)
- ECON 5217 - Health Economics in Developing Countries (3 cr.)
- ECON 5231 - Advanced International Trade (3 cr.)
- ECON 5252 - Economic Development in Middle East Countries (3 cr.)
- ECON 5254 - Economic Growth & Development (3 cr.)
- ECON 5271 - Advanced Labor Economics (3 cr.)

Group 2

- POLS 5225 - International Political Economy (3 cr.)
- POLS 5236 - Contemporary Issues in Political Islam (3 cr.)
- POLS 5261 - Public Policy and Development (3 cr.)
- PSYC 5253 - Consultation to Non-Profit Organizations (3 cr.)
- SOC/ANTH 5201 - Classical Social Thought (3 cr.)
- SOC/ANTH 5230 - Theorizing the State (3 cr.)

Note

Students awarded the Diploma may apply for admission to the M.A. in Economics International Development.

School of Global Affairs and Public Policy

Department of Journalism & Mass Communication

Professors: R. Abdulla, H. Amin, S. Fahmy

Professors of Practice: F. Alatraqchi, K. Fox

Associate Professors: R. Allam (Department Chair), R. Close, N. Hamdy (Associate Dean for Research and Graduate Studies)

Associate Professors of Practice: N. Elsayed, K. Ezzelarab

Assistant Professors: Y. Bakr, H. Dinana

Cairo is not only the capital of the land that gave writing to civilization, but it is also the hub of mass communication for the entire Middle East.

The Journalism and Mass Communication department offers two undergraduate degree programs:

- Bachelor of Arts in Integrated Marketing Communication
- Bachelor of Arts in Multimedia Communication and Journalism

Minors

- Arabic Writing and Reporting Minor
- Journalism and Mass Communication Minor

Master of Arts

- Journalism and Mass Communication

Bachelor of Arts

Integrated Marketing Communication (B.A.)

Bachelor of Arts

Integrated Marketing Communication (IMC) is the integration of all marketing communication tools under one strategic communication focus. It takes all communication tools from working in isolation to complementing each other, with the objective of communicating one unified message from the organization (or the brand) to its target consumers. The objective of IMC is to manage all organizational communication in an integrated fashion and to build positive relationships between the organization on one hand and its customers and other stakeholders, such as employees, board members, the media, and society at large. Consistent with the mission of the School of Global Affairs and Public Policy our program/s encompass a number of interdisciplinary courses.

Students majoring in IMC gain skills and experience in all aspects of the marketing communication process through both theoretical learning and hands-on-experience. Components of the program include exposure to the fundamentals of strategic planning, media research, budgeting, creative

strategy, creative development, media planning, production, modern corporate image, branding, social responsibility, event marketing, sales promotions, direct marketing, and public relations.

Before declaring an IMC major, students must complete 24 credits of university coursework, complete RHET 1020 with a grade B or better, complete JRMC 2200 with a grade B or better, and pass an English Proficiency Test with a grade no less than 75% grade.

Admission to the IMC program is highly competitive and space is limited. Eligible students who meet the above requirements will be ranked and selected based on their cumulative grade point average (GPA).

MMCJ majors are not permitted to have a major in IMC. Students must complete a minimum of 120 credits for the Bachelor of Arts degree in IMC, of which no more than 72 credits can be in IMC, with another 48 of their total credit hours to be from outside of their major.

Core Curriculum (37 credits)

The remaining 3 credit hours required to satisfy the Core Curriculum are fulfilled by completing the major capstone course:

- JRMC 4425 - Integrated Marketing Communication Campaigns Capstone (3 cr.)

JRMC Core Requirements (18 credits)

- JRMC 2200 - Introduction to Mass Communication (3 cr.)
- JRMC 2201 - Media Writing (3 cr.)
- JRMC 2202 - Multimedia Writing and Production (3 cr.)
- JRMC 2203 - Mass Media Ethics and Responsibility (3 cr.)
- JRMC 2208 - Media Literacy in the Digital Age (3 cr.)
- JRMC 2270 - Online Communication (3 cr.)

IMC Concentration Requirements (42 credits)

- JRMC 3305 - Introduction to Visual Communication (3 cr.)
- JRMC 3315 - Introduction to Integrated Marketing Communication (3 cr.)
- JRMC 3320 - Mass Communication Research (3 cr.)
- JRMC 3355 - Creative Copywriting Strategies (3 cr.)
- JRMC 3366 - Online Behavior and Web Analytics (3 cr.)
- JRMC 3390 - Media Economics (3 cr.)
- JRMC 4405 - Advanced Visual Communication (3 cr.)

- JRMC 4406 - Internship (3 cr.)
- JRMC 4415 - Public Relations Theory and Techniques (3 cr.)
- JRMC 4425 - Integrated Marketing Communication Campaigns Capstone (3 cr.)
- JRMC 4430 - Advertising Agency Operations (3 cr.)
- JRMC 4441 - Camera and Editing Workshop (3 cr.)
- MKTG 2101 - Principles of Marketing (3 cr.)
- MKTG 3202 - Consumer-Buyer Behaviour (3 cr.)

IMC Electives (12 credits)

- DSGN 2260 - Production for Designers (3 cr.)
- DSGN 3117 - History of Advertising in the Arab World (3 cr.)
- DSGN 3265 - Advertising and Branding (3 cr.)
- ENTR 4503 - Digital Strategy (3 cr.)
- JRMC 2205 - Introduction to Arabic Writing and Reporting (3 cr.)
- JRMC 2230 - Photography Foundations 1 (3 cr.)
- JRMC 2250 - Global Media Systems (3 cr.)
- JRMC 2280 - Entertainment Media (3 cr.)
- JRMC 3303 - Data for Media (3 cr.)
- JRMC 3307 - Sports Media (3 cr.)
- JRMC 3310 - Public Opinion, Persuasion and Propaganda (3 cr.)
- JRMC 4420 - Media Management (3 cr.)
- JRMC 4444 - Media Law and Policy (3 cr.)

General Electives (11 credits)

Multimedia Communication and Journalism (B.A.)

Bachelor of Arts

The Multimedia Communication and Journalism (MMCJ) major converges the disciplines of traditional and new media into a single stream of theory and experiential pedagogy which empowers students and trains them to excel in the print, broadcast, and digital media industries.

The current MMCJ major equips students with the essential tools that enable them to become knowledgeable about contemporary theories and research issues, develop excellent writing skills, gain production and presentation skills, and graduate as critical thinkers, innovators and pioneers in the contemporary and transforming media industry.

The major stresses the essentials of media ethics, news gathering, research, audio and video production, writing for multi-platform delivery, with a particular emphasis on the instantaneous dissemination advantages of social media.

Students graduate fully ready to create content in the different media platforms.

Within the MMCJ major, students choose between two specializations: Communication and Journalism.

Before declaring an MMCJ major, students must complete 24 credits of university coursework, complete RHET 1020 with a grade B or better, complete JRMC 2200 with a grade B or better, and pass an English Proficiency Test with a grade no less than a 75%.

Admission to the MMCJ program is highly competitive and space is limited. Eligible students who meet the above requirements will be ranked and selected based on their cumulative grade point average (GPA).

MMCJ majors are not permitted to have a major in IMC. Students must complete a minimum of 120 credits for the Bachelor of Arts degree in MMCJ, of which no more than 72 credits can be in MMCJ, with another 48 of their total credit hours to be from outside of their major.

Core Curriculum (37 credits)

The remaining 3 credit hours required to satisfy the Core Curriculum are fulfilled by completing one of the major capstone courses from among the following based on the student's specialization:

- JRMC 4480 - Multimedia Reporting Capstone (3 cr.)
- JRMC 4482 - Media Convergence Capstone (3 cr.)

JRMC Core Requirements (18 credits)

- JRMC 2200 - Introduction to Mass Communication (3 cr.)
- JRMC 2201 - Media Writing (3 cr.)
- JRMC 2202 - Multimedia Writing and Production (3 cr.)
- JRMC 2203 - Mass Media Ethics and Responsibility (3 cr.)
- JRMC 2208 - Media Literacy in the Digital Age (3 cr.)
- JRMC 2270 - Online Communication (3 cr.)

MMCJ Concentration Requirements (36 credits)

- JRMC 2205 - Introduction to Arabic Writing and Reporting (3 cr.)
  Non-Arabic speaking international students may replace JRMC 2205 with an additional course from the list of specialization electives.
- JRMC 2230 - Photography Foundations 1 (3 cr.)
- JRMC 3303 - Data for Media (3 cr.)
- JRMC 3312 - Multimedia Journalism Lab: The Caravan (3 cr.)
- JRMC 3320 - Mass Communication Research (3 cr.)
- JRMC 3337 - TV Scriptwriting and Production (3 cr.)
- JRMC 3380 - Digital Storytelling (3 cr.)
- JRMC 4406 - Internship (3 cr.)
- JRMC 4420 - Media Management (3 cr.)
- JRMC 4441 - Camera and Editing Workshop (3 cr.)
- JRMC 4444 - Media Law and Policy (3 cr.)
- JRMC 4460 - Audio Production (3 cr.)

Capstone Course (3 credits)

Students are to choose one of the following Capstone courses based on the selection of specialization (3 credits):

- JRMC 4480 - Multimedia Reporting Capstone (3 cr.)
- JRMC 4482 - Media Convergence Capstone (3 cr.)

Specialization Electives (15 credits)

Students are required to choose either the Communication Specialization or the Journalism Specialization.

Communication Electives

Choose Five of the following courses:

- ENTR 4503 - Digital Strategy (3 cr.)
- JRMC 2250 - Global Media Systems (3 cr.)
- JRMC 2280 - Entertainment Media (3 cr.)
- JRMC 3305 - Introduction to Visual Communication (3 cr.)
- JRMC 3307 - Sports Media (3 cr.)
- JRMC 3310 - Public Opinion, Persuasion and Propaganda (3 cr.)
- JRMC 3339 - Studio Production: AUC TV (3 cr.)
- JRMC 3360 - Introduction to Podcasting (3 cr.)
- JRMC 3390 - Media Economics (3 cr.)

Journalism Electives

Choose Five of the following courses:

- JRMC 3305 - Introduction to Visual Communication (3 cr.)
- JRMC 3307 - Sports Media (3 cr.)
- JRMC 3330 - Photojournalism and Documentary Practices (3 cr.)
- JRMC 3333 - Research for Journalists (3 cr.)
- JRMC 3339 - Studio Production: AUC TV (3 cr.)
- JRMC 3360 - Introduction to Podcasting (3 cr.)
- JRMC 3390 - Media Economics (3 cr.)
- JRMC 4403 - Lifestyle Writing (3 cr.)
- JRMC 4412 - Newsroom Editing and Management (3 cr.)

General Electives (11 credits)

Minors

Arabic Writing and Reporting Minor

The Arabic Writing and Reporting Minor develops essential Arabic language skills appropriate to a variety of professional and community contexts, including journalism and mass media, the private sector,governmental and non-governmental organizations, universities and institutes of higher education, creative writing and indeed all other public pursuits in Arabic speaking countries and communities.

The minor has two tracks (1) Arabic Reporting Skills and (2) Arabic Writing Skills

Track 1. Arabic Reporting Skills

Requirements (18 credits):

Prerequisites: Students must take ALWT 2271 from Reading to Writing: Intermediate Level (3 cr.) and ALWT 3271 from Reading to Writing: High Intermediate Level (3 cr.) or be exempted from those classes by performing well on the Arabic placement exam administrated every semester by the Department of Arabic Language Instruction.

Students shall take six courses for a total of 18 credits:

Core Courses (15 credits):

- ALWT 4271 - From Reading to Writing: Advanced Level (3 cr.)
- JRMC 2200 - Introduction to Mass Communication (3 cr.)
- JRMC 2205 - Introduction to Arabic Writing and Reporting (3 cr.)
- JRMC 3312 - Multimedia Journalism Lab: The Caravan (3 cr.)
- JRMC 4412 - Newsroom Editing and Management (3 cr.)

Elective Courses (one of the following):

- ALWT 4272 - Arabic Language Proficiency for Media Writing (3 cr.)
- ALWT 5271 - Professional Arabic TV Script Writing (3 cr.)

Track 2. Arabic Writing Skills

Requirements (18 credits):

Prerequisites: Students must take ALWT 2271 from Reading to Writing: Intermediate Level (3cr.) and ALWT 3271 from Reading to Writing: High Intermediate Level (3cr.) or be exempted from those classes by performing well on the Arabic placement exam administrated every semester by the Department of Arabic Language Instruction.

Students shall take six courses for a total of 18 credits:

Core Course:

ALWT 4271 - From Reading to Writing: Advanced Level (3 cr.)

Five (5) elective courses from the following list:

- AIAS 5991 - Selected Topics in Arabic (3 cr.)
- ALNG 2010 - Current Issues and Egyptian Society (3 cr. per semester)
- ALWT 3271 - The Traveler: Exploring the Arab World Today - High Intermediate Level (3 cr.)
- ALWT 3919 - El Ard Bititkallim 'Arabi; Know Thy World in Arabic (3 cr.)
- ALWT 4272 - Arabic Language Proficiency for Media Writing (3 cr.)
- APLN 5102 - The Linguistics of Arabic (3 cr.)
- ARIC 5110 - Senior Seminar in Arabic Texts (3 cr.)
- JRMC 2205 - Introduction to Arabic Writing and Reporting (3 cr.)

Journalism and Mass Communication Minor

The study of journalism and mass communication provides the student with a basic exposure to news gathering and reporting skills, multi-media writing skills and other mass media cultures. Students who have completed JRMC 2200 and RHET 1010 and who meet the grade point average (GPA) requirement of 3.4 are encouraged to apply for the minor before their junior year.

Requirements (18 credits):

- JRMC 2200 - Introduction to Mass Communication (3 cr.)
- JRMC 2201 - Media Writing (3 cr.)

And one of the following:

- JRMC 2202 - Multimedia Writing and Production (3 cr.)
- JRMC 2203 - Mass Media Ethics and Responsibility (3 cr.)
- JRMC 2250 - Global Media Systems (3 cr.)

Additional Requirements:

Three additional courses at the 3000 level or above (provided that prerequisites are completed). Courses not included are JRMC 4406 - Internship (3 cr.) and JRMC 4499 - Directed Individual Study in Mass Communication (1-3 cr.) and Capstone Courses JRMC 4480 , JRMC 4482 and JRMC 4425 and MTKG courses.

Master of Arts

Journalism and Mass Communication (M.A.)

Master of Arts

The Master of Arts program in journalism and mass communication is designed to provide intellectual growth and advanced training for persons already engaged in mass media or public information work. Students wishing to specialize in a particular area, such as marketing communication or international business journalism, sociological or political communication, are encouraged to design a sequence of elective courses that best meets their interests.

Admission

Students are required to have a minimum grade point average (GPA) of 3.00 (on a 4.00 scale) on an undergraduate degree from an accredited college or university. For students who have been out of school for some time, work experience or other relevant criteria may be considered in lieu of a lower than 3.0 GPA. Students with a cumulative GPA below 3.0 in their bachelor's degree may

still be considered for provisional admission and should provide an explanation of extenuating circumstances and/or a demonstration of outstanding work experience.

Any applicant who does not have an undergraduate degree in mass communication from an accredited university or whose bachelor's degree is in a discipline other than journalism and mass communication will be provisionally admitted but will be required to take a set of pre-requisite courses (up to three courses). Students must complete these courses with grades of B or higher before enrolling in any 5000-level courses.

Students are also required to submit two recommendation letters from relevant, credible sources and a personal statement of purpose. The statement of purpose will be evaluated for clarity of expression, creativity, and persuasiveness in arguing that:

- The applicant has the necessary record of preparation and performance to succeed in the program.
- The applicant's goals can be served by the program's courses and experiences.
- The program itself can benefit from the applicant's experiences.

Applicants are also required to submit an updated curriculum vitae, official transcripts of all university degrees, and samples of professionally published or broadcast work if available.

An academic writing sample (in English) that demonstrates the potential to write clearly and critically is also required. If the student has graduated within the last three years, an academic paper from the undergraduate (or M.A.) coursework will suffice. Examples of academic writing samples include a term paper, a chapter from an Honors or M.A. thesis, or a conference paper. Students who graduated more than three years prior to their application to the program should include an essay of 500-700 words about a recent local, regional, or international communication issue that he/she deems important. The essay should demonstrate clarity of thinking, updated knowledge of the field, and the ability to use academic sources efficiently. Please note that newspaper or trade magazine articles, biogs, TV scripts, links to videos, etc., do not count as academic writing samples.

All applicants must attend an interview in person before any decision is made.

Admission Checklist:

- Official transcripts
- Proof of English language proficiency
- Two letters of recommendation
- Personal statement
- Curriculum vitae

- Samples of published/broadcast work
- Academic writing sample

Master of Arts Requirments (33 credits)

The minimum number of credit hours required to obtain a master degree in journalism and mass communication is 33 credit hours distributed
as follows:

- 27 credit hours for academic courses
- 6 credit hours of thesis.

Core Courses (12 credits)

Students are required to successfully complete the following four core courses. The core courses should be taken as early after admission to the program as possible.

- JRMC 5200 - Seminar in Mass Communication Theory and Literature (3 cr.)
- JRMC 5202 - Seminar: Current Issues in Mass Communication (3 cr.)
- JRMC 5204 - Quantitative Research Methods in Mass Communication (3 cr.)
- JRMC 5205 - Qualitative Research Methods in Mass Communication (3 cr.)

Additional Requirements (15 credits)

Additional coursework should be selected from the following list of Master of Arts courses, or because of the interdisciplinary scope of mass communication, students may, with adviser approval, take and apply up to three 5000-level courses (9 hours) from other disciplines. A maximum of six credit hours of 4000-level coursework may be approved and counted toward the required credit hours.

- JRMC 5250 - Seminar in International Communication (3 cr.)
- JRMC 5270 - Seminar in Mass Communication and National Development (3 cr.)
- JRMC 5271 - Digital Journalism (3 cr.)
- JRMC 5280 - Television and Digital Broadcasting: Impact and Development (3 cr.)
- JRMC 5290 - Special Topics (3 cr.)

Thesis (6 credits)

In order for a master's student to embark on his/her thesis work, the student must register for the JRMC 5299 Research Guidance and Thesis course over a full academic year (Fall and Spring semesters).

Department of Law

Acting chair: A. Erfan

Associate Professors: J. Beckett, H. Sayed, A. Shalakany, T. Skouteris

Master of Arts

International Human Rights Law (M.A.)

International Human Rights Law considers protection of the individual as developed through organs of the United Nations, other international institutions, and at regional and domestic levels in the North and in the South. The program seeks to give students a thorough grounding in the theoretical underpinnings of human rights law and in the methods of solid multidisciplinary research that are required for investigating legal issues pertaining to human rights. It is intended for those presently working, or desiring to work, in humanitarian organizations, in government departments and agencies concerned with humanitarian issues, or in other public, private and international sectors where there is increasingly a need for persons who have an understanding of the law and legal consequences of human rights within an international framework.

It is possible to work towards the MA in International Human Rights Law and the Diploma in Migration and Refugee Studies simultaneously or sequentially, and to cross count 3 courses (9 credits) with the advice and consent of the department for a total of twelve courses to complete both degrees (see Dual Graduate Degrees under Academic Requirements and Regulations section).

Admission

The applicant for admission to the MA program should have an acceptable bachelor's degree in law, political science or a closely related social science (preferably with a minor in political science or law studies) with a grade of gayyid giddan (very good) or a grade point average of 3.0. Applicants with deficiencies in their preparation may be required to take appropriate courses at the undergraduate level. English language proficiency is required as per general AUC graduate admission requirements. Admitted degree candidates should normally start their course sequence in the fall semester. Students enrolled in the AUC English Language Institute must complete all ELI courses and modules before being allowed to enroll in law classes. For these students, spring enrollment is allowed.

Equivalency

AUC's International Human Rights Law (M.A.) has the equivalence of a Master in Law from the Supreme Council of Universities in Egypt only for graduates who hold an undergraduate law degree from an Egyptian law school or an equivalent degree.

Course Requirements

The International Human Rights Law MA degree requires a total of 27 credits hours.

There are four required courses:

- LAW 5232 - International Law (3 cr.)
- LAW 5273 - Introduction to International Human Rights Law and Critique (3 cr.)
- LAW 5298 - Graduate Law Seminar (3 cr.)

one out of the following three courses:

- LAW 5134 - International Humanitarian Law (3 cr.)
- LAW 5175 - Human Rights in the Middle East (3 cr.)
- LAW 5176 - Economic, Social, and Cultural Rights (3 cr.)

The remaining five courses are electives, two of which have to be law courses.
Department approval is required for electives offered by other departments.

Thesis Requirements

The research requirement for the MA in International Human Rights Law is satisfied by writing a thesis of sufficient depth and length for the topic addressed therein and prepared under the supervision of a faculty member of the department. Students are required to register for the following course while fulfilling their thesis requirement.

- LAW 5299 - Research Guidance/Thesis (no cr., pass/fail)

Degree Time Framework

Fulfilling the M.A. in International Human Rights Law normally calls for two years of study.

Dual Degree Option in Political Science (B.A.) and International Human Rights Law (M.A.)

The Dual Degree option combines a BA in Political Science and an MA in International Human Rights Law. It is a dual degree, creating a synergy between the existing BA in Political Science and the existing MA in International Human Rights Law.

The dual degree option enables good students to prepare for a postgraduate degree while completing the requirements for the BA in Political Science. The MA degree provides students with the necessary expertise in international human rights law and with the intellectual, analytical and communication tools needed to intervene critically and effectively in the global policy debates confronting their societies as policy makers, academics, activists and international civil servants.

By the end of the sixth semester of the political science BA at AUC, and after successfully completing POLS 4371 , the student has to declare her/his intention to pursue the Dual Degree by submitting a graduate admission application. The student should follow the application procedures for graduate studies. Admission decisions will be made by the Law Department's Admission Committee. Successful applicants will be admitted pending the fulfillment of two conditions: i) finishing the requirements of their undergraduate degrees with at least B (GPA 3); and ii) obtaining an average of at least a B+ (GPA of at least 3.3) across the three cross-listed 'Dual Degree' Law courses. Places are limited.

Students enrolled in the dual degree will receive a political science BA degree certificate upon the completion of their undergraduate course requirements.

Under this structure, dual-degree students will be required to take three 4000-level courses that are cross-listed under LAW and POLS. These three "Dual Degree" cross-listed courses (see below) will count for credit towards both the BA in Political Science and under the MA in International Human Rights Law.

The three 'Dual Degree' Law courses to be offered to undergraduates in the Political Science Department are the following: (a) POLS 4371 - Introduction to Public International Law (3 cr.) (b) POLS 4375 - Introduction to Egyptian and Islamic Law (3 cr.) and (c) POLS 4378 - Introduction to International Human Rights Law (3 cr.)

The curriculum for the MA IHRL requires the completion of nine courses and a thesis, as indicated in the tentative plan below: 3 POLS/LAW undergraduate courses, a choice of 1 of the following three: a graduate regional human rights, an economic social and cultural rights or an international humanitarian law course, 4 graduate elective courses, the Graduate Law Seminar, and the thesis.

Tentative Plan for Full-time Students

SEMESTER VI (POLS undergraduate program)

POLS 4371 - Introduction to Public International Law (3 cr.) (counts towards both concentrations in POLS for all students) (and MA IHRL credits)
[4 POLS courses or other courses as required to complete POLS BA degree]

SEMESTER VII (POLS undergraduate program)

POLS 4378 - Introduction to International Human Rights Law (3 cr.) (counts towards both BA POLS and MA IHRL credits)
[4 POLS courses or other core courses as required to complete POLS BA degree]

SEMESTER VIII (POLS undergraduate program)

POLS 4375 - Introduction to Egyptian and Islamic Law (3 cr.) (counts towards both BA POLS and MA IHRL credits)
[4 POLS courses or other core courses as required to complete POLS BA degree]

SEMESTER IX (MA IHRL program)

LAW 5134 - International Humanitarian Law (3 cr.)*

LAW 5175 - Human Rights in the Middle East (3 cr.)*

LAW 5176 - Economic, Social, and Cultural Rights (3 cr.)*

*(1 out of 3 starred courses required)

LAW electives (other 5000 level LAW courses approved by the department).

A maximum of two external (non-LAW) 5000-level courses may be taken in addition to two LAW electives. This option requires explicit approval from the Chair of the Law Department.

SEMESTER X (MA IHRL program)

LAW 5298 - Graduate Law Seminar (3 cr.)

LAW electives (other 5000 level LAW courses approved by the department).

A maximum of two external (non-LAW) 5000-level courses may be taken in addition to two LAW electives. This option requires explicit approval from the Chair of the Law Department.

SEMESTER XI (MA IHRL program)

LAW 5299 - Research Guidance/Thesis (no cr., pass/fail)

Master of Laws (LL.M.) in International and Comparative Law

International and Comparative Law (LL.M.)

The Ibrahim Shihata Memorial LL.M Program in International and Comparative Law

Dr. Ibrahim Shihata, in whose memory this LL.M has been established, made significant contributions to the development of international economic law. In addition to his positions of Senior Vice President and General Counsel with the World Bank, Dr. Shihata also served as Secretary-General of the International Center for the Settlement of Investment Disputes; he was principal architect of the Multilateral Investment Guarantee Agency (MIGA); and he was responsible for the World Bank Guidelines for the Legal Treatment of Foreign Investments. Other positions included first Director General of the OPEC Fund for Economic Development and General Counsel of the Kuwait Fund. He was instrumental in establishing the Inter-Arab Investment Guarantee Agency, and he was the founder of the International Development Law Institute in Rome. Indeed the entire career of Dr. Shihata was devoted to the infrastructures that assisted development. The LL.M program itself, as well as individual courses, are directly concerned with law and development. In Dr. Shihata's words: "Law, as the formal instrument of orderly change in society, plays a pivotal role, even though this role has not always been readily recognized."

The Master of Laws (LL.M) Degree in International and Comparative Law is intended for law school graduates who seek to acquire the intellectual and analytical tools to intervene critically and effectively in the global policy debates confronting their societies, as policy makers, practicing lawyers, judges, academics, activists or international civil servants. In the context of constantly changing global economic and political realities, and the crumbling of old regulatory models, the degree is designed to empower students to adapt, innovate and gain mastery over this field of knowledge.

The Master of Laws (LL.M.) Degree in International and Comparative Law offers a wide range of courses designed to provide students with the intellectual tools to promote and critically assess economic, social, and legal developments. The curriculum is flexible and allows students to pursue advanced studies in specialized areas (e.g., business regulation, Islamic law and Middle Eastern legal systems, gender studies, and international human rights law). LL.M. students have an invaluable opportunity to benefit from the multidisciplinary offerings of the School of Global Affairs and Public Policy (GAPP). Fulfilling the requirements of the LL.M. degree normally calls for two years of study.

Admission

The Applicant for admission to the LL.M degree should have an acceptable bachelor's degree in law, political science or a closely related social science (preferably with a minor in political science or law studies) with a grade of gayyid (good) or its equivalent for full admission. Students lacking the grade requirement may be eligible to be considered for provisional admission (as specified in

the AUC catalog supra). Acceptance is by decision of the Law Faculty Committee, which may grant provisional admission pending the fulfillment of certain conditions. English language proficiency is required as per general AUC graduate admission requirements. Admitted degree candidates should normally start their course sequence in the fall semester. Students enrolled in the AUC English Language Institute must complete all ELI Courses and modules before being allowed to enroll in law classes. For these students, spring enrollment is allowed.

Equivalency

AUC's LL.M in International and Comparative Law has the equivalence of a Master in Law from the Supreme Council of Universities in Egypt only for graduates who hold an undergraduate law degree from an Egyptian law school or an equivalent degree.

Requirements

The LL.M degree requires nine courses (27 credits hours) as well as a thesis of sufficient depth and length as specified below.

Four courses are required:

- LAW 5200 - Graduate Legal Research and Writing (3 cr.)
- LAW 5298 - Graduate Law Seminar (3 cr.)

Two out of the following three courses:

- LAW 5229 - Advanced Jurisprudence (3 cr.)
- LAW 5230 - Comparative Law (3 cr.)
- LAW 5232 - International Law (3 cr.)

Electives

Students will be able to take up to five courses as electives, three of which have to be law courses. The Law Department's approval is required for electives offered by other departments.

Thesis Requirements

The research requirement for the LL.M. is satisfied by writing a thesis of sufficient depth and length for the topic addressed therein and prepared under the supervision of a faculty member of the department. Students are required to register for the following course while fulfilling their thesis requirement.

- LAW 5299 - Research Guidance/Thesis (no cr., pass/fail)

Graduate Diploma

International and Comparative Law (Graduate Diploma)

The Graduate Diploma in International and Comparative Law is intended for law school graduates seeking to update their knowledge in international and comparative law and to acquire the intellectual tools to advance academically and professionally. The Graduate Diploma in International and Comparative Law offers the possibility to explore in depth a range of topics in international and comparative law. With a flexible curriculum, students may shape their schedules to focus on the topics of their interest. The fulfillment of the requirements of the Graduate Diploma, normally calls for two semesters of study.

Admission

The applicant for admission to the Graduate Diploma in International and Comparative Law should have an acceptable bachelor's degree in law, political science or a closely related social science (preferably with a minor in political science or law studies) with a grade of gayyid (good) or its equivalent for full admission. Students lacking the grade requirement may be eligible to be considered for provisional admission (as specified in the AUC catalog supra). Acceptance is by decision of the Law Faculty Committee, which may grant provisional admission pending the fulfillment of certain conditions. English language proficiency is required as per general AUC graduate admission requirements. Admitted degree candidates should normally start their course sequence in the fall semester. Students enrolled in the AUC English Language Institute must complete all ELI Courses and modules before being allowed to enroll in Law Classes. For these students, spring enrollment is allowed.

Following admission to the Diploma in International and Comparative Law, students may apply for admission to the LLM program in International and Comparative Law. As a minimum enabling condition, students need to achieve a B+ grade average at the end of their Diploma studies. The application may be submitted at the end of the fulfillment of the Diploma requirements. If the application is successful, credits earned during the diploma will count towards the LLM, given that the Diploma curriculum is identical with the curriculum of the first year of the LLM program. Upon completion of the LLM requirements the student will receive only the LLM degree and therefore not the Diploma.

Requirements

The Graduate Diploma requires 18 credit hours.

Two courses are required:

LAW 5200 - Graduate Legal Research and Writing (3 cr.)

One out of the following two courses:

LAW 5230 - Comparative Law (3 cr.)

LAW 5232 - International Law (3 cr.)

Electives

Students will be able to take up to four courses as electives, of which two have to be law courses. The Law Department's approval is required for electives offered by other departments.

International Human Rights Law (Graduate Diploma)

The Graduate Diploma in International Human Rights Law is intended for graduate students seeking to update their knowledge in human rights law and to acquire the intellectual tools to advance academically and professionally. The Graduate Diploma in International Human Rights Law offers the possibility to explore in depth a range of topics in human rights and humanitarian law. With a flexible curriculum, students may shape their schedules to focus on the topics of their interest.

Degree Time Framework

Fulfilling the Graduate Diploma in International Human Rights Law normally calls for one year of study.

Admission

The applicant for admission to the IHRL diploma should have an acceptable bachelor's degree in law, political science or a closely related social science (preferably with a minor in political science or legal studies) with a grade of gayyid giddan (very good) or a grade point average of 3.0. Applicants with deficiencies in their preparation may be required to take appropriate courses at the undergraduate level. English language proficiency is required as per general AUC graduate admission requirements. Admitted degree candidates should normally start their course sequence in the fall semester. Students enrolled in the AUC English Language Institute must complete all ELI courses and modules before being allowed to enroll in law classes. For these students, spring enrollment is allowed.

Following admission to the Diploma in International Human Rights Law, students may apply for admission to the MA degree in International Human Rights Law. As a minimum enabling condition, students need to achieve a B+ grade average at the end of their Diploma studies. The

application may be submitted following fulfillment of the Diploma requirements. If the application is successful, credits earned during the Diploma will count towards the MA, given that the Diploma curriculum is identical with the curriculum of the first year of the MA program. Upon completion of the MA requirements the student will receive only the MA Degree and therefore not the Diploma.

Requirements

The Graduate Diploma requires 18 credit hours.

There are three required courses:

- LAW 5232 - International Law (3 cr.)
- LAW 5273 - Introduction to International Human Rights Law and Critique (3 cr.)

And one out of the following three courses:

- LAW 5134 - International Humanitarian Law (3 cr.)
- LAW 5175 - Human Rights in the Middle East (3 cr.)
- LAW 5176 - Economic, Social, and Cultural Rights (3 cr.)

Electives

The remaining three courses are electives, one of which has to be a law course. The Law Department's approval is required for electives offered by other departments.

Dual Degree Programs

Political Science (B.A.) and International Human Rights Law (M.A.)

Dual Degree Option in Political Science (B.A.) and International Human Rights Law (M.A.)

The Dual Degree option combines a BA in Political Science and an MA in International Human Rights Law. It is a dual degree, creating a synergy between the existing BA in Political Science and the existing MA in International Human Rights Law.

The dual degree option enables good students to prepare for a postgraduate degree while completing the requirements for the BA in Political Science. The MA degree provides students with the necessary expertise in international human rights law and with the intellectual, analytical and communication tools needed to intervene critically and effectively in the global policy

debates confronting their societies as policy makers, academics, activists and international civil servants.

By the end of the sixth semester of the political science BA at AUC, and after successfully completing POLS 4371 , the student has to declare her/his intention to pursue the Dual Degree by submitting a graduate admission application. The student should follow the application procedures for graduate studies. Admission decisions will be made by the Law Department's Admission Committee. Successful applicants will be admitted pending the fulfillment of two conditions: i) finishing the requirements of their undergraduate degrees with at least B (GPA 3); and ii) obtaining an average of at least a B+ (GPA of at least 3.3) across the three cross-listed 'Dual Degree' Law courses. Places are limited.

Students enrolled in the dual degree will receive a political science BA degree certificate upon the completion of their undergraduate course requirements.

Under this structure, dual-degree students will be required to take three 4000-level courses that are cross-listed under LAW and POLS. These three "Dual Degree" cross-listed courses (see below) will count for credit towards both the BA in Political Science and under the MA in International Human Rights Law.

The three 'Dual Degree' Law courses to be offered to undergraduates in the Political Science Department are the following: (a) POLS 4371 - Introduction to Public International Law (3 cr.) (b) POLS 4375 - Introduction to Egyptian and Islamic Law (3 cr.) and (c) POLS 4378 - Introduction to International Human Rights Law (3 cr.)

The curriculum for the MA IHRL requires the completion of nine courses and a thesis, as indicated in the tentative plan below: 3 POLS/LAW undergraduate courses, a choice of 1 of the following three: a graduate regional human rights, an economic social and cultural rights or an international humanitarian law course, 4 graduate elective courses, the Graduate Law Seminar, and the thesis.

Tentative Plan for Full-time Students

SEMESTER VI (POLS undergraduate program)

POLS 4371 - Introduction to Public International Law (3 cr.) (counts towards both concentrations in POLS for all students) (and MA IHRL credits)
[4 POLS courses or other courses as required to complete POLS BA degree]

SEMESTER VII (POLS undergraduate program)

POLS 4378 - Introduction to International Human Rights Law (3 cr.) (counts towards both BA POLS and MA IHRL credits)
[4 POLS courses or other core courses as required to complete POLS BA degree]

SEMESTER VIII (POLS undergraduate program)

POLS 4375 - Introduction to Egyptian and Islamic Law (3 cr.) (counts towards both BA POLS and MA IHRL credits)
[4 POLS courses or other core courses as required to complete POLS BA degree]

SEMESTER IX (MA IHRL program)

LAW 5134 - International Humanitarian Law (3 cr.)*

LAW 5175 - Human Rights in the Middle East (3 cr.)*

LAW 5176 - Economic, Social, and Cultural Rights (3 cr.)*

*(1 out of 3 starred courses required)

LAW electives (other 5000 level LAW courses approved by the department).

A maximum of two external (non-LAW) 5000-level courses may be taken in addition to two LAW electives. This option requires explicit approval from the Chair of the Law Department.

SEMESTER X (MA IHRL program)

LAW 5298 - Graduate Law Seminar (3 cr.)

LAW electives (other 5000 level LAW courses approved by the department).

A maximum of two external (non-LAW) 5000-level courses may be taken in addition to two LAW electives. This option requires explicit approval from the Chair of the Law Department.

SEMESTER XI (MA IHRL program)

LAW 5299 - Research Guidance/Thesis (no cr., pass/fail)

Department of Public Policy and Administration

Dean Emeriti: N. Fahmy

Professors: G. Barsoum (Chair), S. Bhuiyan

Assistant Professor: R. Hendy

Professors of the Practice: A. Erfan, I. Awad

Undergraduate

The mission of the Public Policy and Administration Department is to support evidence-based policy-making, effective and efficient administration of government and non-profit organizations, and better public governance in Egypt and the Middle East by preparing professionals for careers in public service, conducting policy-relevant research, and promoting dialog on issues of public importance. The PPAD Department builds a culture of leadership and service among its graduates and is dedicated to making significant contributions to Egypt and the international community through public service in diverse institutional settings. Students interested in pursuing a career of public service or those interested in public policy and management are encouraged to explore PPAD's course offerings, shown below. Seniors may also request enrollment in PPAD graduate courses.

Graduate

The objective of the PPAD Department is to equip future leaders with the conceptual framework and the specific skills needed to be effective and innovative policy makers and administrators in various spheres of governance within governmental, regional, international and multinational institutions through structured course work, internship and research that explores public policy and administration challenges in the region and globally and their possible solutions.

Minors

Global and Public Affairs Minor

Offered by the Public Policy and Administration Department, the minor in Global and Public Affairs is designed to give undergraduate students a deeper appreciation of the challenges in organizing the state and public management in a global context. The minor introduces students to the conduct of government and diplomacy, learning about policy and how it is made, implemented, and evaluated, including role of different institutions and actors in shaping policy outcomes. Students are introduced to public management issues in nonprofit and government agencies, including setting strategies, developing operational plans, and managing human and financial resources to achieve desired outcome. The program is designed to prepare students for a broad range of careers that are focused on the resolution of public issues in government, the non-profit sector and global intergovernmental organizations.

The Minor is open to all undergraduate students from different majors with no minimum grades or certain GPA. Students who wish to pursue the GPA minor can declare it at any point of their undergraduate studies. Advising for the minor is provided by the undergraduate advisors in Public Policy and Administration Department.

Required Courses (9 credits)

PPAD 2096 - Selected Topics for the Core Curriculum (3 cr.) - Core Curriculum - Secondary Level

PPAD 3198 - Management in Government (3 cr.) - Core Curriculum- Secondary Level

PPAD 4111 - Fundamentals of Public Policy and Administration (3 cr.)

Elective Courses (6 credits)

PPAD 4113 - Selected Topics in Global and Public Affairs (3 cr.)

PPAD 5124 - Leadership and Communication for Public Affairs (3 cr.)

PPAD 5161 - Diplomacy: Theory and Practice (3 cr.) - Core Curriculum - Capstone

PPAD 5174 - Internship in Public and Non-Profit Organizations (3 cr.)

The above mentioned PPAD graduate courses cannot be double counted for students pursuing a PPAD graduate degree.

Master of Global Affairs

Global Affairs, with concentrations in International and Regional Security and International Cooperation in the Global System (MGA)

The Master of Global Affairs (MGA) is administered by the Department of Public Policy and Administration in the School of Global Affairs and Public Policy. The program prepares students for leadership and responsibility positions in the conduct of global affairs and public policy in governments and international and regional multilateral agencies as well as in business and civil society organizations. It is expected that students will be drawn from and/or employed in mid-career positions in institutions working in global affairs or demonstrate promise for such careers, based on their commitment and their academic and professional background.
The MGA program aims to provide students with knowledge and professional skills required for the functioning of the global system in an inclusive manner at the international and national levels, combining conceptual understanding with analytic skills and knowledge of global affairs. Through this program, students will gain the capability to participate effectively in the formulation and implementation of policies in their own countries and in supporting, guiding, and monitoring

action on global affairs at the multilateral level. Ultimately, both their own countries and the global system should benefit from the knowledge acquired.
Admission
All applicants must satisfy the university's graduate admission requirements. Candidates for the MGA are recommended but not required to have two or more years of relevant professional experience.

Courses (33 credit hours)
Students seeking the degree of Master of Global Affairs must complete 33 credit hours of coursework plus a master's project. The program core, required of all students, consists of 6 courses (18 credits). Students must also complete a concentration of 5 courses (15 credits). Students may elect either the concentration in International Security or the concentration in International Cooperation. Students are required to declare their concentration before beginning their second semester of enrollment in the program. In addition to coursework, students must complete a master's project consistent with department and university guidelines.

Core Requirement (18 credit hours):

Students must complete four (4) courses in group 1, two (2) course in group 2

Group 1: Complete all four (4) of the following:

- PPAD 5151 - Issues in International Security (3 cr.)
- PPAD 5201 - Research Methods for Public Policy and Administration (3 cr.)
- PPAD 5251 - International Organization in Global Governance (3 cr.)
- PPAD 5252 - Theory and Practice of Negotiation (3 cr.)

Group 2: Complete two of the following:

- LAW 5232 - International Law (3 cr.)
- PPAD 5111 - Essentials of Public Policy and Administration (3 cr.)
- PPAD 5129 - Globalization and Development (3 cr.)
- PPAD 5161 - Diplomacy: Theory and Practice (3 cr.)
- PPAD 5211 - Qualitative Analysis for Policy and Administration (3 cr.)
- PPAD 5212 - Applied Quantitative Analysis (3 cr.)
- PPAD 5225 - Regionalism and Regional Integration (3 cr.)

Concentration Requirement (15 credit hours):

Students must complete 5 courses in one of the following two areas. In addition to the courses shown for each concentration, students may select a course from the core list shown above as a Group 2 concentration course, if not taken as a core course (i.e., a course may be counted toward only one requirement) or, with advisor approval, may substitute an appropriate offering of PPAD 5199 - Special Topics in Public Policy and Administration (1-3 cr.), or Complete two (2) additional relevant courses (other than PPAD 5298 and PPAD 5299 ; selected in consultation with departmental advisor.

MGA Concentration 1: International and Regional Security

5 courses (15 credits) required

Group 1: Required for all students in the concentration

- PPAD 5152 - Conflict Prevention and Resolution (3 cr.)
- PPAD 5154 - Contemporary Security Issues in the Middle East (3 cr.)
- PPAD 5258 - Role of Force: Strategy and Statecraft (3 cr.)

Group 2: Complete two of the following:

- MRS 5202 - Migration & Refugee Movements in the Middle East and North Africa (3 cr.)
- MRS 5203 - International Migration and Development (3 cr.)
- POLS 5254 - Comparative Foreign Policy: Theories and Applications (3 cr.)
- PPAD 5129 - Globalization and Development (3 cr.)
- PPAD 5153 - Armament, Arms Control and Disarmament (3 cr.)
- PPAD 5198 - Practicum (3 cr.)
- PPAD 5199 - Special Topics in Public Policy and Administration (1-3 cr.)
- PPAD 5225 - Regionalism and Regional Integration (3 cr.)

MGA Concentration 2: International Cooperation in the Global System

5 courses (15 credits) required

Group 1: Required for all students in concentration

- PPAD 5155 - Governance of the Global Economy (3 cr.)
- PPAD 5156 - Multilateral and Bilateral Cooperation for Development (3 cr.)
- PPAD 5225 - Regionalism and Regional Integration (3 cr.)

Group 2: Complete two of the following:

- MRS 5203 - International Migration and Development (3 cr.)
- POLS 5261 - Public Policy and Development (3 cr.)
- PPAD 5132 - Social and Environmental Policy (3 cr.)
- PPAD 5133 - Global Health Issues and Policies (3 cr.)
- PPAD 5165 - Program Evaluation (3 cr.)
- PPAD 5198 - Practicum (3 cr.)
- PPAD 5199 - Special Topics in Public Policy and Administration (1-3 cr.)
- PPAD 5231 - Economics for Public Policy Analysis (3 cr.)

Capstone Project

Students must complete a capstone project that addresses an issue or a challenge in global affairs with relevance to their concentration. The project should be directed towards an external client engaged in this issue. If a member of the client's staff is not available, the client role may be performed by an alternate designated by the department. The preparation of the capstone project plan and final report must comply with departmental guidelines with regard to client involvement, content, format, and dates. Once the project plan is approved by the supervisor and/ or the client , the student will enrol in PPAD 5293, the capstone project, where they will complete the necessary components per the departmental guidelines and client's specification. The capstone project may be completed as a group or individual project with client and faculty permission.

Master of Public Administration (MPA)

Master of Public Administration (MPA)

Master of Public Administration

The Master of Public Administration (MPA) is triple accredited by the Network of Schools of Public Policy, Affairs and Administration (NASPAA); the European Association for Public Administration Accreditation (EAPAA); and the International Commission on the Accreditation of Public Administration Education and Training (ICAPA). The Master of Public Administration is administered by the Public Policy and Administration Department at the School of Global Affairs and Public Policy. The program prepares students for leadership and upper management positions in public service. Gradutes generally pursue careers in government, nonprofit organizations, international development agencies, academia, and the private sector.

The Master of Public Administration is recognized by the Supreme Council of Universities (SCU) as an academic master's degree for the students who write a thesis on some aspect of public administration relevant to their concentration. Students who do not wish to write a thesis and

pursue the non-thesis track will have their degree recognized by the SCU as a professional master's degree.

Program objectives

The mission of the MPA Program is to prepare leaders for careers in public service in Egypt and the Middle East. The program emphasizes qualities that lead to effective, efficient and responsive administration of government and nonprofit organizations with the highest ethical standards. Students learn the theory and practice of public administration and ideals for public values.

Admission

All applicants must satisfy the university's graduate admission requirements. Candidates for the MPA or DPA are recommended but not required to have two or more years of relevant professional experience.

Courses (36 credit hours)

Students seeking the degree of Master of Public Administration must complete 36 credit hours including a thesis preparation course (PPAD 5298) or 36 credit hours plus a comprehensive examination. The program core, required of all students, consists of 6 courses (18 credits). Students must complete a concentration of 5 courses (15 credits). Students writing a thesis, consistent with department and university guidelines, will enroll in Research Seminar (PPAD 5298) and subsequently in PPAD 5299 if they do not complete during their enrollment in PPAD 5298. Students in the non-thesis track will need to complete 36 credit hours (not including PPAD 5298) and register for the Comprehensive Examination.

Core Requirement (18 credit hours)

Students must complete 6 courses in total under the Core requirements.

Group 1: Complete all the following five courses:

- PPAD 5111 - Essentials of Public Policy and Administration (3 cr.)
- PPAD 5201 - Research Methods for Public Policy and Administration (3 cr.)
- PPAD 5221 - Strategic Management for Government and Nonprofit Organizations (3 cr.)
- PPAD 5222 - Fundamentals of Financial Planning and Management for Government and Nonprofit Organizations (3 cr.)
- PPAD 5224 - Human Resource Management for Government and Nonprofit Organizations (3 cr.)

Group 2: Complete one of the following:

- PPAD 5211 - Qualitative Analysis for Policy and Administration (3 cr.)
- PPAD 5212 - Applied Quantitative Analysis (3 cr.)

Concentration Requirement (15 credit hours)

Students must complete 5 courses in one of the concentrations below. Students may substitute up to two courses for those shown in a concentration with permission of the department.

Concentration One: Nonprofit Management - 5 courses (15 credits) required

Group 1: Complete three of the following courses (including PPAD 5126 - Managing NGOs in Developing and Transitional Countries (3 cr.)):

- PPAD 5114 - Management of Development Programs (3 cr.)
- PPAD 5126 - Managing NGOs in Developing and Transitional Countries (3 cr.)
- PPAD 5128 - Corporate Social Responsibility and NGO Partnerships (3 cr.)
- PPAD 5168 - Proposal Writing and Grant Management for Nonprofit Organizations (3 cr.)
- PPAD 5169 - Issues in Social Entrepreneurship (3 cr.)
- PPAD 5170 - Volunteer Management (3 cr.)
- PPAD 5199 - Special Topics in Public Policy and Administration (1-3 cr.)

Complete any two PPAD courses in consultation with the Department Advisor.

Concentration Two: Human Resources Management in the Public and Nonprofit Organizations- 5 courses (15 credits) required

Group 1: Complete three of the following courses:

- LAW 5232 - International Law (3 cr.)
- PPAD 5113 - Organizational Behavior for Government and Nonprofit Management (3 cr.)
- PPAD 5124 - Leadership and Communication for Public Affairs (3 cr.)
- PPAD 5171 - International and Comparative Human Resources Management (3 cr.)
- PPAD 5173 - Public Administration, Technology, and Innovation (3 cr.)

Group 2: Complete any two PPAD courses in consultation with the Department Advisor.

Concentration Three: Public Sector Reform and Innovation - 5 courses (15 credits) required

Group 1: Complete three of the following courses:

- PPAD 5113 - Organizational Behavior for Government and Nonprofit Management (3 cr.)
- PPAD 5122 - Administrative Environment and Public Policy in Egypt and the Middle East (3 cr.)
- PPAD 5124 - Leadership and Communication for Public Affairs (3 cr.)
- PPAD 5130 - Governance and Development (3 cr.)
- PPAD 5173 - Public Administration, Technology, and Innovation (3 cr.)
- PPAD 5202 - Public Policy Theory & Practice (3 cr.)
- PPAD 5223 - International Models of Public Management (3 cr.)

Group 2: Complete any two PPAD courses in consultation with the Department Advisor.

Internship (PPAD 5198): 3 credits Graded Pass-Fail

Students are strongly encouraged to undertake an internship within their concentration, ideally in conjunction with their thesis work. This course is considered as one of the elective courses (Group 2).

Thesis

Students are required to write a thesis on some aspect of public administration relevant to their concentration. The preparation of the thesis and the thesis itself must comply with Departmental and AUC guidelines with regard to content, format, dates, and the review and supervision process. Students are responsible for familiarizing themselves with these guidelines and meeting formal deadlines. Students preparing the thesis normally develop a preliminary thesis proposal during PPAD 5201, a required core course, but may prepare an alternative thesis proposal if desired. Once the proposal is approved, students should enroll in PPAD 5298, the thesis research seminar, in the first semester in which they are working on the research component and write-up of their thesis. Thereafter, if additional work is required to complete the thesis, students can enroll each semester in PPAD 5299.

Non-Thesis Track

Students who do not wish to write a thesis can choose to substitute it with one additional PPAD 3-credit course, with the approval of the program director, and then sit for a comprehensive examination after completing all program course requirements. A comprehensive examination is usually offered in mid-December and mid-April. Students planning to sit for the comprehensive examination in any semester must register for comprehensives (PPAD 5288) in that semester.

Comprehensive examination may be repeated once. A student who fails the comprehensive examination a second time would be dismissed from the degree program after the end of the semester in which the examination was retaken.

Dual Degree Option BSc/CENG-MPA

Students enrolled in the School of Science and Engineering may apply to complete the MPA on an accelerated basis in conjunction with completion of the BSc. in Construction Engineering. At present, this option is open only to students completing the BSc. in Construction Engineering. Students interested in this option should consult with their advisors during the Fall of their fourth year for potential admission to the program in their fifth year. The program is jointly administered by the Department of Public Policy and Administration in the School of Public Affairs and the School of Sciences and Engineering. Admission is based on the recommendation of the student's

SSE advisor and review by the PPAD department. Students who wish to be admitted to this dual degree should have a minimum GPA of 2.75. The program prepares students for careers in the public sphere with the highest ethical standards, strong competencies in environmental analysis and management as well as public governance, excellent leadership and communication skills, a sound understanding of the use of evidence and analysis in public service settings, and a commitment to building a better future for the people of Egypt and the region. Students pursue careers in government, nonprofit organizations, international development agencies, academia, and the private sector.

Students electing the dual degree option usually begin taking graduate courses in their ninth semester and receive both the BSc. and the MPA upon the completion of their coursework and master's thesis, normally at the end of their 6th year.

Students who seek to register in this dual degree should complete four 4000-level CENG-required courses that address issues of management or public administration. Courses will need to be approved by the department prior to registration.

Additionally, students must take at least seven PPAD graduate courses and write a thesis (upon registering for the PPAD 5298 course); or take the non-thesis track of one additional course and a comprehensive examination administered by the Public Policy and Administration Department.

Complete all following five (5) courses:

- PPAD 5111 - Essentials of Public Policy and Administration (3 cr.)
- PPAD 5201 - Research Methods for Public Policy and Administration (3 cr.)
- PPAD 5221 - Strategic Management for Government and Nonprofit Organizations (3 cr.)
- PPAD 5222 - Fundamentals of Financial Planning and Management for Government and Nonprofit Organizations (3 cr.)
- PPAD 5224 - Human Resource Management for Government and Nonprofit Organizations (3 cr.)

Group 2: Complete one (1) of the following:

- PPAD 5211 - Qualitative Analysis for Policy and Administration (3 cr.)
- PPAD 5212 - Applied Quantitative Analysis (3 cr.)

Group 3: Complete one (1) of the following:

- PPAD 5113 - Organizational Behavior for Government and Nonprofit Management (3 cr.)
- PPAD 5124 - Leadership and Communication for Public Affairs (3 cr.)

- PPAD 5126 - Managing NGOs in Developing and Transitional Countries (3 cr.)
- PPAD 5132 - Social and Environmental Policy (3 cr.)
- PPAD 5174 - Internship in Public and Non-Profit Organizations (3 cr.)
- PPAD 5202 - Public Policy Theory & Practice (3 cr.)

Thesis Track

Students are required to write a thesis on some aspect of public administration relevant to their concentration. The preparation of the thesis and the thesis itself must comply with Departmental and AUC guidelines with regard to content, format, dates, and the review and supervision process. Students are responsible for familiarizing themselves with these guidelines and meeting formal deadlines. Students preparing the thesis normally develop a preliminary thesis proposal during PPAD 5201, a required core course, but may prepare an alternative thesis proposal if desired. Once the proposal is approved, students should enroll in PPAD 5298, the thesis research seminar, in the first semester in which they are working on the research component and write-up of their thesis. Thereafter, if additional work is required to complete the thesis, students can enroll each semester in PPAD 5299.

Non-Thesis Track

Students who do not wish to undertake a thesis can choose to substitute the thesis with one additional PPAD 3 credit course, with the approval of the program director, and then sit for a comprehensive examination after completing all program course requirements. A comprehensive examination is usually offered in mid-December and mid-April. Students not registered for courses or thesis credit hours and planning to sit for the comprehensive examination in any semester must register for comprehensives (PPAD 5288) in that semester and pay tuition equivalent to one graduate credit hour.

Comprehensive examination may be repeated once. A student who fails the comprehensive examination a second time would be dismissed from the degree program after the end of the semester in which the examination was retaken.

Master of Public Policy

Master of Public Policy (MPP)

The Master of Public Policy (MPP) is triple accredited by the Network of Schools of Public Policy, Affairs and Administration (NASPAA); the European Association for Public Administration Accreditation (EAPAA); and the International Commission on the Accreditation of Public Administration Education and Training (ICAPA). The degree is administered by the Public Policy

and Administration Department (PPAD) in the School of Global Affairs and Public Policy. The program prepares students for leadership positions in public service and for careers as policy analysts. Graduates of the MPP program generally pursue careers in government, nonprofit organizations, international development agencies, academia, consulting firms, and the private sector.

The Master of Public Policy is recognized by the Supreme Council of Universities (SCU) as an academic master's degree for the students who write a thesis on some aspect of public policy relevant to their concentration. Students who do not wish to write a thesis and pursue the non-thesis track will have their degree recognized by the SCU as a professional master's degree.

Program objectives

The mission of the MPP Program is to prepare leaders for careers in policy-making in Egypt and the Middle East. The program prepares leaders with strong competencies in public governance, communication and the capability to develop, use and communicate evidence-based analysis in public policy with the highest ethical standards.

Admission

All applicants must satisfy the university's graduate admission requirements. Candidates for the MPP or DPP should have adequate preparation in quantitative analytic methods. Relevant professional experience is desirable but not required.

Courses (36 credit hours)

Students seeking the degree of Master of Public Policy must complete 36 credit hours including a thesis preparation course (PPAD 5298) or 36 credit hours plus a comprehensive examination. The program core, required of all students, consists of 6 courses (18 credits). Students must complete a concentration of 5 courses (15 credits). Students writing a thesis, consistent with department and university guidelines, will enroll in Research Seminar (PPAD 5298) and subsequently in PPAD 5299 if they do not complete their thesis during their enrollment in PPAD 5298. Students in the non-thesis track will need to complete 36 credit hours (not including PPAD 5298) and register for the Comprehensive Examination.

Core Requirement (18 credit hours)

Students must complete the following six courses:

Group 1: Students must complete the following five courses:

- PPAD 5201 - Research Methods for Public Policy and Administration (3 cr.)

- PPAD 5202 - Public Policy Theory & Practice (3 cr.)
- PPAD 5211 - Qualitative Analysis for Policy and Administration (3 cr.)
- PPAD 5212 - Applied Quantitative Analysis (3 cr.)
- PPAD 5231 - Economics for Public Policy Analysis (3 cr.)

Group 2: Complete one of the following:

- PPAD 5111 - Essentials of Public Policy and Administration (3 cr.)
- PPAD 5132 - Social and Environmental Policy (3 cr.)

Concentration Requirement (15 credit hours)

Students must complete 5 courses in one of the concentrations below. Students may substitute up to two courses for those shown in a concentration with permission of the department.

MPP Concentration 1: Policies for Sustainable Development - 5 courses (15 credits) required

Students should select concentration courses based on their chosen area of specialization, which may include health and social services policy, anti-poverty policy, environmental policy, or an area defined by the student.

Group 1: Complete three of the following courses

- PPAD 5127 - Reforming the Delivery of Social Policies in the Middle East (3 cr.)
- PPAD 5132 - Social and Environmental Policy (3 cr.)
- PPAD 5133 - Global Health Issues and Policies (3 cr.)
- PPAD 5136 - Gender in Public Policy and Administration (3 cr.)
- PPAD 5141 - Policy for Sustainable Cities (3 cr.)
- PPAD 5143 - Urban Infrastructure Development for Sustainability (3 cr.)
- PPAD 5199 - Special Topics in Public Policy and Administration (1-3 cr.)

Group 2: Complete any two course in consultation with the Department advisor

MPP Concentration 2: Promotion and Regulation of the Private Sector Development – 5 courses (15 credits) required

Students should select concentration courses based on their chosen area of specialization, which may include financial markets; telecommunications, power, and water; private sector development; regional economic development, or a topic identified by the student.

Group 1: Complete three of the following courses

- PPAD 5123 - Governance, Accountability, and Stakeholder Negotiations (3 cr.)

- PPAD 5129 - Globalization and Development (3 cr.)
- PPAD 5131 - Government Finance for Policy Analysis (3 cr.)
- PPAD 5165 - Program Evaluation (3 cr.)
- PPAD 5199 - Special Topics in Public Policy and Administration (1-3 cr.)
- PPAD 5232 - Role of Government in a Market-Oriented Economy (3 cr.)
- PPAD 5251 - International Organization in Global Governance (3 cr.)
- PPAD 5252 - Theory and Practice of Negotiation (3 cr.)

Group 2: Complete any two course in consultation with the Department advisor

MPP Concentration 3: Media Policy - 5 courses (15 credits) required

Group 1: Complete three of the following courses

- JRMC 5250 - Seminar in International Communication (3 cr.)
- JRMC 5270 - Seminar in Mass Communication and National Development (3 cr.)
- JRMC 5280 - Television and Digital Broadcasting: Impact and Development (3 cr.)
- JRMC 5290 - Special Topics (3 cr.)
- PPAD 5124 - Leadership and Communication for Public Affairs (3 cr.)
- PPAD 5199 - Special Topics in Public Policy and Administration (1-3 cr.)

Group 2: Complete any two course in consultation with the Department advisor

MPP Concentration 4: Data Analytics and program Evaluation - 5 courses (15 credits) required

Students should select concentration courses based on their chosen area of specialization, which may include program evaluation and data analysis and survey data analysis , or an area defined by the student.

Group 1: Complete three of the following courses

Students should select concentration courses based on their chosen area of specialization, which may include program evaluation and data analysis and survey data analysis, or an area defined by the student. Students can only declare this concentration upon the successful completion of PPAD 5212 - Applied Quantitative Analysis (3 cr.)

- PPAD 5165 - Program Evaluation (3 cr.)
- PPAD 5173 - Public Administration, Technology, and Innovation (3 cr.)
- PPAD 5179 - Big Data Analytics for Public Policy (3 cr.)
- PPAD 5180 - Introduction to Data Analytics (3 cr.)

Group 2: Complete any two course in consultation with the Department advisor

Internship (PPAD 5198): 3 credits Graded Pass-Fail

Students are strongly encouraged to undertake an internship within their concentration, ideally in conjunction with their thesis work. This course is considered as one of the elective courses (Group 2).

Thesis

Students are required to write a thesis on some aspect of public policy relevant to their concentration. The preparation of the thesis and the thesis itself must comply with Departmental and AUC guidelines with regard to content, format, dates, and the review and supervision process. Students are responsible for familiarizing themselves with these guidelines and meeting formal deadlines. Students preparing the thesis normally develop a preliminary thesis proposal during PPAD 5201, a required core course, but may prepare an alternative thesis proposal if desired. Once the proposal is approved, students should enroll in PPAD 5298, the thesis research seminar, in the first semester in which they are working on the research component and write-up of their thesis. Thereafter, if additional work is required to complete the thesis, students must enroll each semester in PPAD 5299.

Non-Thesis Track

Students who do not wish to write a thesis can choose to substitute it with one additional PPAD 3-credit course (not including PPAD 5298), with the approval of the program director, and then sit for a comprehensive examination after completing all program course requirements. A comprehensive examination is usually offered in mid-December and mid-April. Students planning to sit for the comprehensive examination in any semester must register for comprehensives (PPAD 5288) in that semester.

Comprehensive examination may be repeated once. A student who fails the comprehensive examination a second time would be dismissed from the degree program after the end of the semester in which the examination was retaken.

Graduate Diploma

Global Affairs (Graduate Diploma)

The Diploma Program requires the completion of 18 credit hours of coursework in the Public Policy and Administration Department, including at least 12 credit hours from the courses making up the MGA degree.

Public Administration (Graduate Diploma)

Program Requirements

The Diploma Program requires the completion of 18 credit hours of coursework in the PPAD department, including at least 12 credit hours from the courses making up the MPA core.

Public Policy (Graduate Diploma)

Program Requirements

The Diploma Program requires the completion of 18 credit hours of coursework in the PPAD department, including at least 12 credit hours from the courses making up the MPP core.

Dual Degree Programs

Master of Organizational Leadership (MOL) option BSc/CENG-MPA

Dual Degree Option BSc/CENG-MPA

Students enrolled in the School of Science and Engineering may apply to complete the MPA on an accelerated basis in conjunction with completion of the BSc. in Construction Engineering. At present, this option is open only to students completing the BSc. in Construction Engineering. Students interested in this option should consult with their advisors during the Fall of their fourth year for potential admission to the program in their fifth year. The program is jointly administered by the Department of Public Policy and Administration in the School of Public Affairs and the School of Sciences and Engineering. Admission is based on the recommendation of the student's SSE advisor and review by the PPAD department. Students who wish to be admitted to this dual degree should have a minimum GPA of 2.75. The program prepares students for careers in the public sphere with the highest ethical standards, strong competencies in environmental analysis and management as well as public governance, excellent leadership and communication skills, a sound understanding of the use of evidence and analysis in public service settings, and a commitment to building a better future for the people of Egypt and the region. Students pursue careers in government, nonprofit organizations, international development agencies, academia, and the private sector.

Students electing the dual degree option usually begin taking graduate courses in their ninth semester and receive both the BSc. and the MPA upon the completion of their coursework and master's thesis, normally at the end of their 6th year.

Students who seek to register in this dual degree should complete four 4000-level CENG-required courses that address issues of management or public administration. Courses will need to be approved by the department prior to registration.

Additionally, students must take at least seven PPAD graduate courses and write a thesis (upon registering for the PPAD 5298 course); or take the non-thesis track of one additional course and a comprehensive examination administered by the Public Policy and Administration Department.

Complete all following five (5) courses:

- PPAD 5111 - Essentials of Public Policy and Administration (3 cr.)
- PPAD 5201 - Research Methods for Public Policy and Administration (3 cr.)
- PPAD 5221 - Strategic Management for Government and Nonprofit Organizations (3 cr.)
- PPAD 5222 - Fundamentals of Financial Planning and Management for Government and Nonprofit Organizations (3 cr.)
- PPAD 5224 - Human Resource Management for Government and Nonprofit Organizations (3 cr.)

Group 2: Complete one (1) of the following:

- PPAD 5211 - Qualitative Analysis for Policy and Administration (3 cr.)
- PPAD 5212 - Applied Quantitative Analysis (3 cr.)

Group 3: Complete one (1) of the following:

- PPAD 5113 - Organizational Behavior for Government and Nonprofit Management (3 cr.)
- PPAD 5124 - Leadership and Communication for Public Affairs (3 cr.)
- PPAD 5126 - Managing NGOs in Developing and Transitional Countries (3 cr.)
- PPAD 5132 - Social and Environmental Policy (3 cr.)
- PPAD 5174 - Internship in Public and Non-Profit Organizations (3 cr.)
- PPAD 5202 - Public Policy Theory & Practice (3 cr.)

Thesis Track

Students are required to write a thesis on some aspect of public administration relevant to their concentration. The preparation of the thesis and the thesis itself must comply with Departmental and AUC guidelines with regard to content, format, dates, and the review and supervision process. Students are responsible for familiarizing themselves with these guidelines and meeting

formal deadlines. Students preparing the thesis normally develop a preliminary thesis proposal during PPAD 5201, a required core course, but may prepare an alternative thesis proposal if desired. Once the proposal is approved, students should enroll in PPAD 5298, the thesis research seminar, in the first semester in which they are working on the research component and write-up of their thesis. Thereafter, if additional work is required to complete the thesis, students can enroll each semester in PPAD 5299.

Non-Thesis Track

Students who do not wish to undertake a thesis can choose to substitute the thesis with one additional PPAD 3 credit course, with the approval of the program director, and then sit for a comprehensive examination after completing all program course requirements. A comprehensive examination is usually offered in mid-December and mid-April. Students not registered for courses or thesis credit hours and planning to sit for the comprehensive examination in any semester must register for comprehensives (PPAD 5288) in that semester and pay tuition equivalent to one graduate credit hour.

Comprehensive examination may be repeated once. A student who fails the comprehensive examination a second time would be dismissed from the degree program after the end of the semester in which the examination was retaken.

Center for Migration and Refugee Studies

Director: I. Awad

The Center for Migration and Refugee Studies (CMRS), was first established in 2000 and was expanded in 2008 into a Regional Center encompassing all forms of international mobility, whether voluntary or forced, economic or political, individual or collective, temporary or permanent. Consistent with the mission of the School of Global Affairs and Public Policy, our programs are all multidisciplinary.

CMRS activities include Graduate Education, Research and Outreach activities.

CMRS offers a Master of Arts in Migration and Refugee Studies, a Graduate Diploma in Migration and Refugee Studies and a Graduate Diploma in Psychosocial Interventions for Forced Migrants and Refugees.

The CMRS research program includes a systematic and comparative inventory of the situation regarding migration and refugee movements across the Middle East and North Africa (MENA), as well as in-depth studies of emerging issues in the region.

CMRS outreach includes disseminating knowledge on migration and refugee issues beyond the university's gates, as well as providing a range of educational services to refugee communities.

Master of Arts

Migration and Refugee Studies (M.A.)

Master of Arts

The MA program in Migration and Refugee studies is an interdisciplinary degree program that aims to provide graduates with critical knowledge, research methods and analytical skills of current theoretical, legal, political, economic, social, demographic and psychological issues in migration and refugee studies. The knowledge and skills acquired may be applied in careers within institutions such as governmental, non-governmental and international agencies, as well as universities, research organizations and private corporations dealing with the multitude of issues connected with migration and refugee movements.

It is possible to work towards the MA in Migration and Refugee Studies with other MAs and Diplomas at AUC. For more information, see Dual Graduate Degrees under the Academic Requirements and Regulations section: Graduate Academic Requirements & Regulations.

Admission

Applicants seeking admission to the Master's program should have an undergraduate degree of high standing (equivalent of a B grade or higher) and meet the university's language proficiency. Pre-requisites may be assigned, depending on the student's academic background. Students with related work, research or volunteer experience will be given priority. The MA normally requires two years of full-time study.

Requirements

Course Requirements

The MA program requires the successful completion of 8 courses (24 credit hours). All students must take the following 5 core courses:

- MRS 5101 - International Refugee Law (3 cr.)
- MRS 5200 - Introduction to Migration and Refugee Studies (3 cr.)
- MRS 5202 - Migration & Refugee Movements in the Middle East and North Africa (3 cr.)
- MRS 5203 - International Migration and Development (3 cr.)
- MRS 5204 - Research Methods in Migration and Refugees Studies (3 cr.)

The three electives can be chosen from the following approved list of electives:

- GWST 5104 - Mobilities: Gender and Migration (3 cr.)
- MRS 5112 - Psychosocial Issues in Forced Migration (3 cr.)
- MRS 5205 - Palestinian Refugee Issues (3 cr.)
- MRS 5206 - Comparative Migration Policies (3 cr.)
- MRS 5208 - Special Topics in Migration and Refugee Studies (3 cr.)
- MRS 5209 - Migration, Integration and Citizenship (3 cr.)
- MRS 5228 - Migration in International Law (3 cr.)
- MRS 5284 - Practicum: Internship or Research (3 cr.) (Supervised internship with organization working on migration issues).

  With the center's approval, students may take one course offered by other departments or centers not listed among the above approved list of electives.

Thesis Requirements

All students must complete a thesis according to university regulations. Before commencing work on the thesis, the student must register for course MRS 5299 "Research Guidance and Thesis". The student must present a thesis proposal for approval by CMRS. The thesis proposal should comprise a research question, including a set of hypotheses, the sources of information and an outline of the research method to be used - and should not exceed 2000 words. After the acceptance of the thesis proposal, students can start working on their thesis. After the completion of the thesis, it must be defended in an oral examination during which questions may be asked regarding any aspect of the thesis itself or of courses taken in the program particularly as they may relate to the thesis.

Graduate Diploma

Migration and Refugee Studies (Graduate Diploma)

Graduate Diploma in Migration and Refugee Studies

Admission

Applicants seeking admission to the Graduate diploma should have an undergraduate degree of high standing (equivalent of a B grade or higher) and meet the university's language proficiency exam.

Requirements

The diploma requires the completion of six courses (four core courses and two electives).

Students enrolled in the diploma program are not required to write a thesis. The diploma can be completed in one year.

Course Requirements

The Graduate Diploma requires the successful completion of 6 courses (18 credit hours). These include four required core courses plus two elective courses.

All students must take:

- MRS 5101 - International Refugee Law (3 cr.)
- MRS 5200 - Introduction to Migration and Refugee Studies (3 cr.)
- MRS 5202 - Migration & Refugee Movements in the Middle East and North Africa (3 cr.)
- MRS 5203 - International Migration and Development (3 cr.)
- Two electives are to be chosen from the CMRS list of electives offered each semester.

Psychosocial Interventions for Forced Migrants and Refugees (Graduate Diploma)

Graduate Diploma in Psychosocial Interventions for Forced Migrants and Refugees

The diploma is jointly offered by the Center for Migration and Refugee Studies (CMRS) and the Department of Psychology.

Graduates of this diploma will acquire core competencies that qualify them to think critically and analytically about migration and refugee issues and plan and implement holistic culturally sensitive interventions that minimize or alleviate the psychosocial issues affecting forced migrants and refugees at individual, family, group, community and societal levels. They will learn to plan, manage and implement state-of-the-art interventions that make an impact on the psychosocial well-being of refugee adults and children without discrimination due to ethnicity, gender, religion or capacities.

Applicants seeking admission to the diploma should have an undergraduate degree of high standing (equivalent of a B grade or higher) and meet the university's language proficiency exam. Applicants with relevant background academic or work experience will be prioritized. Admission is competitive, and dependent on successful interview.

The program course sequence for admitted applicants only starts in the Fall semester. The diploma can be finished in one year of full time study or two years of part-time study. It does not require the completion of a thesis.

Course Requirement

The graduate diploma in psychosocial intervention for forced migrants and refugees requires the successful completion of 6 courses with 18 credit hours. These will consist of 5 core courses, plus one elective.

- MRS 5112 - Psychosocial Issues in Forced Migration (3 cr.)
- MRS 5200 - Introduction to Migration and Refugee Studies (3 cr.)
- MRS 5214 - Psychosocial Interventions for Forced Migrants and Refugees (3 cr.)
- PSYC 5210 - Community Psychology and Systems Theory (3 cr.)
- PSYC 5283 - Internship in Community Psychology (3 cr.) (This internship course will be undertaken in the spring where placement will be with an organization working with refugee and migrant populations).
- One elective can be selected based on student interests from the list of electives offered by CMRS and the Department of Psychology.

Kamal Adham Center for Television and Digital Journalism

Director: H. Amin

The Kamal Adham Center for Television and Digital Journalism is designed to prepare graduate students for careers in television broadcasting and news reporting in the digital age. Through its master's program, the Center offers graduates the opportunity to become reporters, producers, television anchors, hosts and media professionals at the top television and satellite channels locally and internationally.

The 33-credit hour curriculum provides comprehensive knowledge of the literature and practice of television journalism and news media. It is a practical program that provides intensive and hands-on exposure to the skills needed for producing both field reports and in-studio shows. The program courses focus on editorial and technical skills, such as scriptwriting in English and Arabic, camera use, editing and studio operations, as well as courses on interviewing, talk show hosting and voice coaching. Students learn to use the latest HD and 3D cameras and digital equipment that is comparable to facilities found in major news organizations around the world.

Master of Arts

- Television and Digital Journalism (M.A.)

Master of Arts

Television and Digital Journalism (M.A.)

Master's Degree in Television & Digital Journalism

The Kamal Adham Center for Television and Digital Journalism is designed to prepare graduate students for careers in television broadcasting and news reporting in the digital age. Through its master's program, the Center offers graduates the opportunity to become reporters, producers, television anchors, hosts and media professionals at the top television and satellite channels locally and internationally.

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Admission

Applicants are required to have a minimum GPA of 3.00 (on a 4.00 scale) or its equivalent of gayyid giddan (very good) in an undergraduate degree from an accredited college or university. Applicants with relevant work experience, but with a GPA slightly lower than 3.0 may still be considered for admission by the Center's graduate committee.

In addition to general language requirements established by AUC, the applicant must demonstrate a proficiency in English at an advanced level. All applicants will be personally interviewed a committee chaired by the director of the program in order to assess their level of communication and spoken language skills.

Applicants must submit official transcripts of all university degrees, an updated curriculum vitae, two recommendation letters from relevant, credible sources and a personal statement of purpose. Applicants with media experience must submit samples of their work.

Since the Television and Digital Journalism Master's is a practical and hands-on program, requiring daily assignments outside of normal scheduled classes, students are expected to be available to take classes and complete assignments during the day and evening hours.

Admission checklist:

- Proof of English Language proficiency

- Official transcripts
- Curriculum Vitae
- Two letters of recommendation
- Personal statement of purpose
- Samples of published/broadcast work if applicable
- Committee interview

TV & Digital Journalism Master's Courses

A minimum of 11 courses totaling 33 credit hours is required for the degree. All students must take the following:

- TVDJ 5102 - Social Media Journalism (3 cr.)
- TVDJ 5203 - Media Ethics and Social Responsibility (3 cr.)
- TVDJ 5207 - Practicum: TV or Special Video Assignment (3 cr.)
- TVDJ 5237 - TV Digital News Gathering and Script Writing (3 cr.)
- TVDJ 5239 - TV Presentation and Voice Coaching (3 cr.)
- TVDJ 5241 - Field and Studio Digital Camera Production (3 cr.)
- TVDJ 5242 - Digital Video Editing (3 cr.)
- TVDJ 5245 - TV Studio News Reporting (3 cr.)
- TVDJ 5246 - TV Digital Journalism Capstone (3 cr.)

Electives (6 credits)

Students must choose two (2) of the following courses:

- JRMC 5202 - Seminar: Current Issues in Mass Communication (3 cr.)
- JRMC 5250 - Seminar in International Communication (3 cr.)
- JRMC 5271 - Digital Journalism (3 cr.)
- JRMC 5290 - Special Topics (3 cr.)
- TVDJ 5240 - Documentary Filmmaking (3 cr.)
- TVDJ 5270 - Interactive Journalism (3 cr.)
- TVDJ 5290 - Special Topics (3 cr.)

Thesis

The Master's degree in Television and Digital Journalism is a professional degree. In lieu of comprehensive exams and a thesis, students are required to complete a capstone project.

Students in the Television and Digital Journalism (M.A.) program may take five (5) more courses from the course offerings of the Department of Journalism and Mass Communication, and prepare a thesis study if they wish to obtain a master's degree in Journalism and Mass Communication (JRMC), and thus, have dual masters in TVDJ and JRMC from the American University in Cairo.

The Television and Digital Journalism (M.A.) program has an equivalence of a professional MA from the Supreme Council of Universities in Egypt.

Please note the following:

- A graduate admission application is needed for both programs, in addition to a dual degree form approved by both units.
- Students applying for a dual graduate degree must fulfill admission requirements for both programs.
- Up to 12 credit hours (4 courses) may be double counted for both degrees, therefore, a total number of 16 courses is required to complete the dual graduate degrees.

Middle East Studies Program

Director: K. Ezzelarab

Bachelor of Arts

Middle East Studies (B.A.)

Middle East Studies is an interdisciplinary program. Middle East Studies courses are taught by faculty members from Anthropology, Arabic Studies, Economics, History, Management, Political Science, and Sociology. Through intensive study of the region's history, culture, and current issues, students gain a comprehensive understanding of the modern Middle East. See faculty listings under departmental descriptions.

Bachelor of Arts

A minimum GPA of 2.7 is required in order to declare and maintain a major in the Middle East Studies program.

A total of 120 credits is required for the bachelor's degree in Middle East Studies:

Core Curriculum (40 credits)

Non-Arabic speaking students must take six hours of colloquial or literary Arabic.

Concentration Requirements (45 credits)

Apart from the Core requirements, students must take two courses from the 2000 and 3000 level courses in each of the following six field fields: Anthropology, Arab Studies, Economics, History, Political Science and Sociology. In addition, the student must take a total of three, 4000 level courses selected from the above fields. The rest of the courses beyond the Core and Middle East Studies major must be advanced level courses, unless they are part of the requirements of a Minor.

In the case of ARIC and HIST courses, if the student takes one of the courses listed below as part of the Core requirements, the student must take another course from the Core courses listed under these fields.

2000 and 3000 level course requirements (36 credits)

- ANTH 2101 - Cultural Anthropology (3 cr.)
- ANTH 3301 - Anthropologies of Middle East and North Africa (3 cr.)
- ARIC 2346 - Survey of Arab History (3 cr.)
- ARIC 3345 - Gunpowder Empires: Ottomans, Safavids and Mughals (3 cr.)
- ARIC 3346 - Egypt since the Arab Conquest (3 cr.) or ARIC 3397 - Selected Topics in Middle East History (3 cr.)
- ECON 2021 - Introduction to Macroeconomics (3 cr.)
- ECON 2051 - Economic History of the Modern Middle East (3 cr.)
- POLS 2003 - Introduction to Political Science II (3 cr.)
- POLS 3408 - Comparative Politics of the Middle East (3 cr.)
- SOC 3085 - Environmental Issues in Egypt (3 cr.)
- SOC 3303 - Social Movements (3 cr.)

Choose one of the following

- ARIC 3321 - Zawiyas, Harems, Coffee shops, Everyday Life in the Pre-Modern Mideast (3 cr.)
- ARIC 3343 - Early Islamic History (3 cr.)
- ARIC 3353 - Islamic Political Thought (3 cr.)

4000 level course requirements (9 credits)

In addition to the above courses, students are required to take three 4000-level courses from the following list:

- ANTH 4030 - Women, Islam and the State (3 cr.)
- ARIC 5133 - Islamic Institutions (3 cr.)
- ARIC 5134 - Modern Movements in Islam (3 cr.)
- ARIC 5142 - Islamic Law (3 cr.)
- ECON 4051 - Seminar on Economic Development and Policy in the Middle East (3 cr.)
- HIST 4288 - Selected Topics in the History of the Modern Middle East (3 cr.)
  or
- HIST 4290 - Selected Topics in Modern Egyptian History (3 cr.)
- MEST 4301 - Special Topics in Middle East Studies (3 cr.)
- POLS 4420 - Issues in Middle East Politics (3 cr.)
- POLS 4523 - The Political Economy of Poverty and Inequality (3 cr.)
- POLS 4542 - Environmental Politics (3 cr.)
- SOC 4560 - Development Studies Seminar (3 cr.)

Electives (35 credits)

Depending on the number of credit hours needed to complete the 120 stated above.

Prince Alwaleed Bin Talal Bin Abdulaziz Alsaud Center for American Studies and Research

Director: M. Deets

Minors

American Studies Minor

The minor in American Studies at AUC is an interdisciplinary program in which students take a minimum of five courses (15 credits) among specified offerings involving the study of the history or culture of the United States and the Americas. Students are required to take ECLT 2019, and four other courses as electives from among courses offered on American issues and topics in anthropology, journalism, history, literature, philosophy, sociology, political science, and other disciplines. Courses listed under the heading "Selected Topics" may be included if the content is relevant to the United States and the Americas.

Requirements:

- ECLT 2019 - Introduction to American Studies (3 cr.)

And at least four of the following:

- AMST 2096 - Selected Topics for Core Curriculum (3 cr.)
- AMST 2190 - Is America Still a Superpower? (3 cr.)
- AMST 3000 - Selected Topics in American Studies (3 cr.)
- AMST 3010 - American Literature to 1900 (3 cr.)
- AMST 3011 - Modern American Literature (3 cr.)
- AMST 3016 - American Philosophy (3 cr.)
- AMST 3100 - The US and the World Economy (3 cr.)
- AMST 4001 - Selected Topics for Core Curriculum (3 cr.)
- AMST 4444 - Media Law and Policy (3 cr.)
- ANTH 3080 - Gender, Sexuality and Social Change (3 cr.)
- ANTH 3305 - Selected Topics in Arab World Studies (3 cr.)
  See footnote one.
- ECLT 3008 - Modern European and American Literature (3 cr.)
- HIST 2501 - The Making of America (3 cr.)
- HIST 2502 - The Rise and Fall of America (3 cr.)
- HIST 4588 - Selected Topics in the History of the United States (3 cr.)
- POLS 4403 - American Government and Politics (3 cr.)
- POLS 4615 - U.S. Foreign Policy (3 cr.)
- SOC 3060 - Social Constructions of Difference: Race, Class and Gender (3 cr.)
  See footnote one.
- SOC 3303 - Social Movements (3 cr.)
- SOC 3304 - Social Class and Inequality (3 cr.)
  See footnote one.

Notes:

Footnote one: when instructor and the Dean of GAPP deem course content appropriate
Footnote two: with permission of the instructor
See departmental announcements or AUC Catalog entries under departmental headings for complete course descriptions.

School of Humanities and Social Sciences

Department of Applied Linguistics and Educational Studies

Professor Emeriti: F. Perry

Professors: R. Bassiouney (Chair), A. Gebril, Z. Taha

Associate Professors: T. Bekele, H. El Deghaidy, R. El Essawi, I. Karkouti

Assistant Professor: D. Mizza

Professor of Practice: M. Zaalouk (Director of the Middle East Studies of Higher Education)

Minors

Educational Studies Minor

The minor in educational studies is administered by the Department of Applied Linguistics and Educational Studies in the School of Humanities and Social Sciences. This minor offers undergraduate students at AUC an opportunity to study educational issues related to educational reform, as well as theories and practices of teaching and learning. It is an initial base from which they may pursue postgraduate interests in education, and it provides humanities, social sciences or natural sciences majors with an introduction to the professional opportunities available in education.

This minor requires 15 credit hours.

Electives

- EDUC 2011 - Education and Society (3 cr.)
- EDUC 2021 - Fundamentals of Teaching and Learning (3 cr.)
- EDUC 2041 - Education in Historic & Modern Cairo (3 cr.)
- EDUC 2099 - Selected Topics in Core Curriculum (3 cr.)
- EDUC 3011 - Educating Children and Youth for a Sustainable Future (3 cr.)
- EDUC 3021 - Designing and Assessing Instruction with Digital Technologies (3 cr.)
- EDUC 3031 - Role of Civil Society Organizations in Global Education and International Development (3 cr.)
- EDUC 4031 - Gender and Education (3 cr.)
- EDUC 4098 - Selected Topics for Core Curriculum (3 cr.)

Linguistics Minor

The linguistics minor is administered by the Department of Applied Linguistics and Educational Studies. The minor offers courses that help students understand how language is used for effective communication in different fields such as politics, the media, and business. It also aims to help students understand how language relates to community and identity. In addition, the minor aims to equip students with research skills and the tools to collect and analyze data. Furthermore, the minor offers courses in language teaching and using computers for linguistic analysis.

Requirements (6 credits)

- LING 2200 - Introduction to Linguistics (3 cr.)
- LING 2201 - Languages of the World (3 cr.)

And three of the following elective courses (9 credits)

- LING 2210 - Principles and Practice of Teaching English (3 cr.)
- LING 2220 - Language and Society (3 cr.)
- LING 2230 - Language and Communication (3 cr.)
- LING 2240 - Styles in Languages (3 cr.)
- LING 3075 - Language in Culture (3 cr.)
- LING 3310 - Linguistic Fieldwork (3 cr.)
- LING 3320 - Language and Politics (3 cr.)
- LING 3330 - Introduction to Corpus Linguistics (3 cr.)
- LING 3340 - Language Assessment (3 cr.)
- LING 4410 - Introduction to Computational Linguistics (3 cr.)

Translation Minor

The Minor in Translation is a practice-oriented program that focuses on how language and translation can be applied to real life situations to enable students to become professionals in a range of in-demand fields.

The topics covered by the courses in this program include-but are not limited to-translation theory, technology mediated translation, translation of professional documents, language and communication, and language and society.

The program aims to enhance the translation skills of students. Students will learn about different translation methods, and practice translation techniques throughout. They also learn to utilize their linguistic skills to become better translators, through hands-on translation activities and encounters with practitioners in the field.

The program gives students a solid grounding in linguistics and translation. Graduates of this program will be equipped to become professionals in growing fields such as translation, publishing, media, politics, international projects and more.

Required

- LING 2230 - Language and Communication (3 cr.)
- LING 2250 - Foundations of Translation Theories (3 cr.)

Electives (choose three)

- ARIC 5117 - Translation: Theory and Practice (3 cr.)
- LING 2200 - Introduction to Linguistics (3 cr.)
- LING 2220 - Language and Society (3 cr.)
- LING 3350 - Translation of Professional Documents (3 cr.)
- LING 4351 - Technology-Mediated Translation (3 cr.)
- LING 4440 - UN and International Conference Simultaneous Interpretation (3 cr.)

Master of Arts

Educational Leadership (M.A.) with concentrations in School Leadership and Higher Education

Master of Arts in Educational Leadership (EDUL)

A total of 34 credit hours (10 courses plus the thesis) are required for MA students. Students may, with prior department approval, bring in up to six credit hours of coursework from other relevant programs. The program seeks to enroll students who are passionate about improving educational leadership in schools and higher education in Egypt, the Middle East, and beyond. By focusing on education from an international and comparative perspective, we intend for students to gain professional educational skills in a global context of reform. All students in the MA Program in Educational Leadership must either complete and defend a thesis, or complete the "Alternative to thesis Option" as described below.

Thesis

The Department of Applied Linguistics and Educational Studies conceives of the thesis in one of a variety of ways, including, but not limited to:

- As a research paper that utilizes quantitative, qualitative, or mixed research methods based on a theoretical framework and a full review of the related literature.
- As a thorough literature review that utilizes meta-analytic techniques or a theoretical framework to organize and portray a concept, argument, or field-based concern.
- As an applied project that utilizes a rigorous literature review and a carefully explained problem in order to demonstrate skill in applying research to real problems in the field.
- As a policy analysis or program evaluation that utilizes various analytic methods to provide interpretation on the effect of a particular policy or program, bolstered by a thorough literature review.

The thesis should be between 10,000 and 20,000 words and should demonstrate capacity to utilize research tools and existing empirical and theoretical literature.

To conduct a thesis in lieu of the comprehensive examination, the student must submit a pre-proposal to the department. The evaluation of the pre-proposal will indicate whether or not the department will allow the student to do a thesis instead of the comprehensive examination. A proposal must be submitted to, and approved by, a committee consisting of a faculty supervisor and two readers. Upon approval, IRB and other research approvals (such as CAPMAS) must be obtained prior to any data being collected. Upon completion of the thesis, the document must be submitted to, and approved by, the same committee. A period of two semesters must be devoted to the thesis.

Alternative to Thesis Option

In lieu of a thesis, the student may opt to: (i) take one extra 3-credit course; and then (ii) sit for a comprehensive exam, through registering for a 1-credit Comprehensive Exam course EDUC 5288. The exam will consist of essays written in a specified time period, followed by a brief oral interview conducted by 2 faculty members. The purpose of the interview is to give the candidate the opportunity to amplify and supplement the written papers.

Core Courses

The following courses represent the content Core courses required of all students.

- EDUC 5201 - Foundations of Educational Research (3 cr.)
- EDUC 5202 - Social Foundations of Education (3 cr.)
- EDUC 5203 - Introduction to International & Comparative Education (3 cr.)
- EDUC 5204 - Human Development & Learning Theory (3 cr.)
- EDUC 5221 - Transformational Education (3 cr.)
- EDUC 5223 - Organizational Theory and Educational Institutions (3 cr.)

All students must also complete two semesters of the thesis by registering for EDUC 5299 - Research Guidance and Thesis (2 cr.) (2 cr. each course) in the last two semesters of the program, for a total of 4 credit hours, or complete the Alternative to Thesis option.

Concentrations

Each student will select one of the following concentrations: School Leadership or Higher Education. Students must take a minimum of three courses from their concentration and complete their thesis on a subject within that concentration.

1. School Leadership

Students in the School Leadership concentration are required to complete at least three of the following courses:

- EDUC 5205 - Foundations of Instructional Practice (3 cr.)
- EDUC 5213 - Educational Evaluation & Assessment (3 cr.)
- EDUC 5217 - Strategic Educational Planning and Development (3 cr.)
- EDUC 5222 - School Governance and Management (3 cr.)
- EDUC 5224 - Research-based Instructional Leadership (3 cr.)
- EDUC 5233 - Action Research (3 cr.)
- EDUC 5236 - Education for Sustainable Development (3 cr.)
- EDUC 5259 - Selected Topics in International & Comparative Education (3 cr.)
- EDUC 5282 - Independent Study in International & Comparative Education (3 cr.)

2. Higher Education

Students in the Higher Education concentration are required to complete at least three of the following courses:

- EDUC 5217 - Strategic Educational Planning and Development (3 cr.)
- EDUC 5231 - Online and Blended Learning Design and Instruction in Developing Countries (3 cr.)
- EDUC 5236 - Education for Sustainable Development (3 cr.)
- EDUC 5241 - Pedagogy & Theory of Modern Teaching & Learning in Higher Education (3 cr.)
- EDUC 5242 - Theories of Student Development in Higher Education (3 cr.)
- EDUC 5243 - Policy and Administration in Higher Education (3 cr.)
- EDUC 5259 - Selected Topics in International & Comparative Education (3 cr.)
- EDUC 5282 - Independent Study in International & Comparative Education (3 cr.)

Additional courses for both concentrations can be taken from among the other EDUC MA-level courses.

International & Comparative Education (M.A.) with concentrations in International Education Development & Policy and Teaching and Learning

Master of Arts in International & Comparative Education (ICED)

A total of 34 credit hours (10 courses plus the thesis) are required for MA students. Students may, with prior department approval, bring in up to six credit hours of coursework from other relevant

programs. The program seeks to enroll students who are interested in improving educational policy and practice in Egypt, the Middle East, and beyond. By focusing on education from an international and comparative perspective, the program prepares students to gain inquiry-based practices and professional educational skills in local, regional and global contexts of reform which offer career opportunities in educational policy, development, and NGOs in addition to classroom teaching. All students in the MA Program in International and Comparative Education must either complete and defend a thesis, or complete the "Alternative to thesis Option" as described below.

Thesis

The Department of Applied Linguistics and Educational Studies conceives of the thesis in one of a variety of ways, including, but not limited to:

1. As a research paper that utilizes quantitative, qualitative, or mixed research methods based on a theoretical framework and a full review of related literature.
2. As a thorough literature review that utilizes meta-analytic techniques or a theoretical framework to organize and portray a concept, argument, or field-based concern.
3. As an applied project that utilizes a rigorous literature review and a carefully explained problem in order to demonstrate skill in applying research to real problems in the world.
4. As a policy analysis or program evaluation that utilizes various analytic methods to provide interpretation of the effect of a particular policy or program, bolstered by a thorough literature review.

The thesis should be between 10.000 and 20.000 words and should demonstrate capacity to utilize research tools and existing empirical and theoretical literature.

To conduct a thesis in lieu of the comprehensive examination, the student must submit a pre-proposal to the department. The evaluation of the pre-proposal will indicate whether or not the department will allow the student to do a thesis instead of the comprehensive examination. A proposal must be submitted to, and approved by, a committee consisting of a faculty supervisor and two readers. Upon approval, IRB and other research approvals (such as CAPMAS) must be obtained before any data are collected. Upon completion of the thesis, the document must be submitted to, and approved by, the same committee. An oral defense with the thesis committee will be required. A period of two semesters must be devoted to the thesis.

Alternative to Thesis Option

In lieu of a thesis, the student may opt to: (i) take one extra 3-credit course; and then (ii) sit for a comprehensive exam, through registering for a 1-credit Comprehensive Exam course EDUC 5288. The exam will consist of essays written in a specified time period, followed by a brief oral interview

conducted by 2 faculty members, if needed. The purpose of the interview is to give the candidate the opportunity to amplify and supplement the written papers.

Core Courses

The following courses represent the content Core Courses required of all MA students.

- EDUC 5201 - Foundations of Educational Research (3 cr.)
- EDUC 5202 - Social Foundations of Education (3 cr.)
- EDUC 5203 - Introduction to International & Comparative Education (3 cr.)
- EDUC 5204 - Human Development & Learning Theory (3 cr.)
- EDUC 5205 - Foundations of Instructional Practice (3 cr.)
- EDUC 5215 - Educational Policy Analysis (3 cr.)

All students must also complete two semesters of the thesis by registering for EDUC 599/5299 Research Guidance and Thesis (2 cr. each course) in the last two semesters of the program, for a total of 4 credit hours, or complete the alternative to Thesis option.

Concentrations

Each student will select one of the following concentrations: International Education Development & Policy, or Teaching and Learning. Students must take a minimum of three courses from their concentration and complete their thesis on a subject within that concentration.

1. International Education Development and Policy

Students in the International Education Development and Policy concentration are required to complete at least three of the following courses:

- EDUC 5211 - Globalization, Development, and Educational Reform in the Arab World (3 cr.)
- EDUC 5212 - Comparative Gender, Youth, and Human Development Policy (3 cr.)
- EDUC 5213 - Educational Evaluation & Assessment (3 cr.)
- EDUC 5214 - Human Rights-based Education (3 cr.)
- EDUC 5216 - Research-Based Comparative Approaches to Educational Reform (3 cr.)
- EDUC 5217 - Strategic Educational Planning and Development (3 cr.)
- EDUC 5236 - Education for Sustainable Development (3 cr.)
- EDUC 5282 - Independent Study in International & Comparative Education (3 cr.)

2. Teaching and Learning

Students in the Teaching & Learning concentration are required to complete at least three of the following courses:

- EDUC 5213 - Educational Evaluation & Assessment (3 cr.)
- EDUC 5217 - Strategic Educational Planning and Development (3 cr.)
- EDUC 5231 - Online and Blended Learning Design and Instruction in Developing Countries (3 cr.)
- EDUC 5232 - Literacy, Learning and Education (3 cr.)
- EDUC 5233 - Action Research (3 cr.)
- EDUC 5234 - Reaching Diverse and Underserved Learners (3 cr.)
- EDUC 5236 - Education for Sustainable Development (3 cr.)
- EDUC 5282 - Independent Study in International & Comparative Education (3 cr.)

Additional courses for both concentrations can be taken from among the other EDUC MA-level courses.

- EDUC 5250 - Fundamentals of Curriculum Design, Theory, & Practice (3 cr.)
- EDUC 5259 - Selected Topics in International & Comparative Education (3 cr.)

Teaching Arabic as a Foreign Language (M.A.)

Professor: Z. Taha (TAFL Program Director)

Associate Professor: R. El Essawi

Interest in the Arabic language has increased greatly throughout the world. With this has come a demand for professionals trained in the field. Based on modern theory and practice, the master's degree and the diploma programs in Teaching Arabic as a Foreign Language (TAFL) are especially designed to meet this need.

The Teaching Arabic as a Foreign Language (TAFL) master's degree requires two years' residence and covers the following areas: linguistics, second language acquisition, and methods of teaching foreign languages. Practice teaching is also required. The courses have been structured to promote research as well as to develop highly trained teachers. In addition, a number of issues related to the role of Arabic in modern society are freshly examined, such as current methods of teaching Arabic to children, reform of the writing system, grammar reform movements, and the problem of diglossia. The TAFL program seeks to inspire new approaches to these problems.

Admission

- Applicants for the Master of Arts degree in TAFL should preferably hold a Bachelor of Arts degree specializing in Arabic language, Islamic studies, Middle East area studies, or a

modern language. Applicants should also meet general university admission requirements.

- Applicants who are not specialized in Arabic language will need to:
- Take an entrance exam to be offered by the TAFL program to show that the applicant has adequate command of Arabic to qualify for admission into the program.

Take up to 12 additional credit hours before they start their courses in the TAFL program. The number of credit hours an applicant needs to take will be decided by the academic advisor based on the applicant's performance in the entrance exam, his/her undergraduate GPA, and his/her previous teaching experience. Applicants need to finish such courses with a GPA of 3.0 or more.

Language

Native speakers of Arabic who are holding degrees other than Arabic language or Islamic studies must demonstrate in an examination that their proficiency in Arabic is adequate for study in the program.

For non-native speakers of Arabic the level of language proficiency required for admission is Superior as specified by the guidelines of the American Council for the Teaching of Foreign Languages (ACTFL). Those with less but showing exceptional promise may be recommended for AUC preparatory training in Arabic for a period not to exceed one year.

An applicant who is not a native speaker of English must have sufficient command of English to qualify for admission as an AUC graduate student. Those with less but showing exceptional promise may be recommended for AUC preparatory training for a period not to exceed one year.

Applicants for the Master of Arts degree in TAFL should preferably have teaching experience prior to admission into the program or concurrently with the program. Applicants with no or little experience in teaching are required to work as unpaid teacher assistants for at least one semester before graduation.

For graduation the following is required:

- A minimum of 30 graduate credit hours and a thesis are required unless the student is not specialized in Arabic where s/he will be required to finish up to 42 credit hours as indicated in section entitled "Admission" (additional courses are listed under collateral requirements).
- Both specialized and non-specialized students have to take the core courses indicated below.

- Electives should complete the required number of credit hours. Choice will depend upon the thesis topic and the student's undergraduate field of study and must be approved by the adviser. While they are normally selected from among 5000-level TAFL courses, with the adviser's approval, electives may include up to two non-TAFL courses. No more than two 4000-level courses may be counted toward the degree.
- In some circumstances and with the adviser's approval, a candidate may be allowed to replace the thesis with two additional courses, increasing the total number of minimum credit hours required from 30 to 36 if student is specialized in Arabic. If student is not specialized in Arabic, he/she will need to finish up to 48 credit hours instead of 42. In such cases candidate would be required to take a comprehensive examination instead of writing a thesis.
- Students planning to write a thesis must attend a non-credit thesis seminar (Seminar for Thesis Writers) at least one (preferably two) semesters prior to registering for Research Guidance and Thesis course.
- The student writing a thesis must produce a professional paper on some aspect of TAFL. The thesis must be prepared under the guidance and close supervision of a faculty adviser and a designated committee.

Courses

A. For students who specialized in Arabic Language

I. Core requirements

- APLN 5202 - Second Language Acquisition (3 cr.)
- APLN 5203 - Methods of Teaching a Foreign Language I (3 cr.)
- APLN 5204 - Methods of Teaching Arabic to Non-native Speakers II (3 cr.)
- APLN 5205 - Introduction to Arabic Sociolinguistics (3 cr.)
- APLN 5206 - Seminar on Challenges Facing AFL Teachers (3 cr.)
- APLN 5301 - Principles of Linguistic Analysis (3 cr.)
- APLN 5302 - Research Methods in Applied Linguistics (3 cr.)

II. Electives

- APLN 5101 - The Phonetics of Arabic (3 cr.)
- APLN 5111 - Language Variation and Change (3 cr.)
- APLN 5212 - Designing, Selecting, and Evaluating Teaching Material for Foreign language Classes (3 cr.)
- APLN 5270 - Selected Topics in Applied Linguistics (3 cr.)
- APLN 5313 - Second Language Listening and Speaking: Theory and Practice (3 cr.)

- APLN 5322 - Language Pragmatics (3 cr.)
- APLN 5323 - Discourse of Analysis for Language Teachers (3 cr.)
  (All TESOL electives are open for TAFL students upon agreement of academic advisor.)

B. For students not specialized in Arabic Language:

I. Collateral requirements

(The number of courses taken is to be decided by the academic advisor based on result of entrance exam.)

- APLN 5101 - The Phonetics of Arabic (3 cr.)
- APLN 5102 - The Linguistics of Arabic (3 cr.)
- APLN 5103 - Advanced Arabic Grammar (3 cr.)

II. Core requirements

- APLN 5202 - Second Language Acquisition (3 cr.)
- APLN 5203 - Methods of Teaching a Foreign Language I (3 cr.)
- APLN 5204 - Methods of Teaching Arabic to Non-native Speakers II (3 cr.)
- APLN 5205 - Introduction to Arabic Sociolinguistics (3 cr.)
- APLN 5206 - Seminar on Challenges Facing AFL Teachers (3 cr.)
- APLN 5301 - Principles of Linguistic Analysis (3 cr.)
- APLN 5302 - Research Methods in Applied Linguistics (3 cr.)

III. Electives

- APLN 5111 - Language Variation and Change (3 cr.)
- APLN 5212 - Designing, Selecting, and Evaluating Teaching Material for Foreign language Classes (3 cr.)
- APLN 5270 - Selected Topics in Applied Linguistics (3 cr.)
- APLN 5313 - Second Language Listening and Speaking: Theory and Practice (3 cr.)
- APLN 5322 - Language Pragmatics (3 cr.)
- APLN 5323 - Discourse of Analysis for Language Teachers (3 cr.)
  (All TESOL electives are open for TAFL students upon agreement of academic advisor.)

Note regarding required and elective courses

Both required and elective courses are divided into two phases.

Phase one courses include:
APLN 5202

APLN 5203

APLN 5204

APLN 5301

Phase two courses include:
APLN 5102

APLN 5205

APLN 5206
and/or other elective courses that the student proposes to take in order to finish required credits. Students will have to finish phase one courses before moving to phase two courses.

Comprehensive Examination

The comprehensive examination consists of a written examination followed by an oral examination. It is required only of students not writing theses and may not be taken more than twice.

Thesis

The thesis is usually required for graduation. In some circumstances and with the adviser's approval, a candidate may be allowed to replace the thesis with two additional courses, increasing the total number of minimum credit hours required from 30 to 36. In such cases the candidate would be required to take the comprehensive examination.

The student writing a thesis must produce a professional paper on some aspect of TAFL. The thesis must be prepared under the guidance and close supervision of a faculty adviser and a designated committee.

Teaching English to Speakers of Other Languages (M.A.)

The graduate program in Teaching English to Speakers of Other Languages (TESOL) is designed to enhance knowledge, skills, and effectiveness of teachers, researchers, and administrators in the profession. This program attracts an international student body and combines rigorous academic standards with an appropriate balance between theory and practice.

Admission

It is desirable that applicants for the Master of Arts degree in TESOL have teaching experience prior to admission into the program; they may also acquire this experience concurrent with the program.

Language

Applicants who are not native speakers of English will be required to demonstrate on the TOEFL with TWE that their command of English is adequate for study in the program.

Program Requirements

For thesis writers, a minimum of 33 graduate hours plus the thesis is required. For non-thesis writers, a minimum of 36 graduate hours is required plus a comprehensive examination.

Courses

Required of all students:

- APLN 5100 - Methods of TESOL I (3 cr.)
- APLN 5104 - Second Language Acquisition (3 cr.)
- APLN 5105 - English Grammar (3 cr.)
- APLN 5301 - Principles of Linguistic Analysis (3 cr.)
- APLN 5302 - Research Methods in Applied Linguistics (3 cr.)
- APLN 5305 - Assessment in Language Learning (3 cr.)
- APLN 5397 - Methods of TESOL II (3 cr.)

Electives

In choosing electives, students with assistance of their advisors, are to choose at least two courses from each of the two categories listed below.

For students who are enrolled in the thesis track, they have to take the following course as part of their electives: APLN 5311 - Thesis Proposal Writing (3 cr.).

For students in the comprehensive exam track, they have to choose another elective from one of the two categories or from other graduate programs on campus in consultation with their academic advisor.

1. Pedagogy

- APLN 5270 - Selected Topics in Applied Linguistics (3 cr.)

- APLN 5314 - Second Language Writing: Theory and Practice (3 cr.)
- APLN 5317 - Integrating Technology into Language Pedagogy (3 cr.)
- EDUC 5221 - Transformational Education (3 cr.)

2. Linguistics

- APLN 5270 - Selected Topics in Applied Linguistics (3 cr.)
- APLN 5321 - Corpus Linguistics (3 cr.)
- APLN 5322 - Language Pragmatics (3 cr.)
- APLN 5323 - Discourse of Analysis for Language Teachers (3 cr.)
- APLN 5331 - Sociolinguistics (3 cr.)

Thesis

The thesis as a requirement for graduation is optional. The student who chooses to write a thesis must produce a professional paper on some aspects of TESOL. The thesis must be prepared under the guidance and close supervision of a faculty adviser and a designated committee, and must be defended to the satisfaction of the department. The thesis defense is not open to the public.

Comprehensive Examination

The Comprehensive Examination consists of a written examination followed by an oral examination. It is required only of students not writing theses, and may not be taken more than twice.

Graduate Diploma

Educational Leadership (Graduate Diploma)

The Graduate Diploma in Educational Leadership is offered by the Department of Applied Linguistics and Educational Studies, School of Humanities and Social Sciences. This Diploma is designed as a one-year (two semesters) program for students who wish to enhance their qualifications or pursue an academic interest in the field of educational leadership.

Admission

Applicants must meet the same admissions requirements as those for the MA in Educational Leadership. Should a student in good standing decide during or within one semester after completion of the requirements for the Diploma that he/she wishes to work towards the MA degree, he/she may apply to transfer to the MA degree.

Courses (18 credit hours)

Course work for the Graduate Diploma requires the completion of 18 credits as follows:

Required Courses

12 credits Required / 4 courses
EDUC 5202 - Social Foundations of Education (3 cr.)
EDUC 5204 - Human Development & Learning Theory (3 cr.)
EDUC 5221 - Transformational Education (3 cr.)
EDUC 5223 - Organizational Theory and Educational Institutions (3 cr.)

Electives
6 credits Required / 2 courses

Students should take two additional electives from among the 5000-level courses in Educational Leadership offered by the Department that best meet their professional goals, with approval from their academic advisor.

Inclusive Education (Graduate Diploma)

The Graduate Diploma in Inclusive Education is offered by the Department of Psychology and the Department of Applied Linguistics and Educational Studies. This Diploma is designed as a one-year (two semester) program. This graduate diploma focuses on inclusive education, which is about how schools, classrooms, programs, and activities are developed and designed so that all students of different abilities and backgrounds can effectively learn and participate together. Students with learning difficulties and other challenges should not be segregated, stigmatized, or excluded from educational opportunities, and students who are gifted and talented should not have their potential constrained by the academic system. Relevant and adequate education for all learners is a human right, under the Convention for the Rights of Disabled Persons and the Universal Declaration of Human Rights (both of which Egypt has ratified). In addition, the Egyptian Constitution also guarantees access to appropriate educational opportunities for students with learning disabilities and those who are gifted (Articles. 81 & 82, 2014). The program is unique in the region because it is jointly offered by the Department of Applied Linguistics and Educational Studies and the Department of Psychology, with interdisciplinary perspectives enhancing the theory and methods taught. This will provide students with broader well-rounded skills, attract students from both education and psychology sectors, and open up diverse job and educational

pathways for graduates. This Graduate Diploma could be a stepping stone towards a future masters or doctorate for educators who wish to develop a more specialized level of expertise.

Admission

All applicants must have a bachelor's degree. Applicants should have at least two years relevant full-time work experience. Admission is competitive, and dependent on a successful interview.

Courses (18 credit hours)

Course work for the Graduate Diploma requires the completion of 18 credits as follows:

Required Courses

18 credits Required / 6 courses

Semester 1

EDUC 5204 - Human Development & Learning Theory (3 cr.)

EDUC 5234 - Reaching Diverse and Underserved Learners (3 cr.)

PSYC 5205 - Psychology in the Schools (3 cr.)

Semester 2

EDUC 5238 - Programs and Environments for Inclusive Education (3 cr.)

PSYC 5255 - Assessment and Evaluation for Learning Enrichment (3 cr.)

PSYC 5265 - Applied Projects in Inclusive Education (3 cr.)

International & Comparative Education (Graduate Diploma)

The Graduate Diploma in International & Comparative Education is offered by the Department of Applied Linguistics and Educational Studies, School of Humanities and Social Sciences. This Diploma is designed as a one-year (two semesters) program for students who wish to enhance their qualifications or pursue an academic interest in the field of education.

Admission

Applicants must meet the same admissions requirements as those for the MA in International & Comparative Education. Should a student in good standing decide during or within one semester

after completion of the requirements for the Diploma that he/she wishes to work towards the MA degree, he/she may apply to transfer to the MA degree.

Courses (18 credit hours)

Course work for the Graduate Diploma requires the completion of 18 credits as follows:

Required Courses

12 credits Required / 4 courses
EDUC 5202 - Social Foundations of Education (3 cr.)
EDUC 5203 - Introduction to International & Comparative Education (3 cr.)
EDUC 5204 - Human Development & Learning Theory (3 cr.)
EDUC 5215 - Educational Policy Analysis (3 cr.)

Electives

6 credits Required / 2 courses

Students should take two additional electives from among the 5000-level courses in International & Comparative Education offered by the Department that best meet their professional goals, with approval from their academic adviser.

TAFL (Graduate Diploma)

The diploma program in TAFL is designed for qualified teachers of Arabic who meet the same admission requirements as those for the master's degree. The diploma requires the successful completion of 18 credit hours (six courses). These will consist of five core courses, plus one elective.

Required Courses:

Students must complete the following five TAFL courses.

- APLN 5102 - The Linguistics of Arabic (3 cr.)
- APLN 5203 - Methods of Teaching a Foreign Language I (3 cr.)
- APLN 5204 - Methods of Teaching Arabic to Non-native Speakers II (3 cr.)
- APLN 5270 - Selected Topics in Applied Linguistics (3 cr.)
- APLN 5305 - Assessment in Language Learning (3 cr.)

Elective Courses:

One three-hour elective course to be decided upon by the student in consultation with the graduate advisor.
A maximum of one appropriate course may be accepted, with departmental approval, as transfer credit toward the diploma in lieu of APLN 5305 , APLN 5203, APLN 5102, or an acceptable elective.

TESOL (Graduate Diploma)

The Diploma program is designed for qualified teachers of English who meet the same admission requirements as those for the Master of Arts degree. To be awarded the diploma, students must successfully complete the following 18 credits of program requirements.

Required Courses (12 credits)

- APLN 5100 - Methods of TESOL I (3 cr.)
- APLN 5104 - Second Language Acquisition (3 cr.)
- APLN 5105 - English Grammar (3 cr.)
- APLN 5301 - Principles of Linguistic Analysis (3 cr.)

Elective Courses (6 credits)

Two three-hour additional courses to be decided upon by the student in consultation with the academic adviser.

A maximum of one appropriate course may be accepted

With departmental approval, as transfer credit toward the Diploma in lieu of the following:

- APLN 5100 - Methods of TESOL I (3 cr.)
- APLN 5104 - Second Language Acquisition (3 cr.)
- APLN 5301 - Principles of Linguistic Analysis (3 cr.)
- APLN 5397 - Methods of TESOL II (3 cr.)
  or an acceptable elective

The Sheikh Hassan Abbas Sharbatly Department of Arab and Islamic Civilizations

Professors Emeritus: M. El Rabie, S. Mehrez

Distinguished University Professor: N. Hanna

Professors: A. Dallal (AUC President), M. Pomerantz (HUSS Dean), B. O'Kane, M. Serag

Associate Professor Emeritus: H. Lutfi

Associate Professors: A. Elbendary (Chair), D. Heshmat, A. Talib

Assistant Professors: N. Abou Khatwa, T. EL Leithy, A. Khan

Bachelor of Arts

Arabic Studies (B.A.)

Bachelor of Arts

Our students specialize in the history and culture of the Middle East. Upon graduation, they will be ready to succeed in careers that require cultural competence, communication skills, project management, and critical thinking.

To declare a major in Arabic Studies, a student must have earned a grade of B or higher in one ARIC course.

A total of 120 credits is required for a bachelor's degree in Arabic Studies.

Language Component

Students are encouraged to take up to 18 elective credits of Arabic language courses. Students who have passed the Thanawiya ʿAmma Arabic exam are well prepared to succeed in our program.

Core Curriculum (40 credits)

Concentration Requirements (36 credits)

Students will complete four foundation courses:

- ARIC 2102 - Modern Arabic Literature (3 cr.)
- ARIC 2205 - The World of Islamic Architecture (3 cr.)
- ARIC 2346 - Survey of Arab History (3 cr.)
- ARIC 3435 - Introduction to the Study of Islam (3 cr.)

Additional Requirements

In addition, students will also complete 24 credits of ARIC courses, at least 15 of which should be taken above the 2000-level.

Electives

44 credits, to be selected in consultation with the major advisor.

Minors

Arab and Islamic Civilizations Minor

Requirements (15 credits):

Any five courses offered by the department (ARIC).

Arabic Literature Minor

Program Requirements (15 credits):

Students should take two (2) introductory courses in sequence either:

- ARIC 2101 - Classical Arabic Literature (3 cr.)
- ARIC 2102 - Modern Arabic Literature (3 cr.)

Or

- ARIC 2103 - Classical Arabic Literature in Translation (3 cr.)
- ARIC 2104 - Modern Arabic Literature in Translation (3 cr.)

Students will also take three (3) courses from the following, depending on the student's area of interest:

- ARIC 3097 - Selected Themes and Topics in Arabic Literature (3 cr.)
- ARIC 3104 - Arabic Literature and Gender (3 cr.)
- ARIC 3106 - Arabic Literature and Film (3 cr.)
- ARIC 3107 - The Writer and the State (3 cr.)
- ARIC 3108 - Colloquial and Folk Literature (3 cr.)
- ARIC 3114 - The Arabic Novel (3 cr.)
- ARIC 3115 - Arabic Drama (3 cr.)
- ARIC 3116 - The Arabic Short Story (3 cr.)
- ARIC 3197 - Selected Themes and Topics in Arabic Literature in Translation (3 cr.)
- ARIC 5110 - Senior Seminar in Arabic Texts (3 cr.)
- ARIC 5111 - Senior Seminar in Arabic Literature in Translation (3 cr.)
- ARIC 5112 - Arabic Literary Criticism (3 cr.)

Islamic Art and Architecture Minor

This minor gives a greater appreciation of the cultural heritage of the Arab-Islamic world to interested students.

Requirements (15 credits):

- ARIC 2206 - The City of Cairo (3 cr.)
- ARIC 2270 - Islamic Art And Architecture (650-1250) (3 cr.)
- ARIC 2271 - Islamic Art And Architecture (1250-1800) (3 cr.)

Two of the following:

- ARIC 3268 - The Art of the Book in the Islamic World (3 cr.)
- ARIC 3269 - The Arts of Fire: Ceramics and Glass of the Islamic World (3 cr.)
- ARIC 3272 - Building the Sultanate: Architecture under the Ayyubids and Mamluks in Egypt and Syria (3 cr.)
- ARIC 5122-5123 - Islamic Architecture in Turkey, Persia and Central Asia (3 cr.)

Islamic History Minor

A Minor for students interested in Islamic History.

Requirements (15 credits)

5 courses from the following, depending on the student's area of interest:

- ARIC 2346 - Survey of Arab History (3 cr.)
- ARIC 3020 - Introduction to Sufism (3 cr.)
- ARIC 3321 - Zawiyas, Harems, Coffee shops, Everyday Life in the Pre-Modern Mideast (3 cr.)
- ARIC 3324 - Non-Muslim Communities in the Muslim World (3 cr.)
- ARIC 3343 - Early Islamic History (3 cr.)
- ARIC 3344 - Caliphs and Sultans in the Age of Crusades and Mongols (3 cr.)
- ARIC 3345 - Gunpowder Empires: Ottomans, Safavids and Mughals (3 cr.)
- ARIC 3353 - Islamic Political Thought (3 cr.)
- ARIC 3355 - State and Society in the Middle East, 1699-1914 (3 cr.)
- ARIC 3356 - State and Society in the Middle East, 1906-present (3 cr.)
- ARIC 3397 - Selected Topics in Middle East History (3 cr.)
- ARIC 5133 - Islamic Institutions (3 cr.)
- ARIC 5135 - Selected Topics in Middle Eastern History, 600-1800 AD (3 cr.)
- HIST 4217 - Colonialism and Imperialism: Domination and Resistance (3 cr.)

Islamic Studies Minor

The minor is designed for students who wish to gain a deeper knowledge and appreciation of Islam as a culture.

Requirements (15 credits):

- ARIC 2001 - Religion and Politics in Islam (3 cr.)
- ARIC 3098 - Selected Topics in Islamic Studies (3 cr.)
- ARIC 3435 - Introduction to the Study of Islam (3 cr.)

And two of the following:

- ARIC 1300 - Arabs and Muslims Encountering the Other (3 cr.)
- ARIC 2205 - The World of Islamic Architecture (3 cr.)
- ARIC 3020 - Introduction to Sufism (3 cr.)
- ARIC 3343 - Early Islamic History (3 cr.)
- ARIC 5113 - Sira and Hadith (3 cr.)
- ARIC 5133 - Islamic Institutions (3 cr.)
- ARIC 5141 - Studies in the Qur'an (3 cr.)
- ARIC 5142 - Islamic Law (3 cr.)

Master of Arts

Arabic Studies, with specializations in Islamic Art and Architecture, Arabic Language and Literature, Middle Eastern History and Islamic Studies (M.A.)

The Sheikh Hassan Abbas Sharbatly Department of Arab and Islamic Civilizations (ARIC) offers a Master's degree in Arabic Studies with one of four specializations: Arabic Language and Literature, Islamic Art and Architecture, Islamic Studies, and Middle Eastern History. The program is designed to give students a solid academic background in the ideas and traditions that form the foundation of the important contributions of the Arab and Muslim peoples to human civilization. Course offerings cover the Arab and Islamic world from the seventh century to the modern era. All students must write a master's thesis based on research using original Arabic language sources. There is no comprehensive exam option. The master's degree in Arabic Studies is best-suited for students who hope to pursue a career in academia, but it will also prove invaluable to students who want to go into diplomacy, government service, journalism, and similar fields.

The student may choose one of the following areas of specialization

1. Arabic Language and Literature
2. Islamic Art and Architecture
3. Islamic Studies
4. Middle Eastern History

Admissions Criteria

Applicants should have earned a minimum GPA of 2.75 (or gayyid) in their undergraduate degree. The department has a preference for applicants who have an academic background in Arabic and Islamic Studies or related fields and who have studied the Arabic language at university level for at least one year. Applicants who do not satisfy these criteria may be asked to take pre-requisite courses. Applicants should also meet the university's English-language proficiency requirements. Admission to the program is competitive and applicants will be interviewed by an admissions committee of the department.

Courses

Students must complete a minimum of eight graduate courses to earn the MA degree. A minimum of six courses must be from within the area of specialization and with the approval of the chair, students can take up to two courses outside their area of specialization.

To fulfill specialization requirements, student should complete the following courses:

For Arabic Language and Literature specialization

Choose one of the following:

- ARIC 5210 - Seminar on a Selected Work or Author in Classical Arabic Literature (3 cr.)
- ARIC 5211 - Seminar on Modern Arabic Literature: Nineteenth Century (3 cr.)
- ARIC 5212 - Seminar on Modern Arabic Literature: Twentieth Century (3 cr.)

In addition to:

- ECLT 5255 - Research Methods in Literature (3 cr.)

For Islamic Art and Architecture specialization

Choose one of the following:

- ARIC 5127 - Selected Topics in Islamic Art and Architecture (3 cr.)
- ARIC 5150 - On Display: Collecting and Exhibiting Art of the Islamic World (3 cr.)

- ARIC 5151 - Heritage Management and Architectural Conservation in Cairo: Theory and Practice (3 cr.)

For Islamic Studies Specialization

Choose one of the following:

- ARIC 5141 - Studies in the Qur'an (3 cr.)
- ARIC 5241 - Seminar on Selected Topics in Sira or Hadith (3 cr.)

Students may also choose one of the following:

- ARIC 5242 - Seminar on Selected Topics in Islamic Law and Legal Theory (3 cr.)
- ARIC 5243 - Selected Topics in Islamic Theology, Sufism or Philosophy (3 cr.)

For Middle Eastern History specialization

Choose one of the following:

- ARIC 5230 - Seminar on a Selected Topic in Medieval Arab/Islamic History, 600-1800 A.D. (3 cr.)
- ARIC 5231 - Seminar on the Nineteenth-Century Middle East (3 cr.)
- ARIC 5232 - Seminar on the Twentieth-Century Middle East (3 cr.)

Language Requirements

To be eligible for the master of arts degree in Arabic Studies the student must reach an acceptable level of proficiency in advanced literary Arabic as established by examinations. The student whose degree concentration is Arabic language and literature is expected to go beyond this minimum requirement. The student whose degree concentration is Islamic Art & Architecture is expected to attain the equivalence of ALNG 2101-2102-2103 by test. The student whose degree concentration is history must reach the ALNG 3103-3104 level or its equivalent before writing his/her thesis. To be eligible for the degree of master of arts in Arabic studies, the student must also demonstrate through examination a reading knowledge of at least one major language other than English, preferably French or German. If the student's research can be performed successfully without knowledge of a third language, the department may exempt the student from this requirement.

Thesis

A thesis is required in all four areas of specialization within the master of arts in Arabic studies. The thesis must be written in English and submitted in accordance with university regulations.

Middle East Studies (M.A.)

The Middle East Studies is an interdisciplinary academic program designed to provide students with a comprehensive understanding of the peoples, societies and economies of the region. The graduate program offers courses in Arabic language and literature, anthropology, economics, gender and women's studies, history, law, political science and sociology with the purpose of introducing students to a variety of methodologies for studying the Middle East. The graduate program focuses on the period from the 18th century onwards and addresses issues of religion, ecology, history, economy, society, polity, gender, and culture. Given the geographical location of Cairo, the program as a whole concentrates on the Arab region. The program is intended for students who wish to pursue a variety of careers such as academia, diplomacy, other government service, work with NGOs, development, business, finance, journalism, public relations and cultural affairs.

Admission

The master's degree program in Middle East Studies is an interdisciplinary degree program. Applicants for admission should have an undergraduate degree of high standing (GPA of 3.0 or higher). Prerequisites are often assigned depending on the individual student's academic background. The program is designed to meet the needs of aspiring professionals who need in-depth knowledge of the modern Middle East as well as those intending to pursue an academic career.

Language

To obtain the MA each candidate must demonstrate, in addition to the normal university requirements in English, proficiency in Modern Standard Arabic up to the completion of ALNG 1101-1102-1103.

Proficiency is tested by an examination administered by the Department of Arabic Language Instruction. Students who have no background in Arabic are strongly advised to enroll in the summer intensive course (20 contact hours a week, 12 credits) of the Arabic Language Unit before beginning their MA program.

Courses

Ten courses are required for the MA degree (Eight for those who choose to write an MA thesis and enroll in MEST 5298 and MEST 5299. The following two courses are required:

- MEST 5201 - A Critical Introduction to Middle East Studies (3 cr.)
- MEST 5202 - Interdisciplinary Seminar in Middle East Studies (3 cr.)

Students must choose three of the following courses:

An approved 4000 or 5000 level course in modern Arabic literature.

- ARIC 5133 - Islamic Institutions (3 cr.)
- ARIC 5135 - Selected Topics in Middle Eastern History, 600-1800 AD (3 cr.)
- ARIC 5137 - International Trade 1000 - 1700: Egypt and the Mediterranean - Red Sea Trade (3 cr.)
- ARIC 5231 - Seminar on the Nineteenth-Century Middle East (3 cr.)
- ARIC 5232 - Seminar on the Twentieth-Century Middle East (3 cr.)
- ECON 5252 - Economic Development in Middle East Countries (3 cr.)
- GWST 5101 - Visual, Literary, and Critical Approaches to Gender in MENA (3 cr.)
- LAW 5161 - Islamic Law Reform (3 cr.)
- MEST 4301 - Special Topics in Middle East Studies (3 cr.)
- POLS 5258 - Comparative Politics of the Middle East (3 cr.)
- PPAD 5154 - Contemporary Security Issues in the Middle East (3 cr.)

Note

The other five courses (or three for thesis writers) may be selected from 4000 or 5000 level courses related to the Middle East in Anthropology/Sociology, Arabic Studies, Economics, Gender and Women's Studies, History, Law, Middle East Studies, Migration & Refugee Studies, Public Policy & Administration and Political Science. No more than two 4000 level courses may be counted towards the degree and only one course originally at the 4000 level, but for which requirements are added to raise it to 5000 level may be applied towards the degree. Students must consult with their advisor to ensure an adequate coverage of social science and history.

Thesis

Students opting to do a thesis must complete a thesis in accordance with university regulations. Before commencing work on the thesis, the student must have a thesis proposal approved by three faculty members.

Comprehensive Examination

Students not opting to do a thesis will, after the completion of all course requirements, take a comprehensive examination administered by an interdisciplinary examining board. An oral examination will be given following the written test.

Graduate Diploma

Arabic Studies (Graduate Diploma)

An opportunity for students who do not plan to pursue doctoral research or academic careers to study the history, culture, religion, literature, and material culture of the Arab and Islamicate worlds.

An opportunity for students with a background in history, literature, art history, etc. to complement their knowledge with specific study pertaining to the Arab and Islamicate worlds.

Admission Requirements

Same as for existing MA programs taught in the department. If a student in good standing decides during the course of their diploma that they would like to transfer to an MA program, they may apply via the standard procedure for graduate admissions.

Requirements

Students will take six (6) courses from at least two different disciplinary specializations taught in the Department of Arab & Islamic Civilizations.

Two (2) of the six (6) courses should be chosen from the following list:

- ARIC 5101 - Selected Topics in the History of Islamic Thought and Institutions (3 cr.)
- ARIC 5135 - Selected Topics in Middle Eastern History, 600-1800 AD (3 cr.)
- ARIC 5141 - Studies in the Qur'an (3 cr.)
- ARIC 5210 - Seminar on a Selected Work or Author in Classical Arabic Literature (3 cr.)
- ARIC 5211 - Seminar on Modern Arabic Literature: Nineteenth Century (3 cr.)
- ARIC 5212 - Seminar on Modern Arabic Literature: Twentieth Century (3 cr.)
- ARIC 5221 - Seminar on the Architecture of a Selected Period (3 cr.)
- ARIC 5230 - Seminar on a Selected Topic in Medieval Arab/Islamic History, 600-1800 A.D. (3 cr.)
- ARIC 5240 - Seminar on Selected Topics in Qur'anic Studies (3 cr.)
- ARIC 5243 - Selected Topics in Islamic Theology, Sufism or Philosophy (3 cr.)

Middle East Studies (Graduate Diploma)

The diploma program in Middle East Studies is designed to fill the need for familiarity with modern Middle Eastern culture and society, particularly for students who have not been exposed to an intensive study of the Middle East at the undergraduate level.

Students are expected to finish the program in two semesters, though they may take up to four semesters to complete their requirements.

Admission

An applicant should have an undergraduate degree of high standing (a GPA of 3.0 or above). Prerequisites may be assigned depending on the applicant's academic background.

Language

To obtain the diploma each candidate must demonstrate, in addition to the normal university requirements in English, proficiency in Modern Standard Arabic up to the completion of ALNG 1101-1102-1103.

Courses

Five courses are required for the Diploma, from at least three departments. Students can take a maximum of two courses at the 4000 level. Students must take three of the following courses:

ARIC 5133 - Islamic Institutions (3 cr.)
ARIC 5232 - Seminar on the Twentieth-Century Middle East (3 cr.)
or
HIST 5223 - Seminar on the Twentieth-Century Middle East (3 cr.)
ECON 5252 - Economic Development in Middle East Countries (3 cr.)
MEST 5201 - A Critical Introduction to Middle East Studies (3 cr.)

The remaining two courses must be related to the Middle East, from Arab & Islamic Civilizations, Economics, Gender and Women's Studies, History, Law, Middle East Studies, Political Science, Anthropology/Sociology, Migration & Refugee Studies or Public Policy & Administration.

Department of English & Comparative Literature

Professors: W. Melaney, S. Salaita (Chair)

Assistant Professor: M. Moraw

Bachelor of Arts

English and Comparative Literature (B.A.)

Bachelor of Arts

The B.A. program in English and Comparative Literature provides students with an understanding of the role that literature plays in presenting people with images of themselves, their society, and culture, and introduces them to a wide range of ways in which literature responds to central problems of human experience.

Declaration Policy

A minimum grade of C in at least one ECLT course at the 2000-level or above and registering for the required program of the major.

Degree Requirements

A total of 120 credits is required for the bachelor's degree in English and Comparative literature in the following areas; I. Core Curriculum (37 credits), II. English & Comparative Literature Concentration Requirements (42 credits), III. Collateral Requirements (3 credits), IV. General Electives (38 credits).

Students are strongly encouraged to start with introductory courses followed by a combination of Period courses and Thematic courses.

I. Core Curriculum (37 credits)

The remaining 3 credit hours required to satisfy the Core Curriculum are fulfilled by completing one of the English and Comparative Literature major capstone courses ECLT 4099, ECLT 5106, ECLT 5108, ECLT 5109.

II. English and Comparative Literature Concentration Requirements (42 credits)

All students must complete the following courses:

Introductory Courses (6 credits)

- ECLT 2010 - Introduction to Literature (3 cr.)
  and
- ECLT 2011 - Survey of British Literature (3 cr.)

Ancient and Medieval Literature (3 credits)

Choose one out of the following courses:

- ECLT 3001 - Medieval Literature (3 cr.)
- ECLT 5106 - Greek Classics in Translation (3 cr.)

Early Modern Literature (3 credits)

Choose one out of the following courses:

- ECLT 3002 - Renaissance and Early Modern Literature (3 cr.)
- ECLT 3060 - Shakespeare (3 cr.)

Modern Literature (3 credits)

Choose one out of the following courses:

- ECLT 3005 - Romanticism (3 cr.)
- ECLT 3006 - Nineteenth-Century European Literature (3 cr.)

Modernism and Contemporary Literature (3 credits)

Choose one out of the following courses:

- ECLT 3008 - Modern European and American Literature (3 cr.)
- ECLT 3048 - Contemporary Literature (3 cr.)

American Literature (3 credits)

Choose one out of the following courses:

- ECLT 3010 - American Literature to 1900 (3 cr.)
- ECLT 3011 - Modern American Literature (3 cr.)

Literary Criticism (6 credits)

- ECLT 5108 - History of Literary Criticism (3 cr.)
- ECLT 5109 - Modern Literary Criticism (3 cr.)

Three ECLT electives to be chosen from the following courses (9 credits)

- ECLT 2019 - Introduction to American Studies (3 cr.)
- ECLT 3014 - Literature and Philosophy (3 cr.)
- ECLT 3030 - Literature and Cinema (3 cr.)
- ECLT 3032 - World Literature (3 cr.)
- ECLT 3033 - African Literature (3 cr.)

- ECLT 3045 - Literature and Gender (3 cr.)
- ECLT 3046 - Third World Literature (3 cr.)
- ECLT 3052 - Recurrent Themes in Literature (3 cr.)
- ECLT 3053 - Modern Drama (3 cr.)
- ECLT 3070 - Creative Writing (3 cr.)
- ECLT 3099 - Selected Topics (3 cr.)
- ECLT 4099 - Capstone Seminar: Selected Topics (3 cr.)

Any two additional 2000-level or above ECLT courses (6 credits)

III. Collateral Requirements (3 credits)

All students seeking a Bachelor of Arts in English and Comparative Literature degree must complete ONE 3000/4000 level course in Arabic Literature (in Arabic or in translation).

IV. General Electives (38 credits)

Minors

English and Comparative Literature Minor

The minor in English and Comparative Literature introduces students to the analysis of the various literary genres and seeks to foster a critical appreciation and love of literature as well as an understanding of its role in society and culture.

Requirements (15 credits):

Any five literature courses offered by the department, exclusive of 1000-level courses.

Master of Arts

English and Comparative Literature (M.A.)

Students in the English and Comparative Literature master's program conduct comparative research on the works of English and American authors, in addition to other European and non-Western works. Over the course of the program, students become familiar with a variety of national literatures, study important critical and theoretical approaches in literary studies, and develop skills in literary analysis, critical thinking, research, and writing. Towards the end of their coursework, students shape their research interests into an MA thesis project in consultation with

their advisor and write a thesis proposal. The eight courses required of students fully admitted into the program can be completed in two years, and are followed by the thesis.

Admission Criteria

An applicant for admission to the master's program in English and comparative literature should have a considerable background in the study of literature. Applicants who are not native speakers of English or graduates of English and comparative literature at AUC will be required to demonstrate that their command of English is adequate for study in the program. Accepted tests and required scores: International TOEFL: iBT TOEFL: 5 (old scale: 92-99); iBT Writing: 5 (old scale: 25-26); Academic IELTS: IELTS Band Score: 7; IELTS Writing: 7. For other accepted tests and additional information, please check the AUC Graduate Admissions website.

Degree Requirements

A minimum of twenty-four graduate hours is required. Normally, eight courses are to be taken at the 5000 level. However, up to two of the eight courses might be taken at the 4000-level.

No more than two graduate-level courses may be transferred from another university.

With permission of the student's adviser and the chair of the department, a student may take graduate coursework in another department provided that its content is directly concerned with the area of the student's degree work. No more than two such courses will be accepted for credit toward the master's degree.

Required Courses

All students admitted to the graduate program will be required to take the following courses, unless they have taken these courses at the undergraduate level.

- ECLT 5106 - Greek Classics in Translation (3 cr.)
- ECLT 5108 - History of Literary Criticism (3 cr.)
- ECLT 5109 - Modern Literary Criticism (3 cr.)
- ECLT 5255 - Research Methods in Literature (3 cr.)

Electives (12 credits)

- ECLT 5101 - Visual, Literary, and Critical Approaches to Gender in MENA (3 cr.)
- ECLT 5110 - Renaissance Writers (3 cr.)
- ECLT 5116 - The Romantic Movement (3 cr.)
- ECLT 5117 - Nineteenth-Century Writers (3 cr.)

- ECLT 5123 - Modern Poets (3 cr.)
- ECLT 5131 - The Modern Novel (3 cr.)
- ECLT 5140 - Readings in American Literature (3 cr.)
- ECLT 5142 - Readings in French Literature (3 cr.)
- ECLT 5143 - Readings in British Literature (3 cr.)
- ECLT 5199 - Selected Topics (3 cr.)

Language

Before writing a thesis the student must demonstrate, in an examination, knowledge of either French or German. At the discretion of the department another modem language may be substituted, should it be more pertinent to the student's field of interest. The exam for both languages will take place in Spring and Fall of each year.

Thesis

The department conceives of the thesis as a research paper at the recommended length of forty to sixty pages (10,000 to 15,000 words), double-spaced, standard font, which should demonstrate by its high quality the student's ability to handle the techniques of research and to write critically and pointedly about a given subject. The topic must be chosen from subjects in the student's area of concentration. It must be acceptable to the student's thesis director in the light of his/her special qualification and his/her judgment of the student's capability, and the availability of the required library facilities.

A proposal must be submitted to, and approved by, the first and second readers as well as the department chair. This should be approximately one to two thousand words. A working bibliography should be included. There will be a final defense of the thesis and related topics.

Graduate Diploma

Comparative Literary Studies (Graduate Diploma)

The Diploma is administered by the Department of English and Comparative Literature. It offers a program in Literature and Literary Studies, that is both multi-cultural and interdisciplinary, for students from Egypt and abroad. There is a demand-both intellectual and vocational-in our intertwined world to understand how different cultures and linguistic traditions represent themselves and imagine their world. The Program is designed to familiarize the students with the comparative approach to literature and the interdisciplinary nature of literary studies while highlighting how comparative literary studies contribute to new directions in professional and academic developments. It brings the tools and insights of literary and cultural criticism to bear

on contemporary concerns from human rights to gender issues, particularly as influenced by, and in, the "global south." The program requires students to take eighteen credit hours of courses and seminars. The Diploma can be completed in two semesters by full-time students, but the Program can accommodate part-time students. Should the Diploma student in good standing decide during or after completion of the requirements to work towards an MA degree, the student may apply to transfer to the MA degree but must then meet the requirements of the MA program.

Admission

Applicants seeking admission to the Graduate Diploma in Comparative Literary Studies must have completed an undergraduate degree in any field. They are required to meet the graduate admission standards of AUC and meet the English language requirements of the Department of English and Comparative Literature. Information concerning these can be found in the AUC catalog and the Office of Graduate Admission.

Curriculum

Students take a total of six courses and sit for an examination in a language of their choice other than English. Each diploma student is assigned a faculty advisor who will recommend courses and seminars, taking into consideration the vocational and intellectual interest of the student. Students can take up to six ECLT courses with at least four courses in ECLT and up to two graduate courses in specified departments and programs of HUSS/GAPP. These two basic models would allow one course to vary in kind:

- 6 ECLT courses. 18 cr.

Or

- 4 ECLT courses. 12 cr.
- 2 Humanities/Social Sciences courses relevant to comparative and interdisciplinary studies, approved by the student advisor and by the instructor of the course, from the following fields:

Arabic Literature (either in Arabic or in translation)
Gender and Women's Studies
Migration and Refugee Studies
International Human Rights Law
Sociology/Anthropology

Sultan Al-Qasimi Department of History

Professor: A. Ezz el Arab

Associate Professors: M. Deets, P. Ghazaleh (Chair), H. Kholoussy

Assistant Professor: O. Schouteden

The study of history lies at the foundation of a liberal arts education. It teaches crucial intellectual and analytical skills, and develops communication abilities. It plays a key role in instilling curiosity and discernment, and in teaching people how not to be misled. Understanding the past allows us to better understand the present and to prepare intelligently for the future, and is especially important in an increasingly globalized and fast-changing world.

Bachelor of Arts

History (B.A.)

Bachelor of Arts

The History major provides students with the tools and methods necessary to study different periods and parts of the modern world chronologically, geographically, and thematically in order to make sense of the past, participate in the present, and prepare for the future. Courses teach students how to critically think, write, and speak, academically and professionally, equipping them with essential skills for any career or graduate program they pursue. History is the heart of the humanities and the cornerstone of an international liberal arts education, which shapes socially-aware and culturally-sensitive citizens of the world. Because so many of the major's courses fulfill core and collateral requirements, it serves as an ideal double major or minor for students who want to complete their degree on time.

Declaration Policy

Students need to pass at least one HIST course before they meet with a faculty member to declare.

Degree Requirements

A total of 120 credits is required for the bachelor's degree in History in the following areas: I. Core Curriculum (37 credits), II. History Concentration Requirements (6 credits), III. History Electives (30 credits), IV. General Electives (47 credits).

I. Core Curriculum (37 credits)

The remaining 3 credit hours required to satisfy the Core Curriculum are fulfilled by completing any History major capstone course from among the following:

- HIST 4111 - Arabs in America (3 cr.)
- HIST 4113 - Ideas Dictators Hate (3 cr.)
- HIST 4188 - Selected Topics in World History (3 cr.)
- HIST 4215 - The Marriage Crisis and the Middle East (3 cr.)
- HIST 4216 - Remembering Cairo (3 cr.)
- HIST 4219 - Modern Movements in Islam (3 cr.)
- HIST 4288 - Selected Topics in the History of the Modern Middle East (3 cr.)
- HIST 4290 - Selected Topics in Modern Egyptian History (3 cr.)
- HIST 4303 - Global Capitalism and Africa: An Economic History (3 cr.)
- HIST 4488 - Selected Topics in European History (3 cr.)
- HIST 4588 - Selected Topics in the History of the United States (3 cr.)

II. History Concentration Requirements (6 credits)

- HIST 2000 - How to Use a Time Machine? Investigating the Past (3 cr.)
- HIST 4801 - Historical Theory and Methodology (3 cr.)

III. History Electives (30 credits)

Ten 3-credit History courses of which six courses must be above the 2000 level including at least one History major capstone.

IV. General Electives (47 credits)

To be selected in consultation with a History faculty advisor.

Minors

Comparative Religion Minor

The minor in Comparative Religion is designed to allow students with an interest in religious studies to follow a flexible, interdisciplinary course of study by choosing from a selection of courses with varied methodological approaches to religions both past and present.

Requirements (15 credits):

- CREL 2603 - Religions of the World (3 cr.)
- CREL 4000 - The Bible and Ancient Texts (3 cr.)

- CREL 4001 - Three Faiths, One Father (3 cr.)

Either two further CREL courses or any two of the following courses (6 credits):

- ANTH 4025 - Religion in a Global World (3 cr.)
- ANTH 4030 - Women, Islam and the State (3 cr.)
- ARIC 3020 - Introduction to Sufism (3 cr.)
- ARIC 3324 - Non-Muslim Communities in the Muslim World (3 cr.)
- ARIC 3353 - Islamic Political Thought (3 cr.)
- ARIC 3435 - Introduction to the Study of Islam (3 cr.)
- EGPT 5144 - Ancient Egyptian Religion and Ethics (3 cr.)
- PHIL 2112 - Philosophy of Religion (3 cr.)

Note

With the approval of the CREL advisor, other 3000 or 4000 level courses on Islam from ARIC, HIST, POLS, ANTH, SOC or PHIL may be substituted for the non-CREL courses listed above.

History Minor

The minor in History is designed to provide students with a substantial introduction to the craft of history while allowing them to choose their own areas of interest.

Requirements (15 credits)

Any five history courses offered by the department, exclusive of 1000-level courses.

Department of Philosophy

Professor Emeritus: W. Lammi

Associate Professors: A. Topa (Chair), C. Belo, R. Fincham, R. Switzer

Assistant Professors: A. Ellis, E. Metz, A. Schneck, T. Rule

The study of philosophy involves engaging in a process of coming to terms with oneself, and thus with one's place in the world. This requires a clear and careful thinking of a wide ranging sort, questioning assumptions and attitudes, analyzing problems thoroughly and seeking their solutions through sound reasoning and evidence. Some of the major concerns addressed by philosophy are: moral and socio-political values, the nature of knowledge, the relation of the mind to the body, the principles of the sciences, the arts, and religion. Philosophy aims, in

addition, comprehensively to situate these subjects in terms of underlying questions about the meaning of existence and the nature of reality.

Bachelor of Arts

Philosophy (B.A.)

Bachelor of Arts

The Philosophy major stresses a firm grounding in both the history and the disciplines of Philosophy. Thirty-six credit hours of Philosophy course-work are required for the major in Philosophy. A total of 120 credit hours are required for the Bachelor's degree in Philosophy. Declared majors must enroll in a minimum of 6 credit hours of Philosophy every semester. Exception to the 6 credit per semester minimum requires written permission from the department. Because of the ways in which the study of Philosophy complements other disciplines, it is always good for a student to double-major in another discipline. Whatever a student's interest in Philosophy, courses from other disciplines that deepen that interest will significantly enhance Philosophical insight.

Declaration Policy

A minimum grade of C in at least one PHIL course.

Degree Requirements

A total of 120 credits is required for the Bachelor's degree in Philosophy in the following areas: I. Core Curriculum (37 credits), II. Philosophy Concentration Requirements (18 credits), III. Philosophy Major Electives (18 credits), IV. General Electives (47 credits).

I. Core Curriculum (37 credits)

The remaining 3 credit hours required to satisfy the Core Curriculum are fulfilled by completing one of the following philosophy major capstone courses:

- PHIL 5101 - Advanced Seminar in Classical Philosophy (3 cr.)
- PHIL 5104 - Selected Topics in Contemporary Philosophy (3 cr.)
- PHIL 5112 - Advanced Seminar in Aesthetics (3 cr.)
- PHIL 5119 - Advanced Seminar in Political Philosophy (3 cr.)

II. Philosophy Concentration Requirements (18 credits)

Students must complete the following courses:

- PHIL 2010 - Truth, Lies, and Logical Reasoning (3 cr.)
- PHIL 2113 - Introduction to Ethics (3 cr.)
- PHIL 3104 - Knowledge and Reality (3 cr.)

And choose TWO out of the following courses:

- PHIL 2111 - Self and Society (3 cr.)
- PHIL 2112 - Philosophy of Religion (3 cr.)
- PHIL 2117 - Political Philosophy (3 cr.)
- PHIL 3010 - Philosophy and Art (3 cr.)
- PHIL 3017 - Philosophy of Science and Technology (3 cr.)
- PHIL 5117 - Philosophy of Language (3 cr.)
- PHIL 5121 - Philosophical Logic (3 cr.)

And choose ONE out of the following courses:

- PHIL 5101 - Advanced Seminar in Classical Philosophy (3 cr.)
  The Advanced Seminar in Classical Philosophy may count as the major capstone course for this major.
- PHIL 5122 - Advanced Seminar in Islamic Philosophy (3 cr.)
- PHIL 5123 - Kant and Idealism (3 cr.)
- PHIL 5124 - Advanced Seminar in Phenomenology (3 cr.)

III. Philosophy Major Electives (18 credits)

Choose six (18 credits) additional Philosophy courses excluding 1000-level courses and PHIL 2100 - Philosophical Thinking (3 cr.) (core curriculum requirement).

- PHIL 2099 - Selected Topics for Core Curriculum (3 cr.)
- PHIL 2112 - Philosophy of Religion (3 cr.)
- PHIL 2117 - Political Philosophy (3 cr.)
- PHIL 2200 - Philosophy and Globalization (3 cr.)
- PHIL 3010 - Philosophy and Art (3 cr.)
- PHIL 3014 - Literature and Philosophy (3 cr.)
- PHIL 3015 - Islamic Philosophy (3 cr.)
- PHIL 3016 - American Philosophy (3 cr.)
- PHIL 3017 - Philosophy of Science and Technology (3 cr.)
- PHIL 3200 - Philosophy of History (3 cr.)
- PHIL 5100 - Independent Study in Philosophy (1-3 cr.)
- PHIL 5101 - Advanced Seminar in Classical Philosophy (3 cr.)

- PHIL 5104 - Selected Topics in Contemporary Philosophy (3 cr.)
- PHIL 5112 - Advanced Seminar in Aesthetics (3 cr.)
- PHIL 5117 - Philosophy of Language (3 cr.)
- PHIL 5119 - Advanced Seminar in Political Philosophy (3 cr.)
- PHIL 5120 - Advanced Seminar in Feminist Philosophy (3 cr.)
- PHIL 5121 - Philosophical Logic (3 cr.)
- PHIL 5122 - Advanced Seminar in Islamic Philosophy (3 cr.)
- PHIL 5123 - Kant and Idealism (3 cr.)
- PHIL 5124 - Advanced Seminar in Phenomenology (3 cr.)
- PHIL 5125 - Advanced Seminar in Moral Philosophy (3 cr.)
- PHIL 5130 - Philosophy of Mind (3 cr.)
- PHIL 5150 - Philosophy and Film (3 cr.)
- PHIL 5151 - Philosophy of Media (3 cr.)
- PHIL 5199 - Selected Topics in Philosophy (3 cr.)

IV. General Electives (47 credits)

Minors

Philosophy Minor

The minor in philosophy introduces the student to the specific forms of philosophic questioning and to philosophic methods and modes of thought. It offers an opportunity for students to learn about the unique contribution philosophical traditions have made to civilization; moreover the minor shows students the close relationship philosophy has with the social sciences, the arts, and the natural sciences.

Requirements (15 credits):

Any five philosophy courses, exclusive of 1000-level courses and PHIL 2100, selected in consultation with a member of the philosophy faculty.

Master of Arts

Philosophy (M.A.)

Engaging in philosophical study is to engage in the conceptual analysis of that experience all sentient rational beings have in common. Philosophy, therefore, is as much a lifelong journey to the center of our humanity, as it is a critique and purification of the foundational ideas that guide human practice in all its variety. The two-year Master of Arts in philosophy program at The

American University in Cairo gives students a unique opportunity to focus on both Islamic and Western philosophy. It thus prepares local students to pursue a PhD in Europe or North America, and it offers those joining from abroad the opportunity to learn Arabic and study Islamic Philosophy.

Due to its strong commitment to a methodological pluralism that is anchored in hermeneutic rigor, AUC's Master of Arts in philosophy program exposes its students to a wide spectrum of ways of doing philosophy that have developed in the Islamic, Continental and Analytic tradition. All students receive a high-quality, liberal arts education and emerge from the program with an in-depth knowledge of the professional discipline and the history of ideas more generally. This entails rigorous training in critical and systematic thought, the close reading and interpretation of some of the history of philosophy's most challenging texts, exemplary intellectual responsibility, and the ability to clearly and effectively present the results of independently conducted research within the form of a M.A. thesis.

Accordingly, the MA in Philosophy prepares its graduates both for academic careers in the discipline, but also for all careers in which strong independence of thought and the capacity to conceptually pervade uncharted territories is a desideratum.

Admission Criteria

Applicants for philosophy graduate study must have an accredited Bachelor's degree with an academic record and English proficiency at a level sufficient to qualify for full or provisional admission at AUC. While a BA in philosophy is not a necessary requirement for admission, applicants need to provide (i.) a statement of purpose, in which they convincingly outline the perspective in which an MA in philosophy would fit in their long-term academic and professional objectives, (ii.) one or several writing samples that demonstrate critical thinking and the ability to deal with questions of philosophical relevance in a structured and intelligible way and (iii.) at least two online letters of recommendation from persons familiar with their academic background.

Degree Requirements

The M.A. in Philosophy is aimed at any undergraduate with a background in the study of philosophy. A minimum of twenty-four graduate hours are required.

Eight courses must be taken, at least six of which must be taken within the Department of Philosophy at the 5000 level. Students are required to follow the Philosophy Graduate Core, a series of four advanced mandatory 5000 level seminars. The Department also offers a series of electives: a select number of undergraduate courses that can also be taken at the 5000 level.

A maximum of two courses may be taken within other departments at AUC, at either the 4000 or 5000 level but only with the Chair's approval. Students who are not native speakers of Arabic and who wish to write a thesis within the sphere of Islamic Philosophy will be strongly encouraged to select for credit at least one of the courses (at an appropriate level) offered by the Department of Arabic Language Instruction (ALI).

Before commencing work upon the thesis students will be required to write a thesis proposal. The thesis itself should take the form of a research paper of approximately 10,000 words in length. There will also be a final defense of the finished thesis.

The Philosophy Graduate Program Director organizes a number of (non-credit) workshops/ seminars over the course of the academic year, which all graduate students are expected to attend in order to ensure that they possess the research and academic writing skills requisite for tackling the thesis (PHIL 5299). This training will be further reinforced by the course requirements for the Department's Philosophy Graduate Core courses, in which the students are required to find and engage with relevant secondary literature and write in a highly professional manner for the papers upon which they are examined.

I. Required Courses (12 credit hours)

- PHIL 5101 - Advanced Seminar in Classical Philosophy (3 cr.)
- PHIL 5122 - Advanced Seminar in Islamic Philosophy (3 cr.)
- PHIL 5123 - Kant and Idealism (3 cr.)
- PHIL 5124 - Advanced Seminar in Phenomenology (3 cr.)

II. Electives (12 credit hours)

Of the 4 electives needed to fulfill this requirement (of the options listed below), 2 may be substituted for courses taken outside of the department.

- FILM 4350 - Philosophy and Film (3 cr.)
- PHIL 5104 - Selected Topics in Contemporary Philosophy (3 cr.)
- PHIL 5112 - Advanced Seminar in Aesthetics (3 cr.)
- PHIL 5117 - Philosophy of Language (3 cr.)
- PHIL 5119 - Advanced Seminar in Political Philosophy (3 cr.)
- PHIL 5120 - Advanced Seminar in Feminist Philosophy (3 cr.)
- PHIL 5121 - Philosophical Logic (3 cr.)
- PHIL 5125 - Advanced Seminar in Moral Philosophy (3 cr.)
- PHIL 5130 - Philosophy of Mind (3 cr.)

- PHIL 5150 - Philosophy and Film (3 cr.)
- PHIL 5151 - Philosophy of Media (3 cr.)
- PHIL 5199 - Selected Topics in Philosophy (3 cr.)

III. Thesis (0 credit hours)

- PHIL 5299 - Research Guidance and Thesis (0 cr.)

Department of Political Science

Professor Emeriti: S. El Musa, W. Kazziha, A. Lesch, T. Sullivan

Professors: B. Korany, J. Maswood (Acting chair), N. Sika

Associate Professors: A. Adly, N. Badawi, C.Barker, R. El Mahdi, M. Kassem, I. El Nur

Assistant Professors: M. Hefny, S. Lee, S. Smierciak

Political Science is the systematic study of structures and processes pertaining to governing, policy making, and political life. It concerns ideas about governing and political participation, about rights and duties of governors and governed. Political science includes the study of modern state, its historical evolution, variations in its present configurations, and relations between and among nations, including institutions that organize these relations. It seeks to understand relationships between politics, the economy and society. The scope of Political Science is local, national, regional, international, and global.

The program at AUC includes major fields and subfields of Political Science, vis: Comparative Politics, Development, International Relations, Political Economy, Political Theory and Philosophy, and Public and International law. The Middle East, Africa, and the Third World generally are emphasized in the program. As extra curricular enhancement, the Political Science Department sponsors a Model Arab League each year in the Fall and a Model United Nations in the spring.

Bachelor of Arts

Political Science, (B.A.) with Specializations in Comparative Politics, International Relations, Political Economy and Public and International Law

Bachelor of Arts

Political Science at AUC is taught as a humanistic discipline with the overall objectives of fostering understanding of the contemporary world and developing knowledge of the complex mechanisms, authoritative structures, and the allocation of values that characterize

contemporary human communities. Political Science at AUC requires students to develop abilities of comprehension and analysis, and skills for oral and written presentations. The graduate of Political Science is thus well equipped for life in the modern world, and to follow those professions and lines of work that require independence of thought, initiative, creativity in solving problems, and continuing self development. AUC graduates of Political Science are presently found in business, journalism, research, analytical writing, and public contact work. They occupy positions in public, private, development agencies, the diplomatic service, governmental ministries and agencies, and university teaching. A significant number of past graduates have subsequently completed M.A. and Ph.D. degrees.

Declaration Policy

- A minimum GPA of 2.7.
- POLS 2003 and either POLS 2104 or POLS 2405 , with a B average in these courses.
- A minimum grade of B in the RHET 1020 course.

Degree Requirements

A total of 120 credits is required for the bachelor's degree in Political Science in the following areas: I. Core Curriculum (37 credits), II. Political Science Major Requirements (36 credits), III. General or Specialization Requirements (9 credits), IV. Collateral Requirements (6 credits), V. General Electives (32 credits).

I. Core Curriculum (37 credits)

The remaining 3 credit hours required to satisfy the Core Curriculum are fulfilled by completing the Political Science major capstone course chosen out of the following:

- POLS 4000 - The Discipline and Critical Social Theory (3 cr.)
  With permission of instructor. Students pursuing Honors Recognition must take POLS 4000 as their major capstone.
- POLS 4030 - Seminar: Special Topics in Political Science for Undergraduates (3 cr.)

II. Political Science Major Requirements (36 credits)

Students must complete the following courses:

- POLS 2003 - Introduction to Political Science II (3 cr.)
- POLS 2104 - Introduction to Research Methods in Political Science (3 cr.)
- POLS 2405 - History and International Politics (3 cr.)
- POLS 3201 - History of Political Theory I (3 cr.)
- POLS 3202 - History of Political Theory II (3 cr.)
- POLS 3401 - Introduction to Comparative Politics (3 cr.)

- POLS 3408 - Comparative Politics of the Middle East (3 cr.)
- POLS 3510 - Introduction to Development (3 cr.)
- POLS 3550 - Introduction to Political Economy (3 cr.)
- POLS 3620 - Introduction to International Relations Theories (3 cr.)
- POLS 4030 - Seminar: Special Topics in Political Science for Undergraduates (3 cr.)
- POLS 4371 - Introduction to Public International Law (3 cr.)

III. General and Specialization Requirements (9 credits) and Honors Recognition

Students may select one of the following five options, or pursue a double-specialization:

1. General field in Political Science
2. Specialization in Comparative Politics
3. Specialization in International Relations
4. Specialization in Political Economy
5. Specialization in Public and International Law

1. Requirements for the General Political Science field (9 credits)

Students must complete an additional 9 credit hours in any Political Science courses.

2. Requirements for the Specialization in Comparative Politics (9 credits)

Students must complete any three of the following courses:

- POLS 4403 - American Government and Politics (3 cr.)
- POLS 4405 - Comparative Politics of Contemporary Africa (3 cr.)
- POLS 4420 - Issues in Middle East Politics (3 cr.)
- POLS 4423 - Comparative Government and Politics: Developing Systems (3 cr.)
- POLS 4424 - Comparative Government and Politics in Contemporary Eastern Europe and Russia (3 cr.)
- POLS 4425 - Government and Politics of Egypt (3 cr.)
- POLS 4432 - Seminar: Comparative Politics and/or Policies (3 cr.)
- POLS 4435 - The State and Society (3 cr.)
- POLS 4437 - Comparative Politics of Asia (3 cr.)
- POLS 4438 - Modern China (3 cr.)
- POLS 4439 - Comparative Politics of the Modern Caucasus and Central Asia (3 cr.)
- POLS 4444 - Comparative Politics of Latin America (3 cr.)
- POLS 4480 - Israeli Politics and Society (3 cr.)

3. Requirements for the Specialization in International Relations (9 credits)

Students must complete any three of the following courses:

- POLS 4608 - Critical Approaches to International Relations and the Global South (3 cr.)
- POLS 4609 - International Organizations (3 cr.)
- POLS 4610 - Global Security (3 cr.)
- POLS 4611 - Comparative Foreign Policy Analysis (3 cr.)

4. Requirements for the Specialization in Political Economy (9 credits)

Students must complete the following courses:

- POLS 4525 - Global Political Economy (3 cr.)
- POLS 4526 - Political Economy of the Global South (3 cr.)
- POLS 4551 - Theories of Political Economy (3 cr.)

To further their understanding in this specialization, students are recommended (but not required) to select one of the following courses as an elective:

- POLS 4502 - Political Economy of Egypt and the Middle East (3 cr.)
- POLS 4513 - International Financial Institutions (3 cr.)
- POLS 4523 - The Political Economy of Poverty and Inequality (3 cr.)
- POLS 4542 - Environmental Politics (3 cr.)

5. Requirements for the Specialization in Public and International Law (9 credits)

Students must complete the following courses:

- POLS 4372 - International Law in the Middle East (3 cr.)
- POLS 4375 - Introduction to Egyptian and Islamic Law (3 cr.)
- POLS 4378 - Introduction to International Human Rights Law (3 cr.)

6. Honors Recognition

Undergraduates in the Political Science program can apply to pursue Honors recognition, which involves conducting original research and producing a Senior Honors Thesis. Students earning this designation work closely with a faculty member on an undergraduate thesis, and receive special acknowledgment in a departmental honors ceremony. Participation requires formal application through the department and strong evidence of excellence in course work. Students pursuing this recognition take the following limited-enrollment courses:

Major capstone course:

- POLS 4000 - The Discipline and Critical Social Theory (3 cr.)

In addition, students pursuing this recognition take the following two required courses:

- POLS 4090 - Honors Thesis Seminar (3 cr.)

- POLS 4104 - Political Science Methods (3 cr.)

IV. Collateral Requirements (6 credits)

All students seeking a Bachelor of Arts in Political Science degree must complete TWO collateral requirements: ECON 2021 and one Modern History course at the 2000 level or above. (The HIST course should not be taken as an independent study. Students who wish to take a "Selected Topics" HIST course require approval of the POLS department.).

V. General Electives: (32 credits)

Dual Degree Option in Political Science (B.A.) and International Human Rights Law (M.A.)

The Dual Degree option combines a BA in Political Science and an MA in International Human Rights Law. It is a dual degree, creating a synergy between the existing BA in Political Science and the existing MA in International Human Rights Law.

The dual degree option enables good students to prepare for a postgraduate degree while completing the requirements for the BA in Political Science. The MA degree provides students with the necessary expertise in international human rights law and with the intellectual, analytical and communication tools needed to intervene critically and effectively in the global policy debates confronting their societies as policy makers, academics, activists and international civil servants.

By the end of the sixth semester of the political science BA at AUC, and after successfully completing POLS 4371 , the student has to declare her/his intention to pursue the Dual Degree by submitting a graduate admission application. The student should follow the application procedures for graduate studies. Admission decisions will be made by the Law Department's Admission Committee. Successful applicants will be admitted pending the fulfillment of two conditions: i) finishing the requirements of their undergraduate degrees with at least B (GPA 3); and ii) obtaining an average of at least a B+ (GPA of at least 3.3) across the three cross-listed 'Dual Degree' Law courses. Places are limited.

Students enrolled in the dual degree will receive a political science BA degree certificate upon the completion of their undergraduate course requirements.

Under this structure, dual-degree students will be required to take three 4000-level courses that are cross-listed under LAW and POLS. These three "Dual Degree" cross-listed courses (see below) will count for credit towards both the BA in Political Science and under the MA in International Human Rights Law.

The three 'Dual Degree' Law courses to be offered to undergraduates in the Political Science Department are the following: (a) POLS 4371 - Introduction to Public International Law (3 cr.) (b) POLS 4375 - Introduction to Egyptian and Islamic Law (3 cr.) and (c) POLS 4378 - Introduction to International Human Rights Law (3 cr.)

The curriculum for the MA IHRL requires the completion of nine courses and a thesis, as indicated in the tentative plan below: 3 POLS/LAW undergraduate courses, a choice of 1 of the following three: a graduate regional human rights, an economic social and cultural rights or an international humanitarian law course, 4 graduate elective courses, the Graduate Law Seminar, and the thesis.

Tentative Plan for Full-time Students

SEMESTER VI (POLS undergraduate program)

POLS 4371 - Introduction to Public International Law (3 cr.) (counts towards both concentrations in POLS for all students) (and MA IHRL credits)
[4 POLS courses or other courses as required to complete POLS BA degree]

SEMESTER VII (POLS undergraduate program)

POLS 4378 - Introduction to International Human Rights Law (3 cr.) (counts towards both BA POLS and MA IHRL credits)
[4 POLS courses or other core courses as required to complete POLS BA degree]

SEMESTER VIII (POLS undergraduate program)

POLS 4375 - Introduction to Egyptian and Islamic Law (3 cr.) (counts towards both BA POLS and MA IHRL credits)
[4 POLS courses or other core courses as required to complete POLS BA degree]

SEMESTER IX (MA IHRL program)

LAW 5134 - International Humanitarian Law (3 cr.)*

LAW 5175 - Human Rights in the Middle East (3 cr.)*

LAW 5176 - Economic, Social, and Cultural Rights (3 cr.)*

*(1 out of 3 starred courses required)

LAW electives (other 5000 level LAW courses approved by the department).

A maximum of two external (non-LAW) 5000-level courses may be taken in addition to two LAW electives. This option requires explicit approval from the Chair of the Law Department.

SEMESTER X (MA IHRL program)

LAW 5298 - Graduate Law Seminar (3 cr.)

LAW electives (other 5000 level LAW courses approved by the department).

A maximum of two external (non-LAW) 5000-level courses may be taken in addition to two LAW electives. This option requires explicit approval from the Chair of the Law Department.

SEMESTER XI (MA IHRL program)

LAW 5299 - Research Guidance/Thesis (no cr., pass/fail)

Minors

International Relations Minor

The minor in International Relations is open to students majoring in disciplines other than Political Science. The minor requires successful completion of 5 courses (15 credits).

Requirements:

- POLS 2405 - History and International Politics (3 cr.)
- POLS 3620 - Introduction to International Relations Theories (3 cr.)

Additional Requirements

Three courses chosen from:

- POLS 4030 - Seminar: Special Topics in Political Science for Undergraduates (3 cr.)
- POLS 4371 - Introduction to Public International Law (3 cr.)
- POLS 4513 - International Financial Institutions (3 cr.)
- POLS 4605 - International Politics of the Middle East (3 cr.)
- POLS 4608 - Critical Approaches to International Relations and the Global South (3 cr.)
- POLS 4609 - International Organizations (3 cr.)
- POLS 4610 - Global Security (3 cr.)
- POLS 4611 - Comparative Foreign Policy Analysis (3 cr.)
- POLS 4614 - Egyptian Foreign Policy (3 cr.)
- POLS 4615 - U.S. Foreign Policy (3 cr.)

- POLS 4640 - Seminar: Special Topics in International Relations for Undergraduates (3 cr.)
- POLS 5140 - Seminar: Special Topics in International Relations (3 cr.) when approved by the department

Middle East Politics Minor

The minor in Middle East politics is open to students majoring in disciplines other than political science. It requires successful completion of five courses as clarified below.

Requirements:

- POLS 3408 - Comparative Politics of the Middle East (3 cr.)

Additional Requirements

Four courses selected from the following:

- POLS 3454 - Political and Social Thought in the Modern Arab World (3 cr.)
- POLS 4030 - Seminar: Special Topics in Political Science for Undergraduates (3 cr.)
  Whenever content is relevant and subject to department approval. May be taken more than once for credit if content changes.
- POLS 4372 - International Law in the Middle East (3 cr.)
- POLS 4375 - Introduction to Egyptian and Islamic Law (3 cr.)
- POLS 4420 - Issues in Middle East Politics (3 cr.)
- POLS 4422 - Contemporary Egypt (3 cr.)
- POLS 4425 - Government and Politics of Egypt (3 cr.)
  Whenever content is relevant and subject to department approval. May be taken more than once for credit if content changes
- POLS 4432 - Seminar: Comparative Politics and/or Policies (3 cr.)
- POLS 4605 - International Politics of the Middle East (3 cr.)
  The requirement that POLS 3620 be taken as a prerequisite for POLS 4605 may be waived for minors with the consent of the instructor.
- POLS 5140 - Seminar: Special Topics in International Relations (3 cr.)
  Whenever content is relevant and subject to department approval. May be taken more than once for credit if content changes

Political Economy Minor

The minor in Political Economy is open to students majoring in disciplines other than Political Science. The minor requires successful completion of 5 courses (15 credits).

Requirements:

The Minor requires successful completion of :

- POLS 3550 - Introduction to Political Economy (3 cr.)
- POLS 4525 - Global Political Economy (3 cr.)
- POLS 4551 - Theories of Political Economy (3 cr.)

Additional Requirements

Plus **two** courses from the following:

- POLS 4030 - Seminar: Special Topics in Political Science for Undergraduates (3 cr.) (when approved by POLS Department)
- POLS 4513 - International Financial Institutions (3 cr.)
- POLS 4523 - The Political Economy of Poverty and Inequality (3 cr.)
- POLS 4526 - Political Economy of the Global South (3 cr.)
- POLS 4542 - Environmental Politics (3 cr.)
- POLS 4551 - Theories of Political Economy (3 cr.)
- POLS 4640 - Seminar: Special Topics in International Relations for Undergraduates (3 cr.) (when approved by POLS Department)
- POLS 5130 - Seminar: Special Topics in Political Science (3 cr.) (when approved by POLS Department)
- POLS 5140 - Seminar: Special Topics in International Relations (3 cr.) (when approved by POLS Department)

Political Science Minor

Requirements: Five Political Science courses (15 credits) at the 3000 or 4000 level.

Master of Arts

Comparative & Middle East Politics and Society (CMEPS)

This is a joint Masters degree program between the American University in Cairo (AUC) and Eberhard Karls Universität Tübingen (TU), in Germany. Students are required to be enrolled full time at their home institution (AUC). The third semester of study takes place in the partner institution (TU). The program provides in-depth knowledge of comparative politics, and of political and societal developments in the Middle East. It also provides students with the analytical tools for understanding this region's complex dynamics and challenges. The degree focuses on the relationship between societies and states in the MENA region as well as the dynamics of social and political transformation. Upon completion of the degree, AUC students

will receive a joint degree certificate from the American University in Cairo (AUC) and the Eberhard Karls Universität Tübingen (TU).

I. Courses

Students complete the following required courses at AUC (15 credits):

- POLS 5201 - Comparative Theory (3 cr.)
- POLS 5204 - Advanced Political Science Methods (3 cr.)
- POLS 5230 - Regime Change and Democratization (3 cr.)
- POLS 5245 - Development Politics and International Cooperation (3 cr.)
- POLS 5258 - Comparative Politics of the Middle East (3 cr.)

Students also complete one elective course at AUC (3 credits) to be chosen from the following list:

- POLS 5130 - Seminar: Special Topics in Political Science (3 cr.)
- POLS 5140 - Seminar: Special Topics in International Relations (3 cr.)
- POLS 5202 - Scope and Method of Developmental Analysis (3 cr.)
- POLS 5203 - International Relations Theories (3 cr.)
- POLS 5205 - Identity, Culture and Norms in Middle East Politics and Societies (3 cr.)
- POLS 5209 - Race, Gender, and Sexuality in International Relations (3 cr.)
- POLS 5210 - Global Governance and World Order(s) (3 cr.)
- POLS 5220 - Protracted Social Conflicts (3 cr.)
- POLS 5225 - International Political Economy (3 cr.)
- POLS 5233 - Middle East Conflicts (3 cr.)
- POLS 5240 - Politics of Modern Egypt (3 cr.)
- POLS 5244 - Comparative Politics of Europe (3 cr.)
- POLS 5250 - Comparative Politics of Asia (3 cr.)
- POLS 5251 - Comparative Politics of Africa (3 cr.)
- POLS 5252 - Arab-American Relations (3 cr.)
- POLS 5254 - Comparative Foreign Policy: Theories and Applications (3 cr.)
- POLS 5255 - Conflict and Security in Global Politics (3 cr.)
- POLS 5261 - Public Policy and Development (3 cr.)
- POLS 5270 - Special Topics in Political Science for Graduates (1-3 cr.)
- POLS 5271 - Seminar: Special Topics in International Relations for Graduates (1-3 cr.)
- POLS 5280 - Independent Study and Readings (1-3 cr.)
- POLS 5286 - Project Management in Development (3 cr.)

- If a student needs to take an elective course outside the department of political science, this must be approved by the Director of Graduate Programs.

Students also complete three elective courses fulfilled at TU (9 credits)

Course offerings at TU vary on an annual basis but previous offerings have included the following courses.

Lectures:

- P0301 Theories and Methods of Comparative Politics
- P0302 International Institutions and Global Governance
- P0303 Analyzing Armed Conflicts
- P0304 Introduction to Public Policy / Theory and Methods of Policy Analysis

Seminars:

- P0341 Regime Change and Democratization
- P0342 Middle East Politics and Societies
- P0343 Protest Movements in the Middle East
- P0323 Theories of European Integration
- P0325 Applied Ethics in Public Policy
- P0361 International Relations Theory and Peace Research
- P0364 The United Nations System: Politics and Policies
- P0366 The Politics of Migration
- P0367a Model United Nations Workshop
- P0367b Model United Nations Excursion
- P0368 Quantitative Methods Workshop
- P0369 Civil Resistance
- P0370 States in Crises in West Africa
- P0371 International Relations from the Global South
- P0388 From Emigration to Immigration: Modern Turkey's Migration Record

If needed, students also take an Elementary German Language proficiency course at TU as one of their elective courses.

II. Thesis

Students must complete a thesis that either focuses on the Middle East or employs a comparative politics methodology. The thesis is co-supervised by a first supervisor from the American University in Cairo and a second supervisor from TU. Specific thesis requirements are circulated to students by the department.

Political Science, with specializations in Comparative Politics, International Relations, and Development Studies (M.A.)

The graduate program of the Political Science department is intended for students who would like to pursue academic careers as well as those presently working, or desiring to work, in international political bodies; government institutions concerned with political issues; and in other public, private, and international sectors where there is a growing need for persons who have a scientific understanding of the political realities of the Middle East and the World.

The graduate program offers advanced study with particular emphasis and specializations in three areas: Comparative Politics, International Relations, and Development Studies.

Comparative Politics

Comparative Politics seeks to increase students' knowledge about the political dynamics of disparate systems within the larger contexts of state-society relations, political economy, and regional relations. Comparative Politics is particularly suitable for students who wish to pursue a career in academia, research, journalism, political consultancy, or similar positions in which a solid political background and analytical abilities are required.

International Relations

International Relations seeks to prepare students who are working or seek to work in foreign relations, either in their own government or in international organizations, and for employment in other positions that require the ability to analyze and write about national or international politics. The specialization includes examination of current world politics and the many dimensions of the international system, regional relations, foreign policies of selected states, Middle Eastern international and interstate relations, and international political economy.

Development Studies

Development Studies seeks to prepare students to assume positions of responsibility in development agencies and organizations by expanding their understanding of the development field, its aims, objectives, methods of operation, and the broad scope of development work in the world today. The specialization includes (but is not limited to) courses with practical application.

Admission Criteria

The applicant for admission to the master's program should have an acceptable bachelor's degree in political science or in a closely related social science (preferably with a minor in political science), and a grade-point average of at least 3.00 (an overall grade of gayyid giddan for graduates of Egyptian universities). Applicants with deficiencies in their preparation may be required to take appropriate courses at the undergraduate level.

Degree Requirements

Required Courses

All MA students are required to take the following two courses:

- POLS 5204 - Advanced Political Science Methods (3 cr.)
- POLS 5206 - Foundations of Political Philosophy (3 cr.)

Specialization in Comparative Politics

- POLS 5201 - Comparative Theory (3 cr.)
- POLS 5258 - Comparative Politics of the Middle East (3 cr.)

Specialization in International Relations

- POLS 5203 - International Relations Theories (3 cr.)
- POLS 5254 - Comparative Foreign Policy: Theories and Applications (3 cr.)

Specialization in Development Studies

- POLS 5202 - Scope and Method of Developmental Analysis (3 cr.)
- POLS 5245 - Development Politics and International Cooperation (3 cr.)

Electives

Students also complete four electives chosen from the graduate political science courses listed in the current catalog.

The Department works closely with its students to ensure that their chosen courses correspond to and serve their academic and professional goals. After consultation with the graduate director, students may select up to two relevant electives from other departments that may be more suited to their graduate study.

Thesis

A thesis, written and submitted in accordance with university regulations, is required of all specializations for the master's degree in Political Science. Students, working with a supervisor of their choice, should submit a detailed thesis prospectus to the department for approval. Once approved, students must register for thesis supervision until graduation. The thesis must be defended in an oral examination.

The Department encourages its students to familiarize themselves with procedures regarding committee selection, writing of the thesis, presentation to the supervisor and readers, and defense of the thesis. It strongly encourages them to plan their program well in advance in order to successfully meet the degree's procedural requirements within the specified time frame.

Graduate Diploma

Political Science (Graduate Diploma)

The Diploma in Political Science is designed as a one-year (two semesters) program for students who wish to enhance their professional qualifications or pursue an academic interest in the field of politics. The Diploma Program requires the completion of any six courses chosen from the graduate offerings in Political Science, which include Middle East Politics, International Relations, Development Studies, Political Economy, and Comparative Politics.

Admission

Requirements for admission to the Diploma program are the same as those for admission to the graduate degree program of the department. Should a student in good standing decide during or after completion of the requirements for the Diploma that he/she wishes to work towards the MA degree he/she may apply to transfer to one of the degree specializations.

Department of Psychology

Professors: H. Henry, H. Zaky (Chair), M. Amer

Associate Professors: L. Eldesouky, K. Ellis

Associate Professors of Practice: H. Kotb, G. Khalsa

Assistant Professors: N. Barakat, A. Kokkinakis, M. Perray, N. Zaki

The mission of the Department of is to lead, promote and advance the discipline of Psychology as a basic and applied science in Egypt, the wider Arab world, and beyond, and to further understanding of human behavior, thinking, and emotion through teaching, research, and community engagement. Undergraduate students gain a solid grounding in the theory, methodology, and core content areas of contemporary psychology, and graduate students gain essential knowledge and skills for competent professional practice.

Programs

Bachelor of Arts

Psychology (B.A.)

Minors

Psychology Minor

Master of Arts

Community Psychology (M.A.)

Counseling Psychology (M.A.)

Graduate Diploma

Community Psychology (Graduate Diploma)

Inclusive Education (Graduate Diploma) The Graduate Diploma in Inclusive Education is offered by the Departments of Psychology (HUSS) and Educational Studies.

Bachelor of Arts

Psychology (B.A.)

Bachelor of Arts

Psychology is the multifaceted scientific study of human behaviour and mental processes. The program at AUC emphasizes physical, cognitive, emotional, personal, and social development from conception to death. Biopsychosocial development is studied against a background of major theoretical and applied domains of psychology, concentrating on important influences of individual, group, and multicultural dynamics.

The mission of the Bachelor of Arts is to provide undergraduate students with a solid grounding in the theory, methodology, and core content areas of contemporary psychology by involving them in experiential learning, community engagement, and scientific research. This foundation of knowledge is enriched by incorporation of cultural diversity, local context, and interdisciplinary perspectives. The program will prepare students wishing to continue further studies leading to a professional career in psychology.

Declaration Policy

To declare Psychology as a major, students must have taken PSYC 1000 and have obtained a grade of B or higher. In addition, students must have successfully taken or be currently enrolled in PSYC 2000.

Faculty review applicants based on student contribution and performance in PSYC 1000 and PSYC 2000, and GPA. Admission is competitive.

Degree Requirements

A total of 120 credit hours is required for the bachelor's degree in Psychology in the following areas: I. Core Curriculum (37 credits), II. Psychology Concentration Requirements (52 credits), III. General Electives (31 credits).

Core Curriculum (37 credits)

Students must take the following for the science requirement:

- BIOL 1011 - Introductory Biology I (3 cr. + 1 cr. lab)

The remaining 3 credit hours required to satisfy the Core Curriculum are fulfilled by completing the Psychology major capstone course, either PSYC 4062, PSYC 4063, or PSYC 4203.

Psychology Concentration Requirements (52 credits)

- PSYC 1000 - Introduction to Psychology (3 cr.)
- PSYC 2000 - Introduction to Psychological Statistics (3 cr.)
- PSYC 2100 - Research Methods for Psychology (3 cr. + 1 cr. lab)
- PSYC 2200 - Foundations of Qualitative Inquiry in Psychology (3 cr.)
- PSYC 3003 - Community Psychology (3 cr.)
- PSYC 3010 - Social Psychology (3 cr.)
- PSYC 3040 - Lifespan Development (3 cr.)
- PSYC 3080 - Cognitive Psychology (3 cr.)
- PSYC 3270 - Theories of Personality (3 cr.)
- PSYC 3420 - Psychopathology (3 cr.)
- PSYC 3800 - Biopsychology (3 cr.)

And one of the following major capstone courses

- PSYC 4062 - Clinical Psychology (3 cr.)
- PSYC 4063 - Advanced Community Psychology (3 cr.)
- PSYC 4203 - Practicum in Community Development (3 cr.)

Additional Requirements

And two courses of Psychology Electives (6 credits):

One must be at the 4000 level (excluding PSYC 4001 and PSYC 4002), chosen from any psychology offerings, including, but not limited to:

- PSYC 3202 - Participatory Action Research in Community Settings (3 cr.)
- PSYC 4015 - Psychological Anthropology (3 cr.)

- PSYC 4030 - History and Systems of Psychology (3 cr.)
- PSYC 4098 - Selected Topics in Neuroscience (3 cr.)
- PSYC 4099 - Selected Topics in Psychology (3 cr.)
- PSYC 4160 - Methods in Behavioral Neuroscience (3 cr.)
- PSYC 5112 - Psychosocial Issues in Forced Migration (3 cr.)

Psychology electives should not include 1000 or 2000 level courses.
And three courses from within the below groups, at least one of which must be at the 4000 level
Group A: Human Development

- PSYC 3011 - Educational Psychology (3 cr.)
- PSYC 3130 - Learning and Behavioral Psychology (3 cr.)
- PSYC 4012 - Psychology of Gender (3 cr.)
- PSYC 4014 - Child Psychology (3 cr.)

Group B: Individuals in Communities

- PSYC 3021 - Psychology of Love and Attraction in Egypt (3 cr.)
- PSYC 3022 - Psychology of Inclusion and Exclusion in Egypt (3 cr.)
- PSYC 4011 - Cultural Psychology (3 cr.)
- PSYC 4022 - Industrial/Organizational Psychology (3 cr.)

Group C: Mental Health & Wellbeing

- PSYC 3002 - Personal Growth and Adjustment (3 cr.)
- PSYC 4013 - Psychology of Trauma (3 cr.)
- PSYC 4016 - Introduction to Forensic Psychology (3 cr.)
- PSYC 4150 - Psychological Testing and Assessment (3 cr.)

Students can register PSYC 4099 if the topic is relevant to any of the groups.

General Electives (31 credits)

Community Based Learning Requirement

Students must complete at least one designated community-based learning course (in psychology or from another department). Semester abroad experience can also meet this requirement.

Minors

Behavioral Neuroscience Minor

The behavioral neuroscience minor is an interdisciplinary program co-administered by the Biology and Psychology departments. The minor combines the study of the relationship between the structure and function of the nervous system with emphasis on the biological and psychological elements that affect emotions, behavior, learning and memory. Available courses include a variety

of topics, from genetics and biology of behavior to neurological and psychiatric disorders and their treatments.

Students should declare the minor after completing BIOL 1098 or PSYC 1000 to be eligible to register for subsequent courses for the minor.

Admission requirements

BIOL 1098 - Fundamentals of Neurosciences (3 + 1 cr.)

or

PSYC 1000 - Introduction to Psychology (3 cr.)

Program of Study

The program requires completion of a minimum of 15 credits. A minimum of 6 credits must be from outside the student's declared major.

A course plan should be designed and implemented in consultation with the minor advisor.

Required courses (minimum 9 credits)

- BIOL 4160 - Methods in Behavioral Neuroscience (3 cr.)
  and
- PSYC 1000 - Introduction to Psychology (3 cr.)
  or
- PSYC 1098 - Fundamentals of Neurosciences (3 + 1 cr.)
  and
- PSYC 3800 - Biopsychology (3 cr.)

Elective courses (minimum 6 credits)

A minimum of two courses from the following:

- BIOL 2150 - Genetics (3 cr.)
- BIOL 3341 - Animal Behavior (3 cr. + 1 cr. lab)
- BIOL 4930 - Selected Topics in Biology (1-4 cr.) *
- BIOL 4950 - Practical Internship (1 cr.) *
- PSYC 3080 - Cognitive Psychology (3 cr.)
- PSYC 3420 - Psychopathology (3 cr.)
- PSYC 4098 - Selected Topics in Neuroscience (3 cr.) *
- PSYC 4099 - Selected Topics in Psychology (3 cr.) *

- PSYC 5222 - Physiological Psychology (3 cr.)
  ** Under approval of the minor advisor, based on relevance of the course.*

Psychology Minor

The minor in psychology provides a general introduction to the field without the depth of methodological training required of majors. The minor exposes students to individual and contextual perspectives in psychology.

Students who intend to seek a minor in Psychology must have taken PSYC 1000 and have obtained a grade of "B" or higher. Admission is competitive. A combination of discipline-relevant factors, including performance in PSYC 1000 and GPA will be used to determine eligibility. Students should declare the minor after completing PSYC 1000 to be eligible to register for subsequent courses for the minor.

Core requirements (3 credits)

- PSYC 1000 - Introduction to Psychology (3 cr.)

General Requirements (6 Credits)

Students must select at least one course from each of the groups listed below

Individual Context (3 credits)
- PSYC 3270 - Theories of Personality (3 cr.)

or
- PSYC 3420 - Psychopathology (3 cr.)

Social Context (3 credits)
- PSYC 3003 - Community Psychology (3 cr.)

or
- PSYC 3010 - Social Psychology (3 cr.)

Additional Requirements (6 credits)

Two additional psychology courses (not including PSYC 2099). Selection of courses for the Minor should be approved in consultation with the designated Psychology faculty and may complement the student's major. Completion of courses that emphasize interdisciplinary content, community engagement, and experiential learning is encouraged.

Master of Arts

Community Psychology (M.A.)

Master of Arts in Community Psychology

The Community Psychology degree places its graduates at the forefront of advancing global trends towards multicultural and systemic community psychology practice. Courses prepare students to work with communities, schools, governments, international or multilateral organizations and/or nongovernmental organizations to develop, implement, and evaluate psychosocial interventions that promote psychological and physical health and well-being. The program exposes students to methods of community psychology practice that are ethically responsible and culturally appropriate to Egypt and the region. The program emphasizes experiential learning and intensive mentoring.

Admission

The applicant should have a minimum of 3.0 GPA in undergraduate studies; if the student has a Masters in a related field already, a 3.0 GPA will also be expected at that level. Applicants should have taken an introduction to psychology course and completed previous coursework in statistics and research methods relevant to the social sciences. It is preferred that applicants have completed an undergraduate major in psychology or a related filed, or have relevant work experience. Admission is competitive, and dependent on successful interview.

While applications are accepted and evaluated during both the fall and spring application periods, the program course sequence only starts in the fall semester. Admitted students with course prerequisite requirements and/or English language requirements, must complete these requirements before being allowed to enroll in the program classes. Completion of these prerequisites can take up to a year, so applicants who do not have an undergraduate degree in psychology are encouraged to apply during the fall application period in order to have enough time to meet the prerequisite requirements before the start of the program.

Language Requirement

The applicant should demonstrate proficiency in the English language in accordance with AUC standards.

Courses (36 credit hours)

Course work for the Master of Art requires the completion of 36 credits as follows:

1. Core courses

12 credits Required / 4 courses

- PSYC 5210 - Community Psychology and Systems Theory (3 cr.)
- PSYC 5220 - Applied Research Design and Statistical Analysis (3 cr.)
- PSYC 5230 - Ethics and Professional Issues (3 cr.)
- PSYC 5270 - Group Work (3 cr.)

2. Specialization courses

12 credits Required / 4 courses

- PSYC 5203 - Community Collaboration and Assessment (3 cr.)
- PSYC 5233 - Program Evaluation (3 cr.)
- PSYC 5243 - Prevention and Intervention in Communities (3 cr.)
- PSYC 5253 - Consultation to Non-Profit Organizations (3 cr.)

3. Elective

3 credits Required / 1 Elective course

4. Internship/Final Project

6 credits required 8 months
• PSYC 5283 - Internship in Community Psychology (3 cr.)
In order to ensure that students have the maturity and professional skills needed for community practice, they will undergo a formal evaluation of professional competence, and a remedial plan if appropriate. This evaluation is conducted by a faculty committee prior to enrollment in Internship and Thesis. If a student fails to meet competency standards, they will not be allowed to continue in the program.

5. Thesis

A thesis must be written in English and submitted in accordance with university regulations. Students should familiarize themselves with procedures regarding committee selection, writing of the thesis, presentation to the supervisor and readers, and defense of the thesis. Complying with the procedural requirements within the specified time sequences is the responsibility of the student.
• PSYC 5299 - Research Guidance and Thesis (3 cr.)

Counseling Psychology (M.A.)

Master of Arts in Counseling Psychology

The Counseling Psychology program will help students develop skills and knowledge that are needed to provide counseling services to individuals, couples, and groups struggling with psychosocial issues and mental illness. The program emphasizes experiential learning and exposes students to methods of psychological practice that are ethically responsible and culturally appropriate to Egypt and the region.

Admission

The applicant should have a minimum of 3.0 GPA in undergraduate studies; if the student has a Masters in a related field already, a 3.0 GPA will also be expected at that level. The applicant should have also completed an undergraduate major in psychology and/or the completion of a minimum of 12 credits (or equivalent) in psychology or related social/behavioral sciences including: Statistics, Research Design, and Abnormal Psychology. Admission is competitive, and dependent on successful interview.

While applications are accepted and evaluated during both the fall and spring application periods, the program course sequence only starts in the fall semester. Admitted students with course prerequisite requirements and/or English language requirements, must complete these requirements before being allowed to enroll in the program classes. Completion of these prerequisites can take up to a year, so applicants who do not have an undergraduate degree in psychology are encouraged to apply during the fall application period in order to have enough time to meet the prerequisite requirements before the start of the program.

Language Requirement

The applicant should demonstrate proficiency in the English language in accordance with AUC standards.

Courses (48 credit hours)

Course work for the Master of Art requires the completion of 48 credits as follows:

1. Core Courses

18 credits required / 6 courses

- PSYC 5200 - Fundamentals of Counseling (3 cr.)
- PSYC 5202 - Advanced Lifespan Development (3 cr.)

- PSYC 5210 - Community Psychology and Systems Theory (3 cr.)
- PSYC 5220 - Applied Research Design and Statistical Analysis (3 cr.)
- PSYC 5230 - Ethics and Professional Issues (3 cr.)
- PSYC 5270 - Group Work (3 cr.)

2. Specialization courses

24 credits/ 8 courses

- PSYC 5222 - Physiological Psychology (3 cr.)
- PSYC 5241 - Theories of Counseling and Psychotherapy (3 cr.)
- PSYC 5251 - Psychological Assessment (3 cr.)
- PSYC 5261 - Psychopathology and Resilience across Cultures (3 cr.)
- PSYC 5264 - Practicum I in Counseling Psychology (3 cr.)
- PSYC 5271 - Career Development and Counseling (3 cr.)
- PSYC 5274 - Practicum II in Counseling Psychology (3 cr.)
- PSYC 5281 - Couples Counseling and Human Sexuality (3 cr.)

3. Internship

6 credits required 8 months.

- PSYC 5284 - Internship in Counseling Psychology (3 cr. + 3 cr.)

4. Optional Thesis

A thesis is not required for the MA in Counseling Psychology. However, students may wish to complete a thesis if they want to explore a specific research area or if they are planning to enroll in a Ph.D. program. In consultation with the graduate director, students who plan to complete a thesis will substitute PSYC 5299, Research Guidance and Thesis with either of the following courses:

PSYC 5271 - Career Development and Counseling (3 cr.)

PSYC 5281 - Couples Counseling and Human Sexuality (3 cr.)

The optional thesis must be written in English and submitted in accordance with university regulations. Students should familiarize themselves with procedures outlined in the graduate handbook regarding committee selection, writing of the thesis, presentation to the supervisor and readers, and defense of the thesis. Complying with the procedural requirements within the specified time sequence is the responsibility of the student.

5. Professional Competence Requirements

In order to ensure that students have the maturity and professional skills needed to act as a counselor, they will undergo a formal evaluation of professional competence, and a remedial plan if appropriate. This evaluation is conducted by a faculty committee prior to enrollment in Practicum I, Practicum II, and Internship I and Internship II. If a student fails to meet competency standards they will not be allowed to continue in the program.

It is an ethical violation for a student to practice psychological counseling and testing beyond their level of competence. If a student is found to be working or volunteering in a capacity that is beyond their competence, they will be reviewed for dismissal from the program.

Graduate Diploma

Community Psychology (Graduate Diploma)

The Community Psychology diploma places its graduates at the forefront of advancing global trends towards multicultural and systemic community psychology practice. Courses prepare students to work with communities, schools, governments, international or multilateral organizations and/or nongovernmental organizations to develop, implement, and evaluate psychological interventions that promote social, psychological, and physical health and well-being. The program exposes students to methods of community psychology practice that are ethically responsible and culturally appropriate to Egypt and the region.

The diploma aims to complement students' existing knowledge and disciplinary specializations by providing training in understanding communities from a psychological and systems perspective while preparing students to intervene in communities on issues of importance.

Admission

At a minimum, applicants must meet at least one of two requirements: a) have at least two years relevant full-time work experience, or b) have completed or be near completion a Master's degree in a related discipline. It is expected that candidates have a minimum GPA of 3.0 out of 4.0 in previous academic studies and current academic studies if currently enrolled in a graduate program. Admission is competitive, and dependent on successful interview.

Language **Requirement**

The applicant should demonstrate proficiency in the English language in accordance with AUC standards.

Courses (18 credit hours)

Course work for the Graduate Diploma requires the completion of 18 credits as follows:

Required Courses

12 credits Required / 4 courses

- PSYC 5210 - Community Psychology and Systems Theory (3 cr.)
  And 3 courses from the following options:
- PSYC 5203 - Community Collaboration and Assessment (3 cr.)
- PSYC 5233 - Program Evaluation (3 cr.)
- PSYC 5243 - Prevention and Intervention in Communities (3 cr.)
- PSYC 5253 - Consultation to Non-Profit Organizations (3 cr.)

Electives

6 credits Required / 2 courses

Students should take two additional electives that best meet their professional goals, with approval from the graduate advisor and the department in which the course is offered. Students will be encouraged to take a course related to research methodology if they have not already completed a graduate-level research course.

Notes

Students will be encouraged to complete the diploma in one year.

Department of Sociology, Egyptology and Anthropology

Sociology

Associate Professors: G. Heck, I. Morrison (Chair), H. Rizzo

Assistant Professors: D. Makram Ebeid

Assistant Professors and Core Teaching Faculty: N. Abdalla, Y. Moataz

Sociology is the systematic study of society with special attention to social interaction and the social making of humans. It investigates the forces that hold society together and that threaten

to pull it apart through the analysis of interaction at every level from micro-group interaction to competition of nation states and large-scale social change including revolutions and social movements. Having as its goal a holistic understanding of human society, human beings and their lives, sociology is relevant to a wide range of other disciplines and every day life issues. As a result, sociology has a broad scope that includes culture, family, gender, crime, religion, politics, development, population, and urbanization, among others. Besides their coursework, sociology majors are given the opportunity to carry out supervised field research as a part of their undergraduate program.

Egyptology

Professor Emeriti: F. Haikal, K. Weeks

Distinguished University Professor: S. Ikram

Professor: J. Swanson (Special Advisor to the Provost)

Associate Professor: M. Ayad

Assistant Professor: M. El-Dorry

Egyptology is the scientific study of the history and culture of Ancient Egypt, from the earliest times to the Arab conquest, a time span covering some 4,600 years. Egyptology covers all aspects of Ancient Egyptian civilization, from language and religion to art, architecture and social structure.

Anthropology

Professor Emeriti: S. Altorki, D. Cole

Associate Professors: R. Aly, H. Sabea

Assistant Professors: M. Schwab, F. Wojnarowski

Assistant Professor and Core Teaching Faculty: Y. Moataz

Cultural Anthropology encompasses a wide range of subjects relating to culture, such as political systems, kinship, the media, religion and ritual, economics, youth, gender and sexuality, migration, rural and urban lives, language, art, war, and violence to name a few. Anthropology approaches these fields of inquiry through ethnographic research that sees people's everyday practices and ways of life as the most important source of knowledge about the world. Anthropology offers a unique perspective on humanity and provides students with excellent research, writing and people skills that are invaluable in a broad range of careers. Our approach

to teaching anthropology promotes hands-on ethnographic research and innovative theoretical engagement with emergent issues of both local and global concern.

Sociology - Anthropology

Professor Emeriti: S. Altorki, D. Cole

Associate Professors: R. Aly, G. Heck, I. Morrison (chair), H. Rizzo, H. Sabea

Assistant Professors: D. Makram Ebeid, M. Schwab, F. Wojnarowski

Assistant Professors and Core Teaching Faculty: N. Abdalla, Y. Moataz

The graduate program in sociology and anthropology equips students with a thorough grounding in the theory and research methods of both disciplines. It offers a unique opportunity for students to conduct original research amidst an intellectually stimulating environment. Its longstanding tradition of combining scholarship with a commitment to social, economic and political justice makes the program a dynamic environment for learning and research. The program emphasizes an interdisciplinary approach to social theory and research and has broad applications. The program accepts qualified applicants from a variety of academic and professional backgrounds especially those who are talented and interested in acquiring alternative and critical perspectives on society and politics. Our students conduct research in Egypt and throughout the Middle East on topics such as: urban transformation, gender, religious and social movements, memory and politics of the past, migration environment, health, the family, poverty, ethnicity and nationalism, media, activism, art and expressive culture, and violence.

Bachelor of Arts

Anthropology (B.A.)

Bachelor of Arts

The Anthropology major at AUC is aimed at students who seek to foster an ability to understand and critically engage with the social and cultural dynamics of Egypt, Africa,and South West Asia and North Africa (SWANA). Grounded in a comparative understanding of everyday lived experiences, ideas, and practices, Cultural Anthropology provides a nuanced perspective that connects self, family, and society with broader questions of race, gender, class, religion, politics, economics, and governance. By studying and applying contemporary anthropological perspectives, students nurture their appreciation for difference and learn how to conceptualise culture and power, undertake ethnographic and social research, and communicate these in ways that are relevant, accessible and compelling. These critical skills are key to careers in research and

higher education, international development agencies, non-governmental organizations, government and diplomacy, advocacy and social work, marketing and global business, the arts, media and journalism, and heritage preservation.

Declaration Policy

1. A minimum grade of B in ANTH 2101 - Cultural Anthropology (3 cr.).
2. A minimum overall GPA of 2.3 at the time of the declaration.
3. Successful interview by unit head at the time of declaring the major.

Degree Requirements

A total of 120 credits is required for the bachelor's degree in anthropology in the following areas: I. Core Curriculum (37 credits), II. Anthropology Concentration Requirements (42 credits), III. Collateral Requirements (9 credits), IV. General Electives (32 credits).

I. Core Curriculum (37 credits)

The remaining 3 credit hours required to satisfy the Core Curriculum are fulfilled by completing the following major capstone courses:

- ANTH 4107 - Senior Thesis (3 cr.)
  or
- SOC 4107 - Senior Seminar (3 cr.)
  ** Must be taken in the student's final academic year.*

II. Concentration Requirements (42 credits)

- ANTH 2101 - Cultural Anthropology (3 cr.)
- ANTH 3104 - Contemporary Social Theory (3 cr.)
- ANTH 3105 - Fieldwork Methods (3 cr.)
- SOC 3102 - History of Social Theory (3 cr.)
  And to fulfil the major capstone requirement take either:
- ANTH 4107 - Senior Thesis (3 cr.)
  or
- SOC 4107 - Senior Seminar (3 cr.)

One of the following people-and-culture courses

- ANTH 3301 - Anthropologies of Middle East and North Africa (3 cr.)
- ANTH 3302 - Anthropologies of Africa (3 cr.)

Additional Requirements

Eight additional anthropology courses, of which three must be at the 4000 level.

Please select from the following courses:

- ANTH 2005 - Arab Society (3 cr.)
- ANTH 2006 - Youth Cultures: Anthropologies of Politics and Style (3 cr.)
- ANTH 2007 - Anthropology of the Occupied (3 cr.)
- ANTH 2098 - Selected Topics in Egypt (3 cr.)
- ANTH 2099 - Selected Topics for Core Curriculum (3 cr.)
- ANTH 3015 - Global Families: Kinship and Relatedness (3 cr.)
- ANTH 3075 - Language in Culture (3 cr.)
- ANTH 3080 - Gender, Sexuality and Social Change (3 cr.)
- ANTH 3090 - Public Anthropology (3 cr.)
- ANTH 3095 - Death, Immortality and the Afterlife (3 cr.)
- ANTH 3096 - Selected Topics in Global Studies (3 cr.)
- ANTH 3098 - Selected Topics in Anthropology (3 cr.)
- ANTH 3099 - Selected Topics in Anthropology (3 cr.)
- ANTH 3305 - Selected Topics in Arab World Studies (3 cr.)
- ANTH 4020 - Anthropology of Violence (3 cr.)
- ANTH 4025 - Religion in a Global World (3 cr.)
- ANTH 4030 - Women, Islam and the State (3 cr.)
- ANTH 4065 - Culture, Economy and the Everyday (3 cr.)
- ANTH 4070 - Political Anthropology (3 cr.)
- ANTH 4075 - Migrants and Transnationals (3 cr.)
- ANTH 4085 - Discourse Analysis: Working with language in use (3 cr.)
- ANTH 4099 - Selected Topics in Anthropology (3 cr.)
- ANTH 4203 - Practicum in Community Development (3 cr.)
- ANTH 4405 - Independent Study (1-3 cr.)
- SOC 2201 - Introduction to Community Development (3 cr.)
- SOC 3202 - Participatory Action Research in Community Settings (3 cr.)
- SOC 4560 - Development Studies Seminar (3 cr.)

III. Collateral Requirements (9 credits)

Three courses in the Social Sciences, Humanities or Arts must be taken at the 3000 and/or 4000 level.

IV. General Electives (32 credits)

Egyptology (B.A.)

Bachelor of Arts

Egyptology is the scientific study of the history and culture of Ancient Egypt, from the earliest times to the Arab conquest, a time span covering some 4,600 years. Egyptology covers all aspects of Ancient Egyptian civilization, from language and religion to art, architecture and social structure.

The Program aims at preparing students for careers in Egyptology and the preservation and management of Egypt's material heritage. Research, writing, critical thinking and presentation skills are also stressed. Students will:

1. Acquire knowledge, appreciation and understanding of Ancient Egypt's cultural heritage and its legacy in the world.
2. Master the research tools upon which a career in Egyptology must depend, including Ancient Egyptian language and scripts as well as skill in excavation and site analysis.
3. Prepare properly to assume the responsibility of caring for, maintaining and preserving Ancient Egypt's unique cultural heritage.

Declaration Policy

A minimum grade of B- in an Egyptology course (e.g., EGPT 2020) and a writing sample showing the student's writing ability should be submitted to the Egyptology faculty, who will then arrange for a personal interview with the student prior to declaration. The writing sample should demonstrate linguistic ability commensurate with the demands of Egyptology.

Degree Requirements

A total of 120 credits is required for the bachelor's degree in Egyptology in the following areas; I. Core Curriculum (40 credits), II. Egyptology Concentration Requirements (48 credits), III. Collateral Requirements (9 credits), IV. General Electives (23 credits).

I. Core Curriculum (40 credits)

II. Egyptology Concentration Requirements (48 credits)

All Twelve of the following (36 credits)

- EGPT 2250 - Voices from Ancient Egypt: Ancient Egyptian Literature in Translation (3 cr.)
- EGPT 3201 - Art and Architecture of Ancient Egypt I (3 cr.)

- EGPT 3202 - Art and Architecture of Ancient Egypt II (3 cr.)
- EGPT 3211 - History of Ancient Egypt I: Pre-Dynastic Through Middle Kingdom Egypt (3 cr.)
- EGPT 3212 - History of Ancient Egypt II: Middle Kingdom through Ptolemaic Egypt (3 cr.)
- EGPT 3251 - Hieroglyphics I (3 cr.)
- EGPT 3252 - Hieroglyphics II (3 cr.)
- EGPT 4151 - Hieroglyphics III (3 cr.)
- EGPT 5100 - Living Like an Egyptian: Ancient Egyptian Society (3 cr.)
- EGPT 5130 - Art, Societies, and Cultures of the Ancient Near East (3 cr.) or EGPT 5140 - Societies and Cultures of Ancient Nubia (3 cr.) **
- EGPT 5144 - Ancient Egyptian Religion and Ethics (3 cr.)
- EGPT 5153 - Hieroglyphics IV (3 cr.) for those focusing in language or any other EGPT upper level course, approved by the Egyptology Unit.

  *** When either EGPT 5130 or EGPT 5140 have been taken to satisfy the required 36 credits above, the other may be taken to count as one of the four courses (12 credits) listed below*

Four courses from among the following (12 credits)

- EGPT 2020 - Ancient Egypt: An Introduction (3 cr.)
- EGPT 2210 - Introduction to Archaeology (3 cr.)
- EGPT 3010 - Temples, Tombs and Hieroglyphs (3 cr.)
- EGPT 4030 - Independent Study in Egyptology (1-3 cr.) *
- EGPT 5110 - Egypt in the First Millennium BC (3 cr.)
- EGPT 5120 - History of Egypt in the Graeco-Roman Era (3 cr.)
- EGPT 5130 - Art, Societies, and Cultures of the Ancient Near East (3 cr.)
- EGPT 5140 - Societies and Cultures of Ancient Nubia (3 cr.)
- EGPT 5150 - Introduction to Coptic (3 cr.)
- EGPT 5152 - Introduction to Hieratic (3 cr.)
- EGPT 5160 - Selected Topics in Coptic Studies (3 cr.) *
- EGPT 5170 - Selected Topics in Cultural Resource Management and Museology (3 cr.) *
- EGPT 5191 - Selected Aspects of Field Work (3 cr.) *
- EGPT 5199 - Selected Topics in Egyptology (3 cr.) *

  ** These courses can be repeated as the subject matter changes*

Notes

Students intending to pursue graduate studies in Egyptology at an Egyptian national university must take EGPT 5152 Introduction to Hieratic and EGPT 5150 Introduction to Coptic.

III. Collateral Requirements (9 credits)

All students seeking a Bachelor of Arts in Egyptology degree must complete NINE credit hours of collateral requirements in related disciplines, such as anthropology, history, and art, Islamic art and archaeology, linguistics, or science (Archaeological Science), possibly to constitute a minor.

IV. General Electives (23 credits)

Sociology (B.A.)

Bachelor of Arts

Sociology is the systematic study of society with special attention to social interaction and the social making of humans. It investigates the forces that hold society together and that threaten to pull it apart through the analysis of interaction at every level from micro-group interaction to competition of nation states. Having as its goal a holistic understanding of human society, human beings and their lives, sociology is relevant to a wide range of other disciplines and everyday life issues. As a result, sociology has a broad scope that includes culture, family, gender, crime, religion, politics, development, population, and urbanization, among others. Besides their coursework, sociology majors are given the opportunity to carry out supervised field research as a part of their undergraduate program.

In addition to the possibility of pursuing advanced graduate work in sociology or related fields, majors are trained for employment in international development agencies, government, non-governmental organizations or the private sector in social and community services or research and managerial positions.

Declaration Policy

In order to declare the major in sociology, students must pass SOC 2101 with at least a "B". Continuation within the major is dependent on maintaining at least 2.5 GPA within their concentration requirements. Students must take SOC 4107 in their last full academic year. Courses at the 5000-level are also open to selected advanced undergraduates.

Degree Requirements

A total of 120 credits is required for the bachelor's degree in sociology in the following areas: I. Core Curriculum (37 credits), II. Sociology Concentration Requirements (42 credits), III. Collateral Requirements (9 credits), IV. General Electives (32 credits).

I. Core Curriculum (37 credits)

The remaining 3 credit hours required to satisfy the Core Curriculum are fulfilled by completing one of the major capstone courses to be chosen from:

- ANTH 4107 - Senior Thesis (3 cr.) *
  or
- SOC 4107 - Senior Seminar (3 cr.) *
  Must be taken in the student's final academic year.
- ANTH 4203 - Practicum in Community Development (3 cr.)
- SOC 4560 - Development Studies Seminar (3 cr.)

II. Concentration Requirements (42 credits)

- ANTH 2005 - Arab Society (3 cr.)
- ANTH 3104 - Contemporary Social Theory (3 cr.)
- ANTH 4107 - Senior Thesis (3 cr.) or SOC 4107 - Senior Seminar (3 cr.)
- SOC 2101 - Introduction to Sociology (3 cr.)
- SOC 2301 - Social Problems of the Middle East (3 cr.)
- SOC 3102 - History of Social Theory (3 cr.)
- SOC 3105 - Sociological Research Methods and Tools (3 cr.)

One of either

- SOC 3303 - Social Movements (3 cr.)
- SOC 3304 - Social Class and Inequality (3 cr.)
  If students take both courses, then one will count towards this requirement and the other will count towards the additional requirements.

One of the following methods classes

- ANTH 3105 - Fieldwork Methods (3 cr.)
- PSYC 2000 - Introduction to Psychological Statistics (3 cr.)
- SOC 3103 - Social Statistics (3 cr.)
- SOC 3202 - Participatory Action Research in Community Settings (3 cr.)

Two additional 2000 or 3000 level courses from among the following, with a maximum of one at the 2000 level:

- SOC 2302 - Arab Family Structure and Dynamics (3 cr.)
- SOC 2401 - Society and Culture in Egypt (3 cr.)
- SOC 2402 - Family, Kin and Friends in Egypt (3 cr.)
- SOC 2403 - Social Issues in Egypt (3 cr.)
- SOC 3010 - Social Psychology (3 cr.)
- SOC 3025 - Development Agencies (3 cr.)
- SOC 3045 - The Urban Experience (3 cr.)

- SOC 3060 - Social Constructions of Difference: Race, Class and Gender (3 cr.)
- SOC 3085 - Environmental Issues in Egypt (3 cr.)
- SOC 3202 - Participatory Action Research in Community Settings (3 cr.)
- SOC 3303 - Social Movements (3 cr.)
- SOC 3304 - Social Class and Inequality (3 cr.)
- SOC 3305 - Selected Topics in Sociology (3 cr.)

And three additional 4000 or 5000 level courses in sociology or anthropology from among the following:

- ANTH 4025 - Religion in a Global World (3 cr.)
- ANTH 4203 - Practicum in Community Development (3 cr.)
- SOC 4005 - Sociology of Work (3 cr.)
- SOC 4035 - Political Sociology (3 cr.)
- SOC 4099 - Selected Topics in Sociology (3 cr.)
- SOC 4405 - Independent Study (3 cr.)
- SOC 4560 - Development Studies Seminar (3 cr.)

  With approval from the student's advisor and unit head, other 3000 or 4000 level courses in the social sciences may be taken.

III. Collateral Requirements (9 credits)

Three courses from any social science or humanities discipline to be approved by the advisor at the 3000 or 4000 level.

IV. General Electives (32 credits)

Minors

Anthropology Minor

A minor in Anthropology serves as a valuable complement to a wide range of majors and careers. Thinking anthropologically as a Psychologist, Economist, or Business Administrator deepens your understanding of people and the worlds they create and offers a unique and valuable edge in today's interconnected world. A minor in Anthropology provides students with essential skills in critical reading, research, communication, interpretation, and creativity; competencies that are increasingly sought after across diverse professional fields like research and higher education, international development agencies, non-governmental organizations, government and diplomacy, advocacy and social work, marketing and global business, the arts, media, journalism, and heritage preservation.

Fifteen credits are required for the minor in Anthropology: ANTH 2101, ANTH 3105 and three additional anthropology courses of which at least one must be at the 4000-level.

Requirements

- ANTH 2101 - Cultural Anthropology (3 cr.)
- ANTH 3105 - Fieldwork Methods (3 cr.)

Additional Requirements

And an additional 9 credit hours of the following courses of which at least three credits must be at the 4000-level.

- ANTH 1099 - Selected Topics for Core Curriculum (3 cr.)
- ANTH 2005 - Arab Society (3 cr.)
- ANTH 2006 - Youth Cultures: Anthropologies of Politics and Style (3 cr.)
- ANTH 2007 - Anthropology of the Occupied (3 cr.)
- ANTH 2098 - Selected Topics in Egypt (3 cr.)
- ANTH 2099 - Selected Topics for Core Curriculum (3 cr.)
- ANTH 3015 - Global Families: Kinship and Relatedness (3 cr.)
- ANTH 3075 - Language in Culture (3 cr.)
- ANTH 3080 - Gender, Sexuality and Social Change (3 cr.)
- ANTH 3090 - Public Anthropology (3 cr.)
- ANTH 3095 - Death, Immortality and the Afterlife (3 cr.)
- ANTH 3096 - Selected Topics in Global Studies (3 cr.)
- ANTH 3098 - Selected Topics in Anthropology (3 cr.)
- ANTH 3099 - Selected Topics in Anthropology (3 cr.)
- ANTH 3104 - Contemporary Social Theory (3 cr.)
- ANTH 3301 - Anthropologies of Middle East and North Africa (3 cr.)
- ANTH 3302 - Anthropologies of Africa (3 cr.)
- ANTH 3305 - Selected Topics in Arab World Studies (3 cr.)
- ANTH 4020 - Anthropology of Violence (3 cr.)
- ANTH 4025 - Religion in a Global World (3 cr.)
- ANTH 4030 - Women, Islam and the State (3 cr.)
- ANTH 4065 - Culture, Economy and the Everyday (3 cr.)
- ANTH 4070 - Political Anthropology (3 cr.)
- ANTH 4075 - Migrants and Transnationals (3 cr.)
- ANTH 4085 - Discourse Analysis: Working with language in use (3 cr.)

- ANTH 4099 - Selected Topics in Anthropology (3 cr.)
- ANTH 4107 - Senior Thesis (3 cr.)
- ANTH 4203 - Practicum in Community Development (3 cr.)
- ANTH 4405 - Independent Study (1-3 cr.)
- SOC 2201 - Introduction to Community Development (3 cr.)
- SOC 3102 - History of Social Theory (3 cr.)
- SOC 3202 - Participatory Action Research in Community Settings (3 cr.)
- SOC 4560 - Development Studies Seminar (3 cr.)

Community Development and Organizing Minor

The minor in Community Development provides students with theoretical and practical knowledge that enhances their understanding and vision of a strong civil society, one that is engaged and participatory. The required curriculum includes hands-on community-based learning experiences to initiate the students' professional development in an applied setting. Students learn about the relevance and role of community and personal empowerment in response to population needs. The practicum model is designed with a broad educative focus meant to provide students not only with skills and techniques, but also opportunities for inquiry, for trying and testing new ideas within collaborative relationships, and for engaging community development in new ways.

Academic Advising will be provided to minors by the Anthropology, Sociology and Psychology faculty. Students need to consult the academic advisor that will be based in either the Department of Sociology, Egyptology, and Anthropology or the Department of Psychology in order to declare Community Development and Organizing as a minor.

Course requirements: 15 credits, including the following:

Required Courses (9 credits)

- ANTH 4203 - Practicum in Community Development (3 cr.)
- SOC 2201 - Introduction to Community Development (3 cr.)
- SOC 3202 - Participatory Action Research in Community Settings (3 cr.)

Electives (6 credits)

Two courses of the following:

- ANTH 3090 - Public Anthropology (3 cr.)
- ANTH 3105 - Fieldwork Methods (3 cr.)

- PSYC 3003 - Community Psychology (3 cr.)
- PSYC 4063 - Advanced Community Psychology (3 cr.)
- RHET 4260 - Writing for Project Funding (3 cr.)
- SOC 2301 - Social Problems of the Middle East (3 cr.)
- SOC 3025 - Development Agencies (3 cr.)
- SOC 3085 - Environmental Issues in Egypt (3 cr.)
- SOC 3304 - Social Class and Inequality (3 cr.)
- SOC 4560 - Development Studies Seminar (3 cr.)

Coptic Studies Minor

The minor in Coptic Studies provides students with an introduction to the Coptic period as it follows on from the Pharaonic period and into the Islamic period. This interdisciplinary program, drawing primarily from the Egyptology and Arabic Studies, will cover religion, art, literature, & social and political history from the early days until the present. Influences between different groups, as manifested culturally, will also be studied. Although the main offerings for this minor are currently based in Egyptology and Arabic Studies, other offerings from Political Science, Religion, Art History, History, etc. can also be included, where appropriate.

The minor is supervised by the head of the Egyptology Unit in the SEA Department.

Requirements (15 credits):

- EGPT 5150 - Introduction to Coptic (3 cr.)

Any two of the following (Egyptology) :

- EGPT 4030 - Independent Study in Egyptology (1-3 cr.)
- EGPT 5100 - Living Like an Egyptian: Ancient Egyptian Society (3 cr.)
- EGPT 5110 - Egypt in the First Millennium BC (3 cr.)
- EGPT 5120 - History of Egypt in the Graeco-Roman Era (3 cr.)
- EGPT 5140 - Societies and Cultures of Ancient Nubia (3 cr.)
- EGPT 5160 - Selected Topics in Coptic Studies (3 cr.)

Any two of the following:

- ARIC 3267 - Arts of the Loom: Carpets and Textiles of the Islamic World (3 cr.)
- ARIC 3269 - The Arts of Fire: Ceramics and Glass of the Islamic World (3 cr.)
- ARIC 3323 - Marriage and the Family in the Medieval and Early Modern Middle East (3 cr.)

- ARIC 3324 - Non-Muslim Communities in the Muslim World (3 cr.)
- ARIC 3344 - Caliphs and Sultans in the Age of Crusades and Mongols (3 cr.)
- ARIC 3346 - Egypt since the Arab Conquest (3 cr.)
- ARIC 5125 - Decorative Arts of the Islamic World: Metalwork, Woodwork, and Ivory (3 cr.)
- CREL 2603 - Religions of the World (3 cr.)

Note:

Appropriate courses from other departments may be substituted.

Development Studies Minor

The purpose of the development studies minor is to offer students an introduction to the various social, political, economic, and cultural factors related to the process of development. The approach is interdisciplinary and comparative, with primary emphasis upon development-related issues.

Academic advising is provided through the Anthropology and Sociology units of the Department of Sociology, Egyptology, and Anthropology on behalf of an interdisciplinary group of faculty.

Requirements (15 credits)

From the following lists of approved courses, three "development courses" from at least two disciplines other than the major (maximum one course from the major can double count), one "area studies course" not included in the major, and the Development Studies Seminar to be taken after or concurrent with the completion of other courses in the minor:

Approved Development Courses

- ANTH 3080 - Gender, Sexuality and Social Change (3 cr.)
- ANTH 3090 - Public Anthropology (3 cr.)
- ANTH 4065 - Culture, Economy and the Everyday (3 cr.)
- ANTH 4070 - Political Anthropology (3 cr.)
- ECON 3053 - Economic Development (3 cr.)
- ECON 4014 - Public Economics and Policy Analysis (3 cr.)
- POLS 3510 - Introduction to Development (3 cr.)
- POLS 4423 - Comparative Government and Politics: Developing Systems (3 cr.)
- POLS 4560 - Development Studies Seminar (3 cr.)
- SOC 3025 - Development Agencies (3 cr.)

- SOC 3045 - The Urban Experience (3 cr.)
- SOC 3303 - Social Movements (3 cr.)
- SOC 4035 - Political Sociology (3 cr.)

Approved Area-Studies Courses

- ANTH 3301 - Anthropologies of Middle East and North Africa (3 cr.)
- ANTH 3302 - Anthropologies of Africa (3 cr.)
- ECON 2051 - Economic History of the Modern Middle East (3 cr.)
- ECON 4051 - Seminar on Economic Development and Policy in the Middle East (3 cr.)
- ECON 4094 - Economics of Egypt (3 cr.)
- POLS 3408 - Comparative Politics of the Middle East (3 cr.)
- POLS 3454 - Political and Social Thought in the Modern Arab World (3 cr.)
- POLS 4420 - Issues in Middle East Politics (3 cr.)
- POLS 4424 - Comparative Government and Politics in Contemporary Eastern Europe and Russia (3 cr.)
- POLS 4439 - Comparative Politics of the Modern Caucasus and Central Asia (3 cr.)
- SOC 2301 - Social Problems of the Middle East (3 cr.)

Special Topics

Selected special topics courses may be accepted as part of "development courses" or "area-studies courses" by the approval of the Advisor:

- ANTH 4099 - Selected Topics in Anthropology (3 cr.)
- SOC 4099 - Selected Topics in Sociology (3 cr.)

Egyptology Minor

Egyptology is the science and study of Ancient Egypt, including the different aspects of its material and nonmaterial culture. The minor in Egyptology is designed to provide students with a substantive introduction to Ancient Egyptian civilization through the study of its history, art and architecture, religion and literature.

Requirements (15 credits)

Any three of the following (However a sequence from the Predynastic through the Ptolemaic period must be covered by taking the history or/and art sequences):

- EGPT 3201 - Art and Architecture of Ancient Egypt I (3 cr.)
- EGPT 3202 - Art and Architecture of Ancient Egypt II (3 cr.)

- EGPT 3211 - History of Ancient Egypt I: Pre-Dynastic Through Middle Kingdom Egypt (3 cr.)
- EGPT 3212 - History of Ancient Egypt II: Middle Kingdom through Ptolemaic Egypt (3 cr.)
- EGPT 5100 - Living Like an Egyptian: Ancient Egyptian Society (3 cr.)

Two from among the following

- EGPT 2250 - Voices from Ancient Egypt: Ancient Egyptian Literature in Translation (3 cr.)
- EGPT 3251 - Hieroglyphics I (3 cr.)
- EGPT 3252 - Hieroglyphics II (3 cr.)
- EGPT 5144 - Ancient Egyptian Religion and Ethics (3 cr.)

Sociology Minor

The minor in sociology introduces students to the central concepts and methods of the field. Emphasis is on the theoretical perspectives of sociology in the study of society, culture, and the individual.

Requirements (15 credits)

Prerequisites for these courses must be completed in order to minor in sociology.

- SOC 2101 - Introduction to Sociology (3 cr.)
- SOC 3102 - History of Social Theory (3 cr.)
- SOC 3105 - Sociological Research Methods and Tools (3 cr.)

One 3000-level from the following courses:

- ANTH 3104 - Contemporary Social Theory (3 cr.)
- SOC 3025 - Development Agencies (3 cr.)
- SOC 3045 - The Urban Experience (3 cr.)
- SOC 3060 - Social Constructions of Difference: Race, Class and Gender (3 cr.)
- SOC 3085 - Environmental Issues in Egypt (3 cr.)
- SOC 3103 - Social Statistics (3 cr.)
- SOC 3202 - Participatory Action Research in Community Settings (3 cr.)
- SOC 3303 - Social Movements (3 cr.)
- SOC 3304 - Social Class and Inequality (3 cr.)
- SOC 3305 - Selected Topics in Sociology (3 cr.)

One 4000-level from the following courses:

- ANTH 4025 - Religion in a Global World (3 cr.)
- SOC 4005 - Sociology of Work (3 cr.)
- SOC 4035 - Political Sociology (3 cr.)

- SOC 4099 - Selected Topics in Sociology (3 cr.)
- SOC 4107 - Senior Seminar (3 cr.) *
  or
- ANTH 4107 - Senior Thesis (3 cr.) *
  ** Must be taken in the student's final year*
- SOC 4405 - Independent Study (3 cr.)
- SOC 4560 - Development Studies Seminar (3 cr.)
  Certain courses listed with other disciplines can be substituted with the approval of the adviser and unit head to our 3000 level and 4000 level requirement.

Master of Arts

Egyptology and Coptology MA, with tracks in Art, Archaeology and History; Language, Literature and Religion; and Coptology (M.A.)

Master of Arts in Egyptology & Coptology

The graduate program in Egyptology/Coptology at AUC offers an outstanding opportunity to study Egyptology/Coptology at the graduate level in Egypt. The program will help prepare students for careers in Egyptology/Coptology and for further studies in the discipline. It takes full advantage of being located in Egypt where students can visit and study the monuments in context, as well as gain practical experience in their chosen field. The program is designed to expose students to different aspects of the discipline, teach them to think critically and creatively, and put into practice the academic skills that they are acquiring. To ensure AUC graduates a high quality of academic opportunity and flexibility, these programs follow international guidelines for similar degrees at accredited institutions in the USA and Europe.

Admission criteria

Applicants seeking admission to the graduate program should have an undergraduate degree of high standing (3.0 equivalent to a B or higher), and pass the Egyptology Unit's English language proficiency test (if deemed necessary). Admission will only be in the fall semester. To continue in the program, a 3.0 average must be maintained.

Degree requirements

The MA consists of a total of 27 credits: 8 courses (7 classroom courses, 1 of field-work, appropriate to each candidate's interest, which can be substituted for an alternative class for the Coptology MA), and a thesis. 4 are core courses, and 4 can be chosen by the student. Thus, for students with an archaeological interest this will be more excavation focused, and for students who are more philologically inclined, this will be more epigraphic in nature.

If students have a non-Egyptology background, up to a year of additional course work of prerequisites might be required, although obtaining an A- or above on placement tests in the requisite subjects would waive them. These classes will be drawn from the undergraduate offerings, but for graduate students will require extra work in the form of a more extensive reading list, more detailed and longer papers, and more challenging exams. Some of these courses can be taken, with instructors' consent, while taking graduate courses.

We also require students to have a reading knowledge of either French or German prior to writing a thesis, which would be tested by a language exam. If the student's research can be performed successfully without knowledge of a second language, the department may exempt the student from this requirement.

A thesis is required in all three branches of the MA in Egyptology and Coptology. The thesis must be written in English and submitted in accordance with university regulations.

A maximum of two 4000-level courses may be taken as part of the MA program. Approved 3000- and 4000-level courses may be taken at the 5000-level in special circumstances.

Prerequisites

For students who have no background in Egyptology certain prerequisites will be required. Some of their MA coursework can also be taken during the time that they are working on their prerequisites.

Those needing to take prerequisite courses are strongly advised to reach out to the Graduate Program director prior to submitting their online application.

The prerequisites are:

Fall

- EGPT 3201 - Art and Architecture of Ancient Egypt I (3 cr.)
- EGPT 3211 - History of Ancient Egypt I: Pre-Dynastic Through Middle Kingdom Egypt (3 cr.)
- EGPT 3251 - Hieroglyphics I (3 cr.)

Spring

- EGPT 3202 - Art and Architecture of Ancient Egypt II (3 cr.)
- EGPT 3212 - History of Ancient Egypt II: Middle Kingdom through Ptolemaic Egypt (3 cr.)
- EGPT 3252 - Hieroglyphics II (3 cr.)

Required courses

There are 3 different possible tracks for the MA:

- Art, Archaeology and History
- Language, Literature and Religion
- Coptology

Breakdown of Courses for Each Track

Egyptology: Art, Archaeology, and History (after fulfilling prerequisites)

4 core courses and 4 optional courses and a thesis (EGPT 5992)

Required

- EGPT 5180 - Advanced Method and Theory: Archaeological and Historical (3 cr.)
- EGPT 5420 - Material Culture: Looking at Artifacts in Context (3 cr.) or EGPT 5430 - Site Analysis (3 cr.)
- EGPT 5991 - Research Seminar: Research Design and Writing (3 cr.)
  If a student has had no field experience, s/he should take
- EGPT 5191 - Selected Aspects of Field Work (3 cr.)
  If the student has had sufficient field experience, the fourth course should be chosen from the list below, in consultation with the advisor.

Optional

Four choices from other courses depending on individual interest (if students were AUC undergraduates, they will have to take courses that they have never taken before):

- EGPT 5100 - Living Like an Egyptian: Ancient Egyptian Society (3 cr.)
- EGPT 5110 - Egypt in the First Millennium BC (3 cr.)
- EGPT 5120 - History of Egypt in the Graeco-Roman Era (3 cr.)
- EGPT 5130 - Art, Societies, and Cultures of the Ancient Near East (3 cr.)
- EGPT 5140 - Societies and Cultures of Ancient Nubia (3 cr.)
- EGPT 5144 - Ancient Egyptian Religion and Ethics (3 cr.)
- EGPT 5170 - Selected Topics in Cultural Resource Management and Museology (3 cr.) *
- EGPT 5199 - Selected Topics in Egyptology (3 cr.) *
- EGPT 5230 - Settlement and Daily Life in Ancient Egypt (3 cr.)
- EGPT 5240 - Death and Burial in Ancient Egypt (3 cr.)
- EGPT 5299 - Independent Study and Guided Readings (3 cr.)
- EGPT 5330 - Coptic Art and Architecture (3 cr.)
- EGPT 5440 - The Iconography of Ancient Egypt (3 cr.)
  Any language class (Egyptian texts-from amongst the offerings for the philologists) If appropriate for people who wish to specialize in conservation.

** Courses listed as EGPT 5199 and EGPT 5170 vary in subject matter from one semester to another. Students who take more than one EGPT 5199 or EGPT 5170 courses will be eligible to count each course towards their optional credits for the degree.*

Egyptology: Language, Literature, and Religion (after fulfilling prerequisites)

4 core courses and 4 optional courses and a thesis (EGPT 5992)

Required

- EGPT 5180 - Advanced Method and Theory: Archaeological and Historical (3 cr.)
- EGPT 5991 - Research Seminar: Research Design and Writing (3 cr.)

Any two from the below, depending on level, and in consultation with advisors:

- EGPT 4151 - Hieroglyphics III (3 cr.)
- EGPT 5144 - Ancient Egyptian Religion and Ethics (3 cr.)
- EGPT 5150 - Introduction to Coptic (3 cr.)
- EGPT 5152 - Introduction to Hieratic (3 cr.)
- EGPT 5153 - Hieroglyphics IV (3 cr.)
- EGPT 5510 - Advanced Hieratic (3 cr.)
- EGPT 5550 - Selected Advanced Readings in Ancient Egyptian Religion Texts (3 cr.)
- EGPT 5560 - Selected Advanced Readings in Historical Literature from the Old Kingdom to the Late Period (3 cr.)

Optional

Four choices from other courses depending on individual interest, including:

- EGPT 5100 - Living Like an Egyptian: Ancient Egyptian Society (3 cr.)
- EGPT 5110 - Egypt in the First Millennium BC (3 cr.)
- EGPT 5120 - History of Egypt in the Graeco-Roman Era (3 cr.)
- EGPT 5130 - Art, Societies, and Cultures of the Ancient Near East (3 cr.)
- EGPT 5140 - Societies and Cultures of Ancient Nubia (3 cr.)
- EGPT 5150 - Introduction to Coptic (3 cr.)
- EGPT 5191 - Selected Aspects of Field Work (3 cr.)
- EGPT 5520 - Introduction to Demotic (3 cr.)

Courses that can be taken more than once in consultation with the advisor (provided the content changes).

- EGPT 5170 - Selected Topics in Cultural Resource Management and Museology (3 cr.) *
- EGPT 5199 - Selected Topics in Egyptology (3 cr.) *
- EGPT 5299 - Independent Study and Guided Readings (3 cr.)

** Courses listed as EGPT 5199 and EGPT 5170 vary in subject matter from one semester to another. Students who take more than one EGPT 5199 or EGPT 5170 courses will be eligible to count each course towards their optional credits for the degree.*

Coptology

4 core courses and 4 optional courses and a thesis (EGPT 5992)

Required

- EGPT 5150 - Introduction to Coptic (3 cr.)
- EGPT 5180 - Advanced Method and Theory: Archaeological and Historical (3 cr.)
- EGPT 5330 - Coptic Art and Architecture (3 cr.) , EGPT 5160 - Selected Topics in Coptic Studies (3 cr.), EGPT 5540 - Advanced Coptic Texts (3 cr.) , or EGPT 5420 - Material Culture: Looking at Artifacts in Context (3 cr.)
- EGPT 5991 - Research Seminar: Research Design and Writing (3 cr.)

Optional

Four choices from other courses depending on individual interest:

- EGPT 5110 - Egypt in the First Millennium BC (3 cr.)
- EGPT 5120 - History of Egypt in the Graeco-Roman Era (3 cr.)
- EGPT 5144 - Ancient Egyptian Religion and Ethics (3 cr.)
- EGPT 5160 - Selected Topics in Coptic Studies (3 cr.) *
- EGPT 5299 - Independent Study and Guided Readings (3 cr.)
- EGPT 5320 - The Romano-Byzantine World and Egypt (3 cr.)
- EGPT 5330 - Coptic Art and Architecture (3 cr.)

  ** The Selected Topics classes will change from semester to semester, depending on staffing options and student interest. Topics might range from: The study of Coptic Literature; Coptic Music; The Monastery of Abu Mena; Art in Monastic Devotional Practice, etc.*

MA Thesis

After completing the coursework, each student will prepare a statement of their research intent and methodology for the MA Thesis. The Research Methods and Theory Class will prepare for this. Once this statement is accepted by the committee, the student will be free to research and write, while continuing to meet with his/her committee head on a regular basis. The student's committee must accept the completed thesis, which will be viva voce.

Sociology-Anthropology (M.A.)

The graduate program in sociology and anthropology equips students with a thorough grounding in the theory and research methods of both disciplines. Drawing on the expertise of faculty in sociology, anthropology, and other disciplines, it offers a unique opportunity for students to

conduct original fieldwork-based research amidst an intellectually stimulating environment. Its longstanding tradition of combining scholarship with a commitment to social, economic and political justice makes the program a dynamic environment for learning and research. Our students conduct fieldwork in Egypt and throughout the Middle East on topics such as urban transformation, gender, religious and social movements, memory and politics of the past, migration, environment, health, the family, poverty, ethnicity and nationalism, media, activism, art and expressive culture, and youth cultures.

The program emphasizes an interdisciplinary approach to social theory and research and has broad applications. It has prepared many of our students for doctoral programs in the social sciences at universities in North America, Europe and other parts of the Global South, as well as other career paths in social research, NGOs, development agencies, and international and non-profit organizations.

Located at the heart of the Middle East, the faculty and students engage critically with the region and the representation of its people, cultures, and politics. The vibrant and cosmopolitan city of Cairo makes the program's location ideal for students interested in conducting fieldwork in the Middle East, North Africa, and the Arab world, as well as its connections to the Mediterranean region, Sub-Saharan Africa, and the larger 'global south'. The program, accepts qualified applicants from a variety of academic and professional backgrounds especially those who are talented and interested in acquiring alternative and critical perspectives on society and politics.

Admission

The applicant for this program should be a graduate of high standing from an undergraduate program in the humanities or social sciences (refers to fields in the Faculties of Arts) with an overall grade of gayyid giddan or a grade point average of 3.0 or above. Those who lack this background but who are exceptionally well qualified in other respects may be admitted provisionally. In such cases the department may prescribe a noncredit program of work in theory or method for one or two semesters to correct gaps in course background. The department reserves the right to assess applicants' English proficiency and/or social science abilities in person as a condition of acceptance into the program. Students can be admitted to the program in the fall or spring.

Thesis Track

All students must complete a research thesis in accordance with university regulations. Before commencing work on the thesis, the student must write a thesis proposal following strict departmental guidelines that is approved by three faculty members. Students should familiarize themselves with procedures and deadlines regarding writing the thesis proposal, committee selection, writing of the thesis and presentation to the supervisor and

readers. Complying with the procedural requirements by the appropriate deadlines is the responsibility of the student. After completion of the thesis, it must be defended and approved by the thesis committee.

Courses:

Eight courses (24 credits) are required. All students must take: SOC/ANTH 5201 , SOC/ANTH 5202 , and SOC/ANTH 5298 , and either SOC/ANTH 5203 or SOC/ANTH 5204 . The remaining four courses should be chosen from the list of electives, each of which is offered in principle at least once in a two-year period.

- SOC/ANTH 5205 - Time and Temporality (3 cr.)
- SOC/ANTH 5210 - Selected Topics in Sociology-Anthropology (3 cr.)
- SOC/ANTH 5215 - Relations: Kin, Friends and Neighors (3 cr.)
- SOC/ANTH 5220 - Gender and Sexuality (3 cr.)
- SOC/ANTH 5225 - The Sacred and the Profane: Religion and Society (3 cr.)
- SOC/ANTH 5230 - Theorizing the State (3 cr.)
- SOC/ANTH 5245 - The City: The Making and Unmaking of Urban Lifeworlds (3 cr.)
- SOC/ANTH 5255 - Care, Well-Being and Decent Life (3 cr.)
- SOC/ANTH 5265 - Ethnicity, Identity and Nationalism (3 cr.)
- SOC/ANTH 5270 - Environments, Ecologies and the Anthropocene (3 cr.)
- SOC/ANTH 5275 - Insurgent Publics (3 cr.)
- SOC/ANTH 5280 - History and Memory (3 cr.)
- SOC/ANTH 5285 - Reading Egypt (3 cr.)
- SOC/ANTH 5295 - Reading Capital (3 cr.)
- SOC/ANTH 5297 - Independent Study and Readings (3 cr.)

  A maximum of six hours of 4000-level courses in sociology and anthropology or of 5000-level courses in other disciplines may be taken with departmental approval.

  Additionally, after completing the required eight courses (24 credits) students must enrol in SOC/ANTH 5299 until the completion of their degree.

Comprehensive Examinations Track for SOAN MA

This option allows students who do not wish to write a fieldwork based MA thesis to complete, as an alternative, two further courses and take comprehensive exams. Students not opting to do a thesis will, after the completion of all course requirements, take comprehensive examinations administered by an Examination Committee. An oral examination may be given following the written test.

Courses:

Ten courses (30 credits) are required. All students must take SOC/ANTH 5201 , SOC/ANTH 5202 and either SOC/ANTH 5203 or SOC/ANTH 5204 . The remaining seven courses should be chosen from the list of electives, each of which is offered in principle at least once in a two year period.

- SOC/ANTH 5210 - Selected Topics in Sociology-Anthropology (3 cr.)
- SOC/ANTH 5215 - Relations: Kin, Friends and Neighors (3 cr.)
- SOC/ANTH 5220 - Gender and Sexuality (3 cr.)
- SOC/ANTH 5225 - The Sacred and the Profane: Religion and Society (3 cr.)
- SOC/ANTH 5230 - Theorizing the State (3 cr.)
- SOC/ANTH 5245 - The City: The Making and Unmaking of Urban Lifeworlds (3 cr.)
- SOC/ANTH 5255 - Care, Well-Being and Decent Life (3 cr.)
- SOC/ANTH 5265 - Ethnicity, Identity and Nationalism (3 cr.)
- SOC/ANTH 5270 - Environments, Ecologies and the Anthropocene (3 cr.)
- SOC/ANTH 5275 - Insurgent Publics (3 cr.)
- SOC/ANTH 5280 - History and Memory (3 cr.)
- SOC/ANTH 5285 - Reading Egypt (3 cr.)
- SOC/ANTH 5295 - Reading Capital (3 cr.)
- SOC/ANTH 5297 - Independent Study and Readings (3 cr.)

  A maximum of nine hours of 4000-level courses in sociology and anthropology or of 5000-level courses in other disciplines may be taken with departmental approval.

  Additionally, after completing the required ten courses (30 credits) students must enroll in SOC/ANTH 5289. The comprehensive examination may be repeated once as per University regulations for graduate studies. A student who fails the comprehensive examination a second time would be dismissed from the degree program at the end of the semester in which the examination was retaken.

Final Project

Written and oral comprehensive exams on three topics (one theoretical, one focused on methodological / practical concerns, one based on the interests of the student).

Graduate Diploma

Sociology - Anthropology (Graduate Diploma)

The program seeks to provide a thorough foundation in the principles of Sociology and Anthropology while also developing critical skills for a wide range of real-world professional situations.

Admission Requirements

Requirements for admission to the Graduate Diploma program are the same as those for admission to the MA Sociology - Anthropology. Graduating diploma students may apply to transfer to MA status; however, transfer to such status is not guaranteed and applications are evaluated according to the standard selection criteria (including academic merit, statement of purpose, and recommendation letters).

Requirements

Students take 6 courses (18 credits) in a single two-semester year. All students must take:

SOC/ANTH 5201 - Classical Social Thought (3 cr.)
SOC/ANTH 5202 - Contemporary Social Thought (3 cr.)
Either SOC/ANTH 5203 - Ethnographic Fieldwork (3 cr.) or SOC/ANTH 5204 - The Magic of Numbers: Reading and Working with Numbers (3 cr.)

Additional Requirements

The remaining three courses can be chosen from among 5000 level SOC/ANTH courses:

- SOC/ANTH 5210 - Selected Topics in Sociology-Anthropology (3 cr.)
- SOC/ANTH 5215 - Relations: Kin, Friends and Neighors (3 cr.)
- SOC/ANTH 5220 - Gender and Sexuality (3 cr.)
- SOC/ANTH 5225 - The Sacred and the Profane: Religion and Society (3 cr.)
- SOC/ANTH 5230 - Theorizing the State (3 cr.)
- SOC/ANTH 5245 - The City: The Making and Unmaking of Urban Lifeworlds (3 cr.)
- SOC/ANTH 5255 - Care, Well-Being and Decent Life (3 cr.)
- SOC/ANTH 5265 - Ethnicity, Identity and Nationalism (3 cr.)
- SOC/ANTH 5270 - Environments, Ecologies and the Anthropocene (3 cr.)
- SOC/ANTH 5275 - Insurgent Publics (3 cr.)
- SOC/ANTH 5280 - History and Memory (3 cr.)
- SOC/ANTH 5285 - Reading Egypt (3 cr.)
- SOC/ANTH 5295 - Reading Capital (3 cr.)
- SOC/ANTH 5297 - Independent Study and Readings (3 cr.)

A maximum of 3 hours of 4000-level courses in sociology and anthropology may be taken with departmental approval.

Department of the Arts

Film

Professor: M. Khouri

Assistant professor: T. Maatouk

Professor of Practice: T. El Said (Director of Film Program)

Associate Professor of Practice: R. Brum

Graphic Design

Associate Professor: H. Nawar

Assistant Professor: B. Segone (Director of Visual Arts Program)

Professors of Practice: J. Braun, B. Shehab

Associate Professors of Practice: G. Elsrakbi (Director of Graphic Design), N. Samir, A. Saqfalhait

Music

Professor: W. El-Mahallawy (Chair)

Associate Professor: C. Green (Director of Music Program)

Associate Professor of Practice: D. Rafferty

Theatre

Professor: D. Amin (Director of Theatre Program)

Assistant Professor: B. Popov

Associate Professors of Practice: J. Hoey, N. Said

Visual Art

Assistant Professor: E. Rauh, N. Aboulhosn

Associate Professor of Practice: M.Taghavi

Bachelor of Arts

Film (B.A.)

Bachelor of Arts

The Film Major is a hybrid four-year program combining film theory, aesthetics, and practice. The program aims to graduate multi-skilled filmmakers, film practitioners, and researchers through comprehensive training and courses that adopt a cross-disciplinary approach to film theory and

production, forming an integral vision of the film as a medium. The program offers extensive exposure to different film production crafts while staying up-to-date with the fast-changing film language. Our students are mentored by a team of masterful, award-winning, experienced, and diverse faculty of scholars, thinkers, filmmakers, and film practitioners who cover a wide range of disciplines in film studies and practice.

Knowledge exchange and cultural activities within the program are fostered through a solid local, regional, and international film-related network that also creates great opportunities for students to present their work locally and worldwide. Permanent interaction between students and faculty is highly encouraged and results in a dynamic learning environment that seeds the collective practice of filmmaking while motivating students to explore their singular cinematic voices.

Declaration Policy

- A minimum grade of B in FILM 2120.
- A minimum grade of B in either FILM 2121 or FILM 2123.
- A decision regarding the declaration is made following a portfolio-based interview with the applicant.
- Students who do not pass the first interview can sit for another interview after they complete a third Introductory Required Course from either FILM 2121 or FILM 2123 with a minimum grade of 'B'.
- The decision that follows the second interview is final.

Degree Requirements

A total of 120 credits is required for the bachelor's degree in Film in the following areas: I. Core Curriculum (37 credits), II. Film Concentration Requirements (48 - 51 credits), III. Collateral Requirements (9 credits), IV. General Electives (23-26 credits).

I. Core Curriculum (37 credits)

The remaining 3 credit hours required to satisfy the Core Curriculum are fulfilled by completing the film major capstone course, either FILM 4250 or FILM 5170.

II. Film Concentration Requirements (48 - 51 credits)

Students must complete the following courses:

1. Introductory Required Courses (9 Credits)

- FILM 2120 - Introduction to Film Art (3 cr.)
- FILM 2121 - Introduction to Fiction Filmmaking (3 cr.)

- FILM 2123 - Introduction to Non-Fiction & Experimental Filmmaking (3 cr.)

2. Film Studies Courses (18 credits)

Required:

- FILM 3110 - World Cinema (3 cr.)
- FILM 3130 - Film Theory I (3 cr.)
- FILM 3132 - Film Theory II (3 cr.)

And choose three out of the following courses:

- ARIC 3106 - Arabic Literature and Film (3 cr.)
- ECLT 3030 - Literature and Cinema (3 cr.)
- FILM 3070 - Selected Topics in Film (3 cr.)
- FILM 3115 - Topics in American Cinema (3 cr.)
- FILM 3120 - Cinema in Egypt and the Arab World (3 cr.)
- FILM 3125 - Topics in National Cinemas (3 cr.)
- FILM 3150 - Topics in Gender and Film (3 cr.)
- FILM 3160 - The Filmmaker (3 cr.)
- FILM 4402 - Independent Study (1-3 cr.)
- PHIL 5150 - Philosophy and Film (3 cr.)

3. Film Production (18 credits)

Required:

- FILM 3201 - Directing Fiction Films (3 cr.)
- FILM 3252 - Writing for Film (3 cr.)
- FILM 3254 - Film Editing (3 cr.)
- FILM 3402 - Hybrid Filmmaking (3 cr.)

And choose two out of the following courses:

- DSGN 3235 - Animation and 3D (3 cr.)
- FILM 3071 - Selected Topics in Filmmaking (3 cr.)
- FILM 3253 - Cinematography (3 cr.)
- FILM 3255 - Film Producing (3 cr.)
- FILM 3355 - Internship in Film Production (3 cr.)
- MUSC 3306 - Sound for Picture Production (3 cr.)

4. Capstone Courses (3-6 credits)

Students must choose either

- FILM 5170 - Advanced Seminar in Film Studies and Research (3 cr.) *

Or both of the following courses:

- FILM 4250 - Senior Film Project I (3 cr.) **

- FILM 4260 - Senior Film Project II (3 cr.)
  ** If chosen, the Advanced Seminar in Film Studies and Research will count as the major capstone course for this major.*
  *** If chosen, the Senior Film Project I will count as the major capstone course for this major.*

III. Collateral Requirements (9 credits)

Choose three courses in THTR, DSGN, ARTV, MUSC, or ECLT in consultation with the advisor.

IV. General Electives (23-26 Credits)

Graphic Design (B.A.)

Bachelor of Arts

The Graphic Design program at AUC is a four-year program consisting of various theoretical, practical and technical studio courses that will enable students to integrate a good command of visual language with conceptual work, theory, and technology. Our theory courses are unique for their focus on regional and local design history and practices. The program introduces students to various practical studio courses that produce 2D, 3D, and time-based and interactive design projects.

Classes are mostly critique based, encouraging debate, discussion, and lateral thinking, utilizing formal and practical knowledge. All course work is done in studios that have access to the Department of the Arts workshops and labs. The classes are taught by a group of accomplished faculty supported by visiting faculty and guest lectures. Students create work that is uniquely theirs, helping them to build a portfolio from which they can develop their careers.

Declaration Policy

- A minimum grade of C+ in : DSGN 2200 - Design Foundations (3 cr.), and DSGN 2113 - Introduction to Visual Cultures (3 cr.).
- After completing these two courses, students are requested to sit for a portfolio interview where a committee evaluates their work.
- Based on space availability, a limited number of students who have completed their courses and who present a promising portfolio as determined by the department will be accepted into the major.
- Students who did not pass the interview can sit for another interview after they take DSGN 2201 - Design Principles & Practices (3 cr.) and DSGN 2115 - History of Graphic Design (3 cr.).

- If a student is rejected after the second interview, they cannot declare graphic design as a major, but they can register for any of the Graphic Design minors.
- Please note that the minimum grade for the DSGN courses mentioned is C+ to declare the major or any of the minors.

Degree Requirements

A total of 120 credits are required for a bachelor's degree in Graphic Design in the following areas: I. Core Curriculum (37 credits), II. Graphic Design Concentration Requirements (63 credits), III. General Electives (20 credits).

I. Core Curriculum (37 credits)

The remaining 3 credit hours required to satisfy the Core Curriculum are fulfilled by completing the graphic design major capstone course DSGN 4270 - Senior Project Practice (3 cr.).

II. Graphic Design Concentration Requirements (63 Credits)

Students must complete the following courses (33 credits):

- DSGN 2113 - Introduction to Visual Cultures (3 cr.)
- DSGN 2115 - History of Graphic Design (3 cr.)
- DSGN 2200 - Design Foundations (3 cr.)
- DSGN 2201 - Design Principles & Practices (3 cr.)
- DSGN 2210 - Typography I (3 cr.)
- DSGN 2240 - Color (3 cr.)
- DSGN 2250 - Digital Practices I (3 cr.)
- DSGN 2260 - Production for Designers (3 cr.)
- DSGN 3220 - Typography II (3 cr.)
- DSGN 4269 - Senior Project Thesis (3 cr.)
- DSGN 4270 - Senior Project Practice (3 cr.) is the major capstone course for this major.

And the following additional requirements (30 credits)

1. Professional Practice, Choose five out of the following courses:

- DSGN 2300 - Analog Game Design (3 cr.)
- DSGN 3202 - Logo and Visual Identity Design (3 cr.)
- DSGN 3203 - Publication Design (3 cr.)
- DSGN 3204 - Packaging Design (3 cr.)
- DSGN 3205 - Retail Design (3 cr.)

- DSGN 3210 - Information Design (3 cr.)
- DSGN 3213 - Interactive Design (3 cr.)
- DSGN 3230 - Type Design (3 cr.)
- DSGN 3265 - Advertising and Branding (3 cr.)
- DSGN 3266 - Design for Social Change (3 cr.)
- DSGN 3270 - Selected Topics in Design (3 cr.)
- DSGN 3400 - Digital Game Design (3 cr.)
- DSGN 3500 - Creative Coding (3 cr.)
- DSGN 4200 - Design Field Practices (3 cr.)

2. Technical Practice, Choose three out of the following courses:

- ARTV 2201 - Introduction to Drawing (3 cr.)
- ARTV 2204 - Introduction to Time-Based Media (3 cr.)
- DSGN 2245 - Illustration (3 cr.)
- DSGN 3235 - Animation and 3D (3 cr.)
- DSGN 3250 - Digital Practices II (3 cr.)
- DSGN 3260 - Photography for Designers (3 cr.)
- DSGN 3270 - Selected Topics in Design (3 cr.)
- DSGN 3300 - Digital Game Mechanics (3 cr.)
- DSGN 4210 - Portfolio (3 cr.)

3. History and Theory, Choose two out of the following courses:

- ARIC 3268 - The Art of the Book in the Islamic World (3 cr.)
- DSGN 3117 - History of Advertising in the Arab World (3 cr.)
- DSGN 3118 - History of Arabic Calligraphy (3 cr.)
- DSGN 3270 - Selected Topics in Design (3 cr.)
- DSGN 5115 - History of Graphic Design in the Arab world (3 cr.)

III. General Electives (20 credits)

Music (B.A.)

Bachelor of Arts

The Music major offers two concentration tracks, one in Music Technology and one in Music Performance, of 15 credits each. To be eligible to declare a Music major, students need to choose one concentration track and follow the relevant declaration policy listed below.

Music Technology Concentration

The Music Technology Concentration provides students with a foundation for careers in sound engineering, and music production. Its curriculum covers essential skills such as recording, editing, and composing music for various media, including video and film. The concentration requires training in both Western and Arab music theory and literature, with an emphasis on sight-reading, musical analysis, ensembles, and piano proficiency. Students also gain practical skills in MIDI technology, digital audio workstations (DAWs), and advanced techniques for mixing and mastering, equipping them for both professional work and personal music projects.

Music Performance Concentration

For students pursuing the Music Performance concentration, the focus is on achieving high- level performance skills in either voice or an instrument. The concentration requires training in both Western and Arab music theory and literature, with an emphasis on sight-reading, musical analysis, and piano proficiency. Students in the Music Performance concentration will participate in ensembles, concerts, and solo recitals, developing a professional-level proficiency in their chosen instrument. In addition to performance, students study the socio-cultural contexts of music, compose and arrange works, and engage in research on musical traditions across history.

Declaration Policy

Successfully complete MUSC 2200 and MUSC 2300.

Students must be admitted to the major before pursuing a concentration. To pursue a concentration in Music Technology students submit a portfolio of their work and to pursue a concentration in Music Performance students complete an audition and interview.

Degree Requirements

A total of 120 credits is required for the bachelor's degree in Music in the following areas; I. Core Curriculum (37 credits), II. Music Concentration Requirements (57 credits), III. General Electives (26 credits).

I. Core Curriculum (37 credits)

The remaining 3 credit hours required to satisfy the Core Curriculum are fulfilled by completing the music major capstone course MUSC 4900 - Advanced Seminar (3 cr.).

II. Music Program Requirements (57 credits)

Foundational Music Program Requirements (39 credits)

Prerequisites (9 cr.)

- MUSC 1805 - How to Read Music (3 cr.)
- MUSC 2200 - Introduction to Music (3 cr.)
- MUSC 2300 - Introduction to Music Technology (3 cr.)

Theory (16 credits)

- MUSC 2400 - Western Music Theory I (3 cr.)
- MUSC 2401 - Sight-Singing and Aural Skills I (1 cr.)
- MUSC 2450 - Arab Music Theory I (3 cr.)
- MUSC 2451 - Maqam I (Arab Music Sight-Singing and Aural Skills) (1 cr.)
- MUSC 3400 - Western Music Theory II (3 cr.)
- MUSC 3401 - Sight-Singing and Aural Skills II (1 cr.)
- MUSC 3450 - Arab Music Theory II (3 cr.)
- MUSC 3451 - Maqam II (Arab Music Sight-Singing and Aural Skills) (1 cr.)

History/Literature (6 credits)

Complete two of the following courses:

- MUSC 3200 - Music in the Western Tradition: Ancient to Classical (3 cr.)
- MUSC 3250 - Music in the Arab Tradition (3 cr.)
- MUSC 3300 - Music in the Western Tradition: Romantic to Contemporary (3 cr.)

Piano Proficiency (2 credits)

- MUSC 2850 - Individual Instruction for Piano Proficiency I (1 cr.)
- MUSC 2851 - Individual Instruction for Piano Proficiency II (1 cr.)

Music Technology (6 credits)

- MUSC 2301 - Music Production Using Digital Audio Workstations I (3 cr.)
- MUSC 4309 - Digital Mixing Techniques (3 cr.)

Concentration Requirements (15 credits)

Students are required to choose one of the following tracks.

Music Technology Concentration (15 credits)

Students who choose to concentrate on Music Technology are required to complete the following:

- MUSC 2303 - Microphone Techniques (3 cr.)
- MUSC 3302 - Digital Audio / MIDI Lab (1 cr.) (1 cr., repeated 3 x = 3 cr.)
- MUSC 3304 - Music Production for Visual Media (3 cr.)
- MUSC 3306 - Sound for Picture Production (3 cr.)
- MUSC 4900 - Advanced Seminar (3 cr.)

Music Performance Concentration (15 credits)

Students who choose to concentrate on Music Performance are required to complete the following:

- Ensembles (6 cr.): Choose from the repeatable 1-credit courses below. Total of 6 credits required.
    - MUSC 2620 - Arab Music Ensemble (1 cr.)
    - MUSC 2630 - Guitar Ensemble (1 cr.)
    - MUSC 2640 - Chamber Music Ensemble (1 cr.)
    - MUSC 2650 - Rehearsal/Performance Practicum (1 cr.)
    - MUSC 2660 - Chamber Singers (1 cr.)
    - MUSC 2670 - Cairo Choral Society (1 cr.)
- MUSC 1800 - Individual Lessons in Voice or an Instrument (1 cr.) Individual lessons (6 cr.): A repeatable 1-credit course. Total of 6 credits required.
- MUSC 4980 - Capstone Final Recital (3 cr.)

Additional Music Courses (3 credits)

Additional Music Courses (3 credits): Courses used to satisfy the Music Performance Concentration or Music Technology Concentration may not be double-counted in this section.

Up to three ensembles (1 cr., repeated 3 X = 3 cr.)

- MUSC 1800 - Individual Lessons in Voice or an Instrument (1 cr.) (1 cr., repeated 3 x = 3 cr.)
- MUSC 3099 - Selected Topics in Music (3 cr.)
- MUSC 3110 - Diction for Singers in the Western Tradition (3 cr.)
- MUSC 3150 - Western and Arab Musical Instruments (3 cr.)
- MUSC 3200 - Music in the Western Tradition: Ancient to Classical (3 cr.)
- MUSC 3250 - Music in the Arab Tradition (3 cr.)
- MUSC 3300 - Music in the Western Tradition: Romantic to Contemporary (3 cr.)
- MUSC 3308 - Live Sound Reinforcement (3 cr.)
- MUSC 3500 - Interactive Sound Design (3 cr.)
- MUSC 4308 - Music Production Using Digital Audio Workstations II (3 cr.)

- MUSC 4400 - Western Music Theory III (3 cr.)
- MUSC 4401 - Sight-Singing and Aural Skills III (1 cr.)
  Students who choose to take MUSC 4400 must take MUSC 4401 in the same semester.

III. General Electives (26 credits)

Theatre (B.A.)

Bachelor of Arts

In the Theatre major creativity, collaboration, and critical thinking meet, preparing graduates for success on stage, screen and beyond. The degree balances practical theatre experience in acting, directing, design, and technical theatre with the study of performance literature, history, and theory. Students who graduate work in theatre, film, television, event management, media, education, and corporate and non-profit industries. Graduates have gone on to become highly successful leaders in the entertainment and creative industries in Egypt and internationally.

The Theatre program produces a season of English and Arabic language plays each year directed and supported by faculty and guest artists and performed at both the New Cairo and at the downtown Tahrir campus. Students work on the productions as part of their study and receive course credit for participating. The program is also committed to producing student projects. Students write, perform, direct, design and manage their own work each semester in classes and as public performances. Rooted in Cairo?s vibrant cultural scene, the AUC Theatre program opens doors to global opportunities in the arts, education, media, and leadership.

Declaration Policy

- A minimum grade of a B in THTR 1201.
- An interview to determine the student's ability to pursue Theatre at the university level.

Degree Requirements

A total of 120 credits is required for the bachelor's degree in Theatre in the following areas; I. Core Curriculum (37 credits), II. Theatre Concentration Requirements (45 credits), III. Collateral Requirements (3 credits), IV. General Electives (35 credits).

Core Curriculum (37 credits)

The remaining 3 credit hours required to satisfy the Core Curriculum are fulfilled by completing the Theatre major capstone course THTR 4703.

Theatre Concentration Requirements (45 credits)

- THTR 1201 - Theatre in the Making (3 cr.)
- THTR 2201 - Acting I (3 cr.)
- THTR 2401 - Introduction to Technical Theatre (3 cr.)
- THTR 3103 - Drama in Context I: Ritual to Pre-Modern (3 cr.)
- THTR 3104 - Drama in Context II: Modern to Contemporary (3 cr.)
- THTR 3301 - Directing I (3 cr.)
- THTR 3401 - Design for the Theatre (3 cr.)
- THTR 3601 - Advanced Theatre Practicum (3 cr.)
- THTR 3603 - Advanced Production and Design Practicum (3 cr.)
- THTR 4703 - Senior Thesis (3 cr.)

  and either:
- THTR 2601 - Production Practicum (3 cr.)

  or
- THTR 2603 - Rehearsal and Performance Practicum (3 cr.)

Twelve theatre credits to be chosen from the following:

- THTR 2211 - Acting in Arabic I (3 cr.)
- THTR 2601 - Production Practicum (3 cr.)
- THTR 2603 - Rehearsal and Performance Practicum (3 cr.)
- THTR 3099 - Selected Topics in Theatre (3 cr.)
- THTR 3201 - Acting II (3 cr.)
- THTR 3202 - Acting for the Camera (3 cr.)
- THTR 3203 - Special Topics in Acting (3 cr.)
- THTR 3205 - Acting Styles (3 cr.)
- THTR 3207 - Movement for the Stage (3 cr.)
- THTR 3211 - Acting in Arabic II (3 cr.)
- THTR 3403 - Make Up for the Theatre (3 cr.)
- THTR 3501 - Scriptwriting (3 cr.)
- THTR 3601 - Advanced Theatre Practicum (3 cr.)
- THTR 3603 - Advanced Production and Design Practicum (3 cr.)
- THTR 3604 - Arab Women Playwrights (3 cr.)
- THTR 4103 - Dramatic Theory and Criticism (3 cr.)
- THTR 4110 - Theatrical and Dramatic Translation (3 cr.)
- THTR 4301 - Directing II (3 cr.)
- THTR 4405 - Stage Lighting (3 cr.)
- THTR 4406 - Costume Design for Theatre and Film (3 cr.)
- THTR 4444 - Internship in Drama (3 cr.)

Collateral Requirements (3 credits)

Three credits from the following:

- ARIC 3115 - Arabic Drama (3 cr.)
- ECLT 3053 - Modern Drama (3 cr.)
- ECLT 3060 - Shakespeare (3 cr.)
- FILM 2120 - Introduction to Film Art (3 cr.)
- FILM 2121 - Introduction to Fiction Filmmaking (3 cr.)
- FILM 2123 - Introduction to Non-Fiction & Experimental Filmmaking (3 cr.)
- FILM 3070 - Selected Topics in Film (3 cr.)
- MUSC 1011 - Vocal Methods (3 cr.)

  Other courses in the Department of the Arts or the School of Humanities and Social Sciences that cover performance or drama may also count with the program director's approval.

General Electives (35 credits)

Visual Arts (B.A.)

Bachelor of Arts

The Visual Arts major provides students with an opportunity to develop their independent vision and creative practice as artists in an educational environment emphasizing conceptual research and expression across media. The curriculum balances between practical work and theory. Students intending to major in Visual Arts begin with visual research and analysis and then progress to intermediate studio courses in specific media and techniques, such as drawing, painting, sculpture and installation, photography, time-based media, alternative media practices, and experimental animation.

Declaration Policy

Complete ARTV 2200 - Art Foundations (3 cr.) and ARTV 2113 - Introduction to Visual Cultures (3 cr.). A decision regarding the declaration is made following a portfolio-based interview with the applicant. Students who did not pass the first interview can sit for another one after they complete one of the additional requirement courses. If a student is rejected after the second interview, they cannot declare visual arts as a major, but they can register in the minor.

Degree Requirements

A total of 120 credits is required for the bachelor's degree in Visual Arts in the following areas: I. Core Curriculum (37 credits), II. Visual Arts Concentration Requirements (48 credits), III. General Electives (35 credits).

I. Core Curriculum (37 credits)

The remaining 3 credit hours required to satisfy the Core Curriculum are fulfilled by completing the visual arts major capstone course ARTV 4270 - Senior Project (B) (3 cr.).

II. Visual Arts Concentration Requirements (48 credits)

Students must complete the following courses (33 credits):

- ARTV 2113 - Introduction to Visual Cultures (3 cr.)
- ARTV 2200 - Art Foundations (3 cr.)
- ARTV 2214 - Global Art History: Ancient Power to Early Modernity (3 cr.)
- ARTV 3115 - Art Theory (3 cr.)
- ARTV 3311 - Advanced Painting and Drawing (3 cr.)
- ARTV 3312 - Advanced Studio Arts: New Media (3 cr.)
- ARTV 3313 - Advanced Studio Arts: Archival Practices (3 cr.)
- ARTV 3314 - Advanced Studio Arts: Community Engagement (3 cr.)
- ARTV 3316 - Global Art History: Modernism to Contemporary Politics (3 cr.)
- ARTV 4269 - Senior Project (A) (3 cr.)
- ARTV 4270 - Senior Project (B) (3 cr.)
  The Senior Project (B) is the major capstone course for this major.

And 15 additional credits to be selected from the list below:

- ARTV 2201 - Introduction to Drawing (3 cr.)
- ARTV 2202 - Introduction to Painting (3 cr.)
- ARTV 2203 - Introduction to Sculpture (3 cr.)
- ARTV 2204 - Introduction to Time-Based Media (3 cr.)
- ARTV 2207 - Introduction to Ceramics (3 cr.)
- ARTV 2208 - Internship Practice (3 cr.)
- ARTV 2230 - Introduction to Photography and Media Arts (3 cr.)
- ARTV 3270 - Selected Topics in Art (3 cr.)
- ARTV 5110 - Contemporary issues in Arab Art (3 cr.)

III. General Electives (35 credits)

Minors

Film Minor

Minor Requirements

Students are eligible to declare a Film minor after completing any of the following courses with a minimum grade of 'B':

- FILM 2120 - Introduction to Film Art (3 cr.)
- FILM 2121 - Introduction to Fiction Filmmaking (3 cr.)
- FILM 2123 - Introduction to Non-Fiction & Experimental Filmmaking (3 cr.)

All Film minor students are required to complete 18 credit hours of coursework, as specified below.

Complete TWO Foundational Courses (6 credits)

- FILM 2120 - Introduction to Film Art (3 cr.)
- FILM 2123 - Introduction to Non-Fiction & Experimental Filmmaking (3 cr.)

Complete THREE Intermediate Courses (9 credits)

- FILM 2121 - Introduction to Fiction Filmmaking (3 cr.)
- FILM 3110 - World Cinema (3 cr.)
- FILM 3115 - Topics in American Cinema (3 cr.)
- FILM 3120 - Cinema in Egypt and the Arab World (3 cr.)
- FILM 3150 - Topics in Gender and Film (3 cr.)
- FILM 3160 - The Filmmaker (3 cr.)
- FILM 3252 - Writing for Film (3 cr.)
- FILM 3254 - Film Editing (3 cr.)

Complete ONE Advanced Course (3 credits)

- FILM 3130 - Film Theory I (3 cr.)
- FILM 3132 - Film Theory II (3 cr.)
- FILM 3201 - Directing Fiction Films (3 cr.)
- FILM 3402 - Hybrid Filmmaking (3 cr.)

Game Design Minor

The Game Design discipline allows creative content creators such as designers, writers, artists, and musicians -to name a few-, to work with programmers and engineers collaboratively by integrating their talents and knowledge in this interactive medium that combines art, design, and technology.

This multidisciplinary minor will enable students from diverse backgrounds to understand the role of a game designer by developing original ideas and prototyping them collaboratively.

By the completion of this minor, the students will discover their potential within the multiple creative roles that are needed in any game development environment. It will also connect them and expose them to a wide range of work opportunities.

Minor Requirements (18-19 credits)

Students minoring in Game Design must complete:

- CSCE 1000 - Introduction to Computers and Their Applications (3 cr.)
  or
- CSCE 1101 - Fundamentals of Computing II (3 cr.) concurrent with CSCE 1102 - Fundamentals of Computing II Lab (1 cr.)
  and all the following five courses:
- CSCE 1001 - Fundamentals of Computing I (3 cr.)
- DSGN 2200 - Design Foundations (3 cr.)
- DSGN 2300 - Analog Game Design (3 cr.)
- DSGN 3300 - Digital Game Mechanics (3 cr.)
- DSGN 3400 - Digital Game Design (3 cr.)

Interactive Media Design Minor

A minor in Interactive Media Design will enable students to understand the creative practice in the digital sphere. From interactive design to sound design to different technical skills, students will be exposed to thinking and working in the media design world. Students majoring in Graphic Design must take MUSC 2300 and MUSC 3500.

Minor Requirements (15 credits)

Choose three of the following courses:

- DSGN 2200 - Design Foundations (3 cr.)
- DSGN 2250 - Digital Practices I (3 cr.)
- DSGN 3250 - Digital Practices II (3 cr.)
- MUSC 2300 - Introduction to Music Technology (3 cr.)
  and choose two additional courses from the following:
- DSGN 3213 - Interactive Design (3 cr.)
- DSGN 3500 - Creative Coding (3 cr.)
- MUSC 3500 - Interactive Sound Design (3 cr.)

Music Minor

Students who minor in music performance must take courses in either Western theory, literature and performance or Arab theory, literature and performance. In order to complete the minor in music, a student will:

- Understand and sight-read music notation.
- Acquire fundamental listening skills.
- Learn the basic principles of music theory (either Western or Arab).
- Study representative great works of music literature and the composers who produced them (either Western or Arab).
- Make substantial progress in singing or playing an instrument; more advanced students may also present part of a solo recital, with the permission of their private teacher and the Music Program Director.
- Perform by singing and/or playing an instrument in an ensemble.

This will require that the student complete 17 credit hours of instruction, normally including the following:

Theory and Literature (10 cr.)

- MUSC 2200 - Introduction to Music (3 cr.)

Either

Western, music theory and literature:

- MUSC 2400 - Western Music Theory I (3 cr.)
  AND
- MUSC 2401 - Sight-Singing and Aural Skills I (1 cr.)
  AND
- MUSC 3200 - Music in the Western Tradition: Ancient to Classical (3 cr.)

Or

Arab, music theory and literature:

- MUSC 2450 - Arab Music Theory I (3 cr.)
  AND
- MUSC 2451 - Maqam I (Arab Music Sight-Singing and Aural Skills) (1 cr.)
  AND
- MUSC 3250 - Music in the Arab Tradition (3 cr.)

Performance (4 cr.)

MUSC 1800 Applied Private Instruction (1 cr. each = 2 cr.)

Two ensemble courses, chosen from among the following:

• MUSC 2620 - Arab Music Ensemble (1 cr.)
• MUSC 2630 - Guitar Ensemble (1 cr.)
• MUSC 2640 - Chamber Music Ensemble (1 cr.)
• MUSC 2650 - Rehearsal/Performance Practicum (1 cr.)
• MUSC 2660 - Chamber Singers (1 cr.)
• MUSC 2670 - Cairo Choral Society (1 cr.)

Music Technology (3 cr.)

EITHER

- MUSC 2300 - Introduction to Music Technology (3 cr.)

OR

- MUSC 2301 - Music Production Using Digital Audio Workstations I (3 cr.)

Music Technology Minor

In order to complete a minor in music technology, a student will:

- Learn to read music, and acquire fundamental listening and sight-reading skills.
- Learn the basic principles of music theory (either Western or Arab).
- Acquire some fluency at playing piano, and at using the keyboard as a tool for music data entry; more advanced students may present a part of a solo recital, in piano or another instrument, with permission of their teacher.
- Learn the fundamental techniques of recording, editing, mixing, and mastering.
- Acquire an intermediate knowledge of digital audio workstations (DAWs) and editing software.
- Acquire an intermediate understanding of MIDI.

This will require the student to complete 18 credit hours of instruction, normally including the following:

Theory and Literature (7 cr.)

- MUSC 2200 - Introduction to Music (3 cr.)

EITHER

- MUSC 2400 - Western Music Theory I (3 cr.)
  AND
- MUSC 2401 - Sight-Singing and Aural Skills I (1 cr.)

OR

- MUSC 2450 - Arab Music Theory I (3 cr.)
  AND
- MUSC 2451 - Maqam I (Arab Music Sight-Singing and Aural Skills) (1 cr.)

Performance (2 cr.)

To be taken twice (this course can be repeated for credit):

MUSC 2850 - Individual Instruction for Piano Proficiency I (1 cr.)

Music Technology (9 cr.)

- MUSC 2300 - Introduction to Music Technology (3 cr.)
- MUSC 2301 - Music Production Using Digital Audio Workstations I (3 cr.)
- MUSC 3302 - Digital Audio / MIDI Lab (1 cr.)

Theatre Minor

The minor in theatre provides a general introduction to the art and craft of theatre through the study of dramatic literature and the exploration of performance processes through practical application.

Students are encouraged to declare the minor early in their academic career to accommodate necessary prerequisites and give the student the benefit of practical experience. After declaring, all students must have an advising session with the Director of Theatre to define the selected course of study.

Requirements

A minimum of 15 credits in Theatre:

- THTR 1201 - Theatre in the Making (3 cr.)
  Three credits total from the following:
- THTR 2401 - Introduction to Technical Theatre (3 cr.)

- THTR 2601 - Production Practicum (3 cr.)
- THTR 2603 - Rehearsal and Performance Practicum (3 cr.)

Two courses from the following:

- THTR 2201 - Acting I (3 cr.)
- THTR 2211 - Acting in Arabic I (3 cr.)
- THTR 3301 - Directing I (3 cr.)

One course from the following:

- THTR 3103 - Drama in Context I: Ritual to Pre-Modern (3 cr.)
- THTR 3104 - Drama in Context II: Modern to Contemporary (3 cr.)

Type Design Minor

Students will learn about the intricacies of Type in the Type Design Minor. The skill for using and manipulating both Latin and Arabic typography is the highlight of this minor. Special focus is paid to the history and practice of Arabic script and type.

Based on the availability of space, a limited number of students will be accepted into the minor. A minimum score of C+ is required for two courses for the minor declaration; DSGN 2113 and DSGN 2200.

Minor Requirements (15 credits)

Students required to complete the THREE following courses:

- DSGN 2113 - Introduction to Visual Cultures (3 cr.)
- DSGN 2200 - Design Foundations (3 cr.)
- DSGN 2210 - Typography I (3 cr.)

and choose TWO additional courses from the following:

- DSGN 3118 - History of Arabic Calligraphy (3 cr.)
- DSGN 3220 - Typography II (3 cr.)
- DSGN 3230 - Type Design (3 cr.)

Visual Arts Minor

The minor in Visual Arts provides a solid exploration of Visual Arts through the study of art history, critical theory, and studio practices.

Students are encouraged to declare the minor early in their academic career to accommodate necessary prerequisites and benefit from the curriculum. After declaring, all students must have an advising session with the Director of Visual Arts to define the selected course of study.

Basic Requirements (9 credits)

- ARTV 2113 - Introduction to Visual Cultures (3 cr.)
- ARTV 2200 - Art Foundations (3 cr.)

and choose one of the following courses:

- ARTV 2201 - Introduction to Drawing (3 cr.)
- ARTV 2202 - Introduction to Painting (3 cr.)
- ARTV 2203 - Introduction to Sculpture (3 cr.)
- ARTV 2204 - Introduction to Time-Based Media (3 cr.)
- ARTV 2207 - Introduction to Ceramics (3 cr.)
- ARTV 2230 - Introduction to Photography and Media Arts (3 cr.)
- ARTV 3270 - Selected Topics in Art (3 cr.)

Theory Requirements (3 credits)

Choose one of the following courses:

- ARTV 2214 - Global Art History: Ancient Power to Early Modernity (3 cr.)
- ARTV 3115 - Art Theory (3 cr.)
- ARTV 3316 - Global Art History: Modernism to Contemporary Politics (3 cr.)

Advanced Requirement (3 credits)

Choose one of the following courses:

- ARTV 3311 - Advanced Painting and Drawing (3 cr.)
- ARTV 3312 - Advanced Studio Arts: New Media (3 cr.)
- ARTV 3313 - Advanced Studio Arts: Archival Practices (3 cr.)
- ARTV 3314 - Advanced Studio Arts: Community Engagement (3 cr.)
- ARTV 5110 - Contemporary issues in Arab Art (3 cr.)

The Cynthia Nelson Institute for Gender and Women's Studies

Director: H. Rizzo

Advisory Committee: A. Elbendary (ARIC), D. Makram-Ebeid (SEA), H. Rizzo (SEA), H. Sabea (SEA), H. Sayed (Law)

Minors

Gender Studies Minor

The minor in gender studies provides students with basic knowledge of gender concepts and theory from a cross-cultural perspective.

Fifteen credits are required for the Gender Studies minor.

Requirements (15 credits):

- ANTH 3105 - Fieldwork Methods (3 cr.)
- GWST 5199 - Crossing Boundaries: An Introduction to Gender and Interdisciplinarity (3 cr.)

Select two 3000-level courses from the following:

- ANTH 3080 - Gender, Sexuality and Social Change (3 cr.)
- ARIC 3104 - Arabic Literature and Gender (3 cr.)
- ECLT 3045 - Literature and Gender (3 cr.)
- FILM 3150 - Topics in Gender and Film (3 cr.)
- SOC 3060 - Social Constructions of Difference: Race, Class and Gender (3 cr.)

Select one 4000- or 5000- level course from the following:

- ANTH 4030 - Women, Islam and the State (3 cr.)
- GWST 5170 - Special Topics in Gender and Women's Studies (3 cr.)
- HIST 4112 - A History of Women (and Men) (3 cr.)
- HIST 4215 - The Marriage Crisis and the Middle East (3 cr.)

Master of Arts

Gender and Women's Studies (M.A.)

Program Description

The graduate program in Gender and Women's Studies is an interdisciplinary critical social theory program. It provides students with a solid grounding in how relations of gender are embedded in social, economic and political formations with a particular focus on the Middle East/ North Africa and the comparative global south.

The interdisciplinary training in gender and women's studies prepares students for doctoral programs in social science disciplines, in addition to a variety of professional career paths in social research, international development agencies, and non-governmental organizations.

Admission

Applicants seeking admission to the graduate program should have an undergraduate degree of high standing in the social sciences or humanities with an overall grade of gayyid giddan or a grade point average of 3.0 or above. Those who lack this background but who are exceptionally

well qualified may be admitted provisionally. Provisional admission usually involves additional non-credit coursework to prepare the applicant for graduate work over one or two semesters. Provisionally accepted students must successfully complete the required prerequisites before being admitted to enroll in GWST graduate courses. Students are admitted to the graduate degree program in the fall and spring semesters.

Requirements

Eight courses (24 credit hours) are required for the MA Thesis Track.

Ten courses (30 credit hours) are required for the MA Comprehensive Examination Track.

Students are required to take the following two courses:

- GWST 5100 - Theorizing Gender (3 cr.)
- GWST 5205 - Gender and Feminist Research Methodologies (3 cr.)

Students select three out of the following courses for the thesis track and select four out of the following for the comprehensive exam track.

- GWST 5101 - Visual, Literary, and Critical Approaches to Gender in MENA (3 cr.)
- GWST 5104 - Mobilities: Gender and Migration (3 cr.)
- GWST 5109 - Gendering the City (3 cr.)
- GWST 5170 - Special Topics in Gender and Women's Studies (3 cr.)
- SOC/ANTH 5220 - Gender and Sexuality (3 cr.)
- SOC/ANTH 5230 - Theorizing the State (3 cr.)

Students, in consultation with the IGWS director, need to select three additional electives for those on the thesis track and four additional electives for those on the comprehensive exam track from the list below. One 4000 level course may be taken towards the MA with the permission of the IGWS director.

- ECON 5252 - Economic Development in Middle East Countries (3 cr.)
- EDUC 5212 - Comparative Gender, Youth, and Human Development Policy (3 cr.)
- LAW 5116 - Law and Economic Development (3 cr.)
- LAW 5273 - Introduction to International Human Rights Law and Critique (3 cr.)
- MRS 5101 - International Refugee Law (3 cr.)
- MRS 5200 - Introduction to Migration and Refugee Studies (3 cr.)
- MRS 5202 - Migration & Refugee Movements in the Middle East and North Africa (3 cr.)
- PHIL 5120 - Advanced Seminar in Feminist Philosophy (3 cr.)
- PPAD 5136 - Gender in Public Policy and Administration (3 cr.)
- SOC/ANTH 5205 - Time and Temporality (3 cr.)
- SOC/ANTH 5270 - Environments, Ecologies and the Anthropocene (3 cr.)
- SOC/ANTH 5275 - Insurgent Publics (3 cr.)

MA Program Tracks

MA Thesis Track

All students on this track must complete a thesis according to university regulations. Students must register for GWST 5299 each semester in which they work on their thesis. Before commencing work on the thesis, the student must have a thesis proposal approved by a thesis committee consisting of a thesis advisor and two readers. Students should familiarize themselves with the specific procedural requirements of the IGWS thesis. Guidelines are available in the IGWS office.

MA Comprehensive Examination Track

This option allows students who do not wish to write a MA thesis to complete, as an alternative, two further courses and take a comprehensive exam.

Students not opting to do a thesis will, after the completion of all course requirements, take a comprehensive examination administered by an Examination Committee. An oral examination may be given following the written test.

After completing the required ten courses students must enroll in GWST 5289. The written and oral parts of the comprehensive exam are on three topics (one theoretical, one focused on methodological/ practical concerns, one based on the interests of the student). The comprehensive examination may be repeated once as per University regulations for graduate studies. A student who fails the comprehensive examination a second time would be dismissed from the degree program at the end of the semester in which the examination was retaken.

Graduate Diploma

Gender and Women's Studies (Graduate Diploma)

Course Requirements

Six courses (18 credit hours) are required for the diploma. Diploma students must take one required course (GWST 5100) and five GWST elective courses.

The diploma option allows students to pursue a disciplinary M.A. at AUC and at the same time acquire gender studies qualifications.

School of Sciences and Engineering

Department of Architecture

Department of Architecture

School of Sciences and Engineering

Acting Chair: E. Yazeed

Professors: S. Abdelmohsen, B. Kamel, M. Mostafa, A. Sherif

Associate Professors: T. El-Khouly, N. Mohareb, K. Tarabieh

Assistant Professors: M. Camponogara, A. Gkoliomyti, S. Goubran, I. Mashaly, A. Musmar

Professor of Practice: A. Abdel Kawi

The Department of Architecture offers ONE undergraduate degree and TWO minors: The Bachelor of Architecture, Architectural Design Minor and Design of Interior Spaces Minor. The Department of Architecture offers ONE graduate degree: Master of Science in Architecture (MSc).

The mission of the Department of Architecture is to provide a high quality architectural education within a liberal arts context to students from Egypt as well as from other countries. The aim is to produce generations of architects who will be leaders in their profession. The pursuit of excellence is central to the department's mission maintaining high standards of academic achievement, professional behavior and ethical conduct.

Students are educated to acquire an appreciation of their responsibilities to society and to prepare themselves for successful careers and leadership. The program provides an environment in which students develop their critical thinking capabilities, problem solving skills, creative potential, communication skills in English and proficiency in the tools of learning.

Bachelor of Architecture

Architecture (B.Arch.)

Bachelor of Architecture

Architecture is at a "cross roads" between human/cultural values and the technical capabilities of construction. Moreover, digital technology is rapidly growing, changing our ways of communication, expression, perception, thought and interaction.

The goal of the Bachelor of Architecture Program is to graduate architects who can lead the architectural profession in Egypt and the Middle-East into the digital age with an understanding of context as means of respecting local heritage. The program promotes the implementation of

the latest advances in Information and Communication Technology (ICT), stresses the rich local and historical context, and incorporates construction engineering and professional contents which respond to the needs of the industry. It also embraces the liberal arts approach to education through its multidisciplinary nature. Thus, the program will contribute positively to the well needed human development efforts in Egypt.

It is the aim to form an architect with a comprehensive vision, capable of integrating all the aspects dealing with the built environment and how it is planned, designed, used, furnished, landscaped, maintained, and appreciated by the society. This is emphasized through a curriculum that maintains a reasonable balance between utilization of the emerging digital design methods and pedagogies, meeting the professional demands, and creating contextual-humanistic and sustainable awareness.

The specific objective of the Bachelor of Architecture Program is to educate students in the fundamentals of the science and design of architecture with particular emphasis on developing skills of innovation, creativity and critical thinking in the design of the built environment. This is accomplished through research-based studio pedagogy, digital aided design, history, arts and the realization of users requirements within the constraints of the society. In the process, students learn to effectively work independently and collaboratively, develop analytical skills, and consider the impact of architectural solutions on both Egyptian society and the evolving global community.

Graduates of the Bachelor of Architecture Program will be well equipped to work in the international-level segment of the construction industry. They will become excellent candidates for the local and international architectural design firms. They can effectively work for construction contractors in aspects related to architecture and building integration. Graduates of the program will be qualified for professional licensing in architecture in Egypt and the USA. Furthermore, they will be prepared to pursue graduate studies in architecture and related fields in Egypt and abroad.

Declaration of the Architecture Major

Students accepted at AUC may either get admitted into their preferred major at the time of admission to the university (declare their major at the gate) or get admitted to the university as undeclared. Students who get admitted into a major will still have the opportunity to change their major later. Students must declare a major before completing 60 credit hours (before achieving a junior standing). Please check the eligibility criteria for declaring the Architecture major below.

Eligibility Criteria for Architecture Major Declaration at the Gate

The eligibility criteria for students who wish to apply to declare their major from the gate, with the declaration effective in the fall 2027 semester or the spring 2028 semester, can be accessed through the link below. Admission to the major is based on the program's student capacity.

To view the eligibility criteria, Click Here.

Eligibility Criteria for Architecture Major Declaration from Within

The eligibility criteria for undeclared students (or students switching majors) who wish to apply to declare their major, with the declaration effective in the fall 2027 semester or the spring 2028 semester, can be accessed through the link below. Admission to the major is based on the program's student capacity.

To view the eligibility criteria, Click Here.

Applications submitted by students of the Minor in Architectural Design will not be considered for declaration to the Major, except if there were available slots at their entry level cohort.

Students should consult the course listings with their faculty advisor on a regular basis to ensure that prerequisites for engineering core, concentration and elective courses are met. A model course plan for the major is provided in the Office of the Department of Architecture.

A total of 150 credits is required for the Bachelor of Architecture Program.

The Bachelor of Architecture Program is structured so that students would concentrate on an area of study in the last three semesters of their program. After completing design studio 4, students are required to choose one of three streams of courses as their area of study choice. Students must successfully pass an elective course and 1 design studio as well as a Theories and Dissertation course in their selected stream. These culminate to a senior project in the same stream. Students are not allowed to register for more than 16 credit hours at the semester of their Senior Project.

Core Curriculum (33 credits)

The remaining 7 credit hours required to satisfy the core are fulfilled by the concentration Science/lab (4 credits) and the Stream courses ARCH 4801 - Human and Environmental Studies Theory and Dissertation (3 cr.), ARCH 4802 - Tectonics and Computational Design Theory and Dissertation (3 cr.), or ARCH 4803 - Architecture and Urban Heritage Theory and Dissertation (3 cr.).

Engineering Core Requirements (18 credits)

- ARCH 3231 - Building Performance (3 cr.)
- ARCH 3422 - Real Estate Development, Project Finance and Cost Analysis (2 cr.)
- ARCH 4422 - Business Management for Architects (2 cr.)
- CENG 2115 - Engineering Mechanics and Structural Analysis for Architects (4 cr.)
- MACT 1121 - Calculus I (3 cr.)
- PHYS 1011 - Physics 1: Classical Mechanics, Sound and Heat (3 cr.)
- PHYS 1012 - General Physics Laboratory I (1 cr.)

Concentration Requirements (93 credits)

Visual Communication and Basic Design:

- ARCH 1511 - Engineering Drawing & Visual Representation for Architects (2 cr.)
- ARCH 1521 - Digital Representation Tools for Architects (2 cr.)
- ARCH 2512 - Foundations of 3-Dimensional Design (2 cr.)
- ARCH 2551 - Introduction to Architectural Design (3 cr.)

Architecture, Urban Planning and Interior Design:

- ARCH 2411 - Surveying for Architects (1 cr.)
- ARCH 2552 - Architectural Design Studio I (4 cr.)
- ARCH 3522 - Digital Design Studio and Workshop (3 cr.)
- ARCH 3553 - Architectural Design Studio II (4 cr.)
- ARCH 3554 - Architectural Design Studio III (4 cr.)
- ARCH 4532 - Urban Design and Landscape Architecture (4 cr.)
- ARCH 4541 - Introduction to Interior Design (3 cr.)
- ARCH 4561 - Architectural Design Studio IV: Contextual Analysis & Structural Tectonics (4 cr.)
- ARCH 4562 - Architectural Design Studio V: Comprehensive & Integrated Design (4 cr.)
- ARCH 4980 - Senior Project I (4 cr.)
- ARCH 4981 - Senior Project II (5 cr.)

History and Humanities:

- ARCH 2211 - History, Theory & Criticism of Architecture & Urbanism I (3 cr.)
- ARCH 2212 - History, Theory and Criticism of Architecture and Urbanism II (3 cr.)
- ARCH 2221 - Human Aspects in Architectural Design (3 cr.)

Construction Engineering and Professional Practice:

- ARCH 2231 - Environmental Control Systems and Sustainable Design (3 cr.)
- ARCH 3311 - Building Construction Methods II for Architects (3 cr.)
- ARCH 3321 - Building Service Systems and Building Systems Integration (3 cr.)
- ARCH 3331 - Construction Materials and Quality Control (4 cr.)
- ARCH 3950 - Internship in Construction Projects (0 cr.)
- ARCH 4312 - Design Development and Construction Documents (3 cr.)
- ARCH 4421 - Building Codes, Laws & Regulations (3 cr.)
- ARCH 4423 - Ethics and Professional Practice (3 cr.)
- ARCH 4951 - Internship in Technical Drawing and Design (1 cr.)
- CENG 2252 - Building Construction Methods I for Architects (3 cr.)
- CENG 3151 - Structural Design for Architects I (3 cr.)
- CENG 3152 - Structural Design for Architects II (3 cr.)
- CENG 4410 - Introduction to Construction Management and Cost Estimating (3 cr.)

Concentration Elective Streams (6 credits)

Students should follow one the following streams of courses according to their selected area of study. In addition, students must carry out their design projects in the Vertical Design Studio (B), Senior Design Studio and Senior Project in their selected area of study.

Building Design: Human and Environmental Studies Stream:

Students should successfully complete the following course:

- ARCH 4801 - Human and Environmental Studies Theory and Dissertation (3 cr.)

In addition, students should successfully complete one of the following courses:

- ARCH 2501 - Let's get Sustainable (3 cr.)
- ARCH 4932 - Sustainable Landscape architecture in Hot an Arid Environments (3 cr.)
- ARCH 4936 - Design of Interior Spaces (3 cr.)
- ARCH 4942 - Co-Design Campus as a Sensory Landscape (3 cr.)
- ARCH 4943 - Inclusive & Participatory Design in Architecture (3 cr.)
- ARCH 4971 - Selected Topics in Human and Environmental Studies of Architectural Engineering (3 cr.)

Tectonics and Computational Design Stream:

Students should successfully complete the following course:

- ARCH 4802 - Tectonics and Computational Design Theory and Dissertation (3 cr.)

In addition, students should successfully complete one of the following courses:

- ARCH 4937 - Seminar on Contemporary Architecture Discourse (3 cr.)
- ARCH 4939 - Advanced Architectural Computing (3 cr.)
- ARCH 4972 - Selected Topics in Tectonics and Computational Design of Architectural Engineering (3 cr.)
- PHIL 3010 - Philosophy and Art (3 cr.)

Architecture and Urban Heritage Design Stream:

Students should successfully complete the following course:

- ARCH 4803 - Architecture and Urban Heritage Theory and Dissertation (3 cr.)

In addition, students should successfully complete one of the following courses:

- ARCH 4931 - Introduction to Urban and Architecture Conservation (3 cr.)
- ARCH 4933 - Vernacular Architecture (3 cr.)
- ARCH 4934 - Cairo in the Curriculum, The Urban Laboratory: Mapping Cairo's Complexities (3 cr.)
- ARCH 4935 - Coptic Art and Architecture (3 cr.)
- ARCH 4938 - Urban Dialogues on Heritage and Space (3 cr.)
- ARCH 4973 - Selected Topics in Architecture and Urban Heritage Design (3 cr.)
- ARIC 3272 - Building the Sultanate: Architecture under the Ayyubids and Mamluks in Egypt and Syria (3 cr.)
- ARIC 5124 - Islamic Architecture in Spain and North Africa (3 cr.)
- EGPT 3201 - Art and Architecture of Ancient Egypt I (3 cr.)

Minors

Architectural Design Minor

The minor in Architectural Design provides students with an understanding of the underlying principles of architectural design. It serves students in all majors. It is especially useful for students interested in pursuing careers in the development, finance, construction and/or promotion of building related activities. It is also important for other students with social, cultural, and art backgrounds, who are interested in the respective aspects of the built environment. Construction engineering students will also benefit from the minor by becoming better qualified in the challenging activities of the construction industry.

Students from any discipline may apply for the Minor. A limited number will be accepted every semester. Students are accepted based on their GPA and on available quota in the department. The following requirements must be satisfied for joining and declaring the minor:

- Students with a minimum GPA of 3.0 are accepted based on available quota in the department.
- A minimum grade of "B" in the basic architectural design courses (ARCH 1511, ARCH 1521 and ARCH 2512) to declare the minor.

The minor is not open for Architecture students.

The Minor requires completion of 15 credit hours. These are:

Basic Architectural Design Requirement (6 credit hours)

All of the following courses:

- ARCH 1511 - Engineering Drawing & Visual Representation for Architects (2 cr.)
- ARCH 1521 - Digital Representation Tools for Architects (2 cr.)
- ARCH 2512 - Foundations of 3-Dimensional Design (2 cr.)

Background Humanities and Fine Arts Elective Requirement (3 credit hours)

One of the following courses:

- ARCH 2211 - History, Theory & Criticism of Architecture & Urbanism I (3 cr.)
- ARIC 2205 - The World of Islamic Architecture (3 cr.)
- EGPT 2030 - Introduction to Egyptian Architecture (3 cr.)

Main Architectural Design Requirement (6 credit hours)

The following courses:

- ARCH 2551 - Introduction to Architectural Design (3 cr.)
- ARCH 4541 - Introduction to Interior Design (3 cr.)

Notes

Construction Engineering students may not count the main architectural design courses (ARCH 4541) for both the Construction Engineering Major and the Architectural Design Minor.

Design of Interior Spaces Minor

The Department of Architecture in collaboration with the department of Arts offers a Minor in the Design of Interior Spaces. The Minor builds on two strong and successful programs available at AUC namely the Architectural Engineering and the Graphic Design programs. It serves students in all majors at AUC.

The minor provides students with the essential notions of the design of interior spaces which will enable them to deal with the basic tools for spatial interior design. It is especially useful for students interested in pursuing careers related to the different aspects of interior design and/or to pursue further studies in the area, or to continue graduate studies in the domain of interior design if they wish.

Admission

Students from any discipline may apply for the Minor. A limited number will be accepted every semester. Students are accepted based on their GPA and on available quota in the department. The following requirements must be satisfied for joining and declaring the Minor:

- Students with a minimum GPA of 3 are accepted based on available quota in the department.
- A minimum grade of "B" in each of the basic design courses to be able to declare the minor.
- Architecture and Arts major students can double count only 7 credit hours from the minor towards their respective majors.

The Minor requires completion of 19 credit hours. These are:

Basic Design Requirements (10 cr. hours)

Students should successfully complete the following courses:

- ARCH 1511 - Engineering Drawing & Visual Representation for Architects (2 cr.)
- ARCH 1521 - Digital Representation Tools for Architects (2 cr.)
- DSGN 2200 - Design Foundations (3 cr.)
- DSGN 2201 - Design Principles & Practices (3 cr.)

Main Interior Design Requirements (9 cr. hours)

Students should successfully complete the following courses

- ARCH 4541 - Introduction to Interior Design (3 cr.)
- ARCH 4936 - Design of Interior Spaces (3 cr.)
- DSGN 3205 - Retail Design (3 cr.)

Master of Science

Architecture (M.Sc.)

The Department of Architecture offers a Master of Science in Architecture (M.Sc.) degree. The program intends to provide opportunities for Egyptian and international students to pursue graduate studies at AUC.

The program focuses on finding and building connections between Architecture and other relevant disciplines at AUC. Exploring these connections is inherent in the essence of architecture as a multidisciplinary domain, always seeking new questions and finding alternate paths by bridging with other domains. The new program also capitalizes on the rich cultural and heritage background in Egypt. These can form strong basis for unique architectural investigations that are rooted in Egypt and the Middle East, and are of interest to many international scholars.

Graduates of the program will become excellent candidates for local and international graduate architectural studies and architectural design firms. They will be well equipped to pursue their PhD studies and conduct scientific research upon completing the MSc. Degree.

The program of study for each student is developed in close consultation with their faculty thesis advisor and may be shaped by various possible directions that reflect the available expertise and broader interdisciplinary opportunities at the university.

Program Objectives and Learning Outcomes

The program's primary goal is to provide students with an opportunity to contribute to advancing knowledge in architecture, which is seen as an interdisciplinary domain that intersects with other fields of expertise. Advanced studies aim to fulfill societal needs with consideration for human, ethical, cultural, and environmental issues and an appreciation of lifelong learning. The program's specific objectives are to enable graduates to:

1. Think critically about architectural paradigms and make an impact on the future of the architectural domain.
2. Develop a critical awareness of the issues inherent in the rich culture and heritage of Egypt and the Middle East with a critical eye on relevant contexts.
3. Reflect on "What's Next," pose relevant questions, and explore different directions, paths, or modes of thinking and frames of mind derived from a clear contextual understanding.
4. Conduct independent research that bridges architecture with other disciplines, fostering the development of a responsive built environment.
5. Work collaboratively in multidisciplinary or interdisciplinary teams locally and globally.

Upon completing the degree requirements for the MSc Program in Architecture, graduating students should be able to:

1. Develop a comprehensive understanding of architectural paradigms.
2. Identify relevant areas of research that advance architectural knowledge.
3. Connect between architecture and other disciplines to develop and address knowledge gaps about the built environment and architecture.
4. Apply quantitative and/or qualitative research methods relevant to architecture.
5. Communicate, orally and in writing, advanced theories, concepts, and ideas effectively.
6. Create scholarly and creative outputs relevant to architecture.

Admission

A candidate for the Master of Science in Architecture program must have a Bachelor of Architecture (B.Arch) or Bachelor of Science degree in Architecture (B.S./B.Sc. Arch). Students who have completed a Master of Architecture (MArch) or other professional degrees in architecture-related fields are eligible for admission to the program. Students with other equivalent architectural degrees, such as Bachelor of Science in Architectural Engineering (BSArchEng), and holders of Engineering and Bachelor of Science degrees in architecture-related fields equivalent to architecture, are encouraged to apply, provided they might be accepted provisionally.

Students deemed deficient in their undergraduate training but well-qualified in other aspects could be accepted provisionally and prescribed undergraduate prerequisites to compensate for the deficiency.

Admission is also subject to the general university requirements for graduate programs, including English language proficiency.

The following documents are required by the graduate faculty committee for admission to ensure an acceptable level of research capabilities:

- A research statement that clarifies the direction of the intended research in the program, and that explains the reasons for their interest in the program and in applying to graduate school.
- Applicants are encouraged to supply examples of past research outcomes (e.g., papers).

Courses (24 credit hours)

A minimum of eight courses (24 credit hours) is required. Courses are to be selected from the following categories:

I. Program Core Courses (12 credit hours)

- ARCH 5201 - Philosophy & Theory of Architecture (3 cr.)

- ARCH 5202 - Critical Thinking in Architectural Design (3 cr.)
- ARCH 5221 - Research Methods in Architecture & Urbanism (3 cr.)
- ENGR 5101 - Cross Talk: Implementation Science and Engineering (3 cr.)

II. Program Advanced Courses (12 credit hours)

Advanced Architecture Courses (6 credit hours)

Students, and based on the recommendation of the Thesis Supervisor and/or Graduate Program Director, should enroll twice in ARCH 5930 - Advanced Topics in Architecture (3 cr.), based on the following sub-domains: Humanities, Tectonics and Computational Design, Heritage and Urbanism, Sustainability, and other emerging topics in architecture.

Advanced Elective Courses in Other Disciplines (6 Credits)

Research Methods course in another discipline (3 credits)

According to the research focus, and based on the recommendation of the Thesis Supervisor and/or Graduate Program Director, students are directed to take one (1) 5000-level Research Methods course of the existing courses in another discipline at AUC according to the research area of study. Possible Research Methods Courses from other Disciplines (Other courses could be counted toward this category, provided the approval of the thesis supervisor and program director):

- ENGR 5202 - Computational Methods in Engineering (3 cr.)
- ENGR 5210 - Experimental Methods in Engineering (3 cr.)
- FINC 5230 - Statistical and numerical methods (3 cr.)
- JRMC 5204 - Quantitative Research Methods in Mass Communication (3 cr.)
- POLS 5204 - Advanced Political Science Methods (3 cr.)
- PPAD 5201 - Research Methods for Public Policy and Administration (3 cr.)
- PPAD 5211 - Qualitative Analysis for Policy and Administration (3 cr.)
- PPAD 5212 - Applied Quantitative Analysis (3 cr.)
- PSYC 5100 - Research Methods and Inferential Statistics for Psychology (3 cr.)
- PSYC 5220 - Applied Research Design and Statistical Analysis (3 cr.)
- SOC/ANTH 5203 - Ethnographic Fieldwork (3 cr.)
- SOC/ANTH 5204 - The Magic of Numbers: Reading and Working with Numbers (3 cr.)

General Elective from Other Disciplines (3 credits)

According to the research focus and based on the recommendation of the Thesis Supervisor and/or Graduate Program Director, students are directed by their research supervisor to take at

least one (1) 5000-level elective course from the existing courses in another discipline at AUC. The selected courses could be in Engineering, Physical Sciences, Social Sciences, Political Sciences, Humanities, Management, and other related graduate offerings. Those courses should not be from the student's undergraduate major (unless recommended by the advisor and approved by the graduate committee).

Thesis

Graduate thesis work is a required part of the Master of Science in Architecture degree program.

ENGR 5940 - Graduate Thesis Seminar (3 cr.)

Various research topics are discussed in ENGR 5940, which must be completed before registering for thesis credits.

ARCH 5980 - Research Guidance Thesis (3 cr.)

A student must register for ARCH 5980 after the completion of 15 credit hours. Students must register in ARCH 5980 for at least two semesters for a total of six credit hours. After that, ARCH 5980 is taken for one billable credit hour each semester until completion of the program requirements. Students will not be allowed to register for the second time in ARCH 5980 unless they have defended their thesis proposal.

Department of Biological, Chemical and Global Health Sciences

Professor Emeritus: A. Main, J. Ragai

Distinguished University Professor: H. Azzazy

Professors: A. Amleh, A. Bos, S. Chun, T. Madkour, W. Mamdouh (Chair), A. Moustafa, A. Ramadan (Associate Provost & Dean of Graduate Studies), M. Salama, H. Sewilam, T. Shoeib, S. Zada

Associate Professors: A. Abdellatif, A. Abd Elnaser, W. Fouad, E. El Sawy, M. El Sayed, H. Tallima

Assistant Professors: M. Bakr, S. Elmrayed, A. Kakarougkas, M. Nicolas (Associate Chair), F. Sakr

Bachelor of Science

Biology, with Specializations in Genomics and Biotechnology or Ecology and Conservation Biology (B.Sc.)

Bachelor of Science in Biology

The undergraduate program at AUC offers interested students a liberal education in biological sciences, leading to a Bachelor of Science degree. The program provides graduates with the broad background necessary in today's job market and prepares them for graduate and professional schools.

Students with a B.Sc. degree in biology are securing positions in the growing fields of industry and academia. The recent advances in biology have created critical new industries in genetic engineering, biomedicine, biotechnology, and pharmacology. Students with ambitions beyond the bachelor level are entering graduate and professional schools (medicine, dentistry, veterinary medicine).

Students wishing to receive a Bachelor of Science Degree in Biology will be required to take a total of 132 credits. Out of the 132 credits, 33 credits are allocated for Core Curriculum, 46 credits for Concentration Requirements, 22 credits for Electives, 25 credits for Collateral Requirements, and 6 credits for General Electives.

Students may choose Biology (B.Sc.) with an optional Specialization in Genomics and Biotechnology, or Ecology and Conservation Biology after completing 22 credits from the required respective courses.

Specialization in Genomics and Biotechnology

This specialization equips students with comprehensive knowledge and skills to pursue careers in genomic medicine, genome-based industries, biotechnology, and biomedical sciences, preparing them for opportunities in academia and industry.

Specialization in Ecology and Conservation Biology

This specialization offers students the opportunity to deeply explore natural habitats, resources, and the biodiversity of our planet, with a particular focus on Egypt's unique ecosystems.

The Biology (B.Sc.) program is accredited by the Applied and Natural Science Accreditation Commission of ABET under the commission's General Criteria.

Declaration of the Biology Major

Students accepted at AUC may either get admitted into their preferred major at the time of admission to the university (declare their major at the gate) or get admitted to the university as undeclared. Students who get admitted into a major will still have the opportunity to change their

major later. Students must declare a major before completing 60 credit hours (before achieving a junior standing). Please check the eligibility criteria for declaring the Biology major below.

Eligibility Criteria for Biology Major Declaration at the Gate

The eligibility criteria for students who wish to apply to declare their major from the gate, with the declaration effective in the fall 2027 semester or the spring 2028 semester, can be accessed through the link below. Admission to the major is based on the program's student capacity.

To view the eligibility criteria, Click Here.

Eligibility Criteria for Biology Major Declaration from Within

The eligibility criteria for undeclared students (or students switching majors) who wish to apply to declare their major, with the declaration effective in the fall 2027 semester or the spring 2028 semester, can be accessed through the link below. Admission to the major is based on the program's student capacity.

To view the eligibility criteria, Click Here.

For information about the combined programs policy, visit Undergraduate Academic Requirements & Regulations.

Core Curriculum (33 credits)

The remaining 7 credit hours required to satisfy the core are fulfilled by the concentration Science/lab (4 cr.) and the capstone projects BIOL 4980 and BIOL 4981.

Biology Requirements

Concentration Requirements (46 credits)

- BIOL 1011 - Introductory Biology I (3 cr. + 1 cr. lab)
- BIOL 1012 - Introductory Biology II (3 cr. + 1 cr. lab)
- BIOL 2090 - Quantitative Biology (3 cr. + 1 cr. lab)
- BIOL 2150 - Genetics (3 cr.)
- BIOL 2151 - Genetics Laboratory (1 cr.)
- BIOL 2160 - Introduction to Bioethics (3 cr.)
- BIOL 2230 - Molecular and Cell Biology (3 cr.)
- BIOL 2231 - Molecular and Cell Biology Laboratory (1 cr.)
- BIOL 2340 - General Botany (3 cr. + 1 cr. lab)

- BIOL 3130 - Molecular Evolution and Population Genetics (3 cr. + 1 cr. lab)
- BIOL 3310 - Microbiology (3 cr. + 1 cr. lab)
- BIOL 3326 - Vertebrate Anatomy and Physiology (3 cr.)
- BIOL 3327 - Vertebrate Anatomy and Physiology Laboratory (1 cr.)
- BIOL 3510 - Ecology and Conservation Biology (3 cr. + 1 cr lab)
- BIOL 4980 - Senior Research Thesis (1 cr.)
- BIOL 4981 - Seminar in Biology (2 cr.)

Collateral Requirements (25 credits)

- CHEM 1005 - General Chemistry I (3 cr.)
- CHEM 1006 - General Chemistry II (3 cr.)
- CHEM 1015 - General Chemistry I-Laboratory (1 cr.)
- CHEM 1016 - General Chemistry II-Laboratory (1 cr.)
- CHEM 2003 - Organic Chemistry I (3 cr.)
- CHEM 2013 - Organic Chemistry I Laboratory (1 cr.)
- CHEM 3015 - Biochemistry (3 cr.)
- CSCE 1001 - Fundamentals of Computing I (3 cr.)
  or
- DSCI 1411 - Fundamentals of Data Science I (3 cr.)
- MACT 1121 - Calculus I (3 cr.)
- PHYS 1011 - Physics 1: Classical Mechanics, Sound and Heat (3 cr.)
- PHYS 1012 - General Physics Laboratory I (1 cr.)

Electives (22 credits)

For the B.Sc. in Biology, students must take 22 additional credits from the elective courses listed below.

Specialization in Genomics and Biotechnology

For the B.Sc. in Biology with Specialization in Genomics and Biotechnology, students must complete the following courses.

The remaining credits will be selected from the list of electives.

- BIOL 3600 - Introduction to Bioinformatics (3 cr.)
- BIOL 3710 - Introduction to Biotechnology (3 cr.)
- BIOL 3750 - Introduction to Genomics (3 cr.)
- BIOL 4150 - Molecular Biology of the Gene (3 cr. + 1 cr. lab)
  In addition to two of the following courses:

- BIOL 3601 - Bioinformatics Tools and Techniques (3 cr.)
- BIOL 4170 - Molecular Biotechnology (3 cr. + 1 cr. lab)
- BIOL 4230 - Cellular and Molecular Immunology (3 cr.)
- BIOL 4330 - Tumor Biology (3 cr. + 1 cr. lab)
- BIOL 4930 - Selected Topics in Biology (1-4 cr.) (The topics must pertain to genomics or biotechnology.)

Specialization in Ecology and Conservation Biology

For the B.Sc. in Biology with Specialization in Ecology and Conservation Biology, students must complete the following courses.

The remaining credits will be selected from the list of electives.

- BIOL 3540 - Sustainability and Environmental protection (3 cr.)
- BIOL 4540 - Marine Ecology and Coral Reef Biology (3 cr.)
- BIOL 4541 - Desert Ecology (3 cr. + 1 cr. lab)

In addition to three of the following courses:

- BIOL 3341 - Animal Behavior (3 cr. + 1 cr. lab)
- BIOL 3600 - Introduction to Bioinformatics (3 cr.)
- BIOL 3710 - Introduction to Biotechnology (3 cr.)
- BIOL 3910 - Guided Studies in Environmental Sciences (3 cr.) (The topics must pertain to ecology and conservation biology.)
- BIOL 4360 - Human Anatomy and Physiology (3 cr.)
- BIOL 4930 - Selected Topics in Biology (1-4 cr.) (The topics must pertain to ecology and conservation biology.)

Elective Courses

- BIOL 3320 - Physical Foundations of Biological Systems (3 cr.)
- BIOL 3321 - Physical Foundations of Biological Systems Laboratory (1 cr.)
- BIOL 3341 - Animal Behavior (3 cr. + 1 cr. lab)
- BIOL 3370 - Developmental Biology (3 cr. + 1 cr. lab)
- BIOL 3540 - Sustainability and Environmental protection (3 cr.)
- BIOL 3600 - Introduction to Bioinformatics (3 cr.)
- BIOL 3601 - Bioinformatics Tools and Techniques (3 cr.)
- BIOL 3710 - Introduction to Biotechnology (3 cr.)
- BIOL 3750 - Introduction to Genomics (3 cr.)
- BIOL 3910 - Guided Studies in Environmental Sciences (3 cr.)
- BIOL 4098 - Selected Topics in Neuroscience (3 cr.)

- BIOL 4150 - Molecular Biology of the Gene (3 cr. + 1 cr. lab)
- BIOL 4160 - Methods in Behavioral Neuroscience (3 cr.)
- BIOL 4170 - Molecular Biotechnology (3 cr. + 1 cr. lab)
- BIOL 4230 - Cellular and Molecular Immunology (3 cr.)
- BIOL 4330 - Tumor Biology (3 cr. + 1 cr. lab)
- BIOL 4360 - Human Anatomy and Physiology (3 cr.)
- BIOL 4361 - Human Anatomy and Physiology Laboratory (1 cr.)
- BIOL 4540 - Marine Ecology and Coral Reef Biology (3 cr.)
- BIOL 4541 - Desert Ecology (3 cr. + 1 cr. lab)
- BIOL 4930 - Selected Topics in Biology (1-4 cr.)
- BIOL 4950 - Practical Internship (1 cr.)

General Electives (6 credits)

Chemistry, with Specializations in Petrochemical Industry and Food Chemistry (B.S.)

The chemistry program covers the five main branches of chemistry, namely organic, biochemistry, inorganic, physical, and analytical. The program is further enhanced by a major entrepreneurship component to educate its graduates on ways and means of developing their startups and new ventures that are based on scientific innovations. In addition, students may specialize in petrochemical industries or food chemistry. In all cases theoretical and applied knowledge are both reinforced and supplemented by a diverse selection of experimental work, a necessary facet of chemistry.

Bachelor of Science

The objective of the Bachelor of Science in chemistry is to train students in both theory and practice of the major branches of chemistry. It prepares students for careers in diverse fields such as industries (chemical, food and beverages, pharmaceuticals, metal and metal finishing, cement, petrochemicals, textiles, paints); environmental monitoring and protection; quality control and quality assurance; marketing and sales for chemicals and specialty chemicals; education; academic and industrial research. The Bachelor of Science in chemistry also prepares students for medical school or a life as a chemistry entrepreneur.

The Bachelor of Science in Chemistry degree is accredited by the Canadian Society for Chemistry (CSC).

The Chemistry (B.S.) program has an equivalence from the Supreme Council of Universities in Egypt.

Declaration of the Chemistry Major

Students accepted at AUC may either get admitted into their preferred major at the time of admission to the university (declare their major at the gate) or get admitted to the university as undeclared. Students who get admitted into a major will still have the opportunity to change their major later. Students must declare a major before completing 60 credit hours (before achieving a junior standing). Please check the eligibility criteria for declaring the Chemistry major below.

Eligibility Criteria for Chemistry Major Declaration at the Gate

The eligibility criteria for students who wish to apply to declare their major from the gate, with the declaration effective in the fall 2027 semester or the spring 2028 semester, can be accessed through the link below. Admission to the major is based on the program's student capacity.

To view the eligibility criteria, Click Here.

Eligibility Criteria for Chemistry Major Declaration from Within

The eligibility criteria for undeclared students (or students switching majors) who wish to apply to declare their major, with the declaration effective in the fall 2027 semester or the spring 2028 semester, can be accessed through the link below. Admission to the major is based on the program's student capacity.

To view the eligibility criteria, Click Here.

A total of 130 credits is required for the bachelor's degree in chemistry.

Core Curriculum (33 credits)

The remaining 7 credit hours required to satisfy the Core are fulfilled by the concentration Science/lab (4 credit hours) and the capstone project coursesCHEM 4980 and CHEM 4981 (total 3 credit hours).

Concentration Requirements (62 credits)

- CHEM 1005 - General Chemistry I (3 cr.)
- CHEM 1006 - General Chemistry II (3 cr.)
- CHEM 1015 - General Chemistry I-Laboratory (1 cr.)
- CHEM 1016 - General Chemistry II-Laboratory (1 cr.)
- CHEM 2003 - Organic Chemistry I (3 cr.)
- CHEM 2006 - Analytical Chemistry I (2 cr.)

- CHEM 2013 - Organic Chemistry I Laboratory (1 cr.)
- CHEM 2016 - Volumetric and Gravimetric Analysis (2 cr.)
- CHEM 3003 - Thermodynamics (3 cr.)
- CHEM 3004 - Physical Chemistry I (3 cr.)
- CHEM 3005 - Principles of Chemical Modeling (3 cr.)
- CHEM 3006 - Organic Chemistry II (3 cr.)
- CHEM 3009 - Inorganic Chemistry I (3 cr.)
- CHEM 3011 - Analytical Chemistry II (3 cr.)
- CHEM 3012 - Analytical Chemistry II Laboratory (2 cr.)
- CHEM 3013 - Thermodynamics Laboratory (1 cr.)
- CHEM 3014 - Physical Chemistry I Laboratory (1 cr.)
- CHEM 3015 - Biochemistry (3 cr.)
- CHEM 3016 - Organic Chemistry II Laboratory (1 cr.)
- CHEM 3018 - Inorganic Chemistry Laboratory (1 cr.)
- CHEM 3940 - Seminar in Science and Technology (1 cr.)
- CHEM 4003 - Physical Chemistry II (3 cr.)
- CHEM 4004 - Physical Chemistry III (3 cr.)
- CHEM 4006 - Organic Chemistry III (3 cr.)
- CHEM 4008 - Inorganic Chemistry II (3 cr.)
- CHEM 4013 - Physical Chemistry II Laboratory (1 cr.)
- CHEM 4016 - Organic Syntheses (2 cr.)
- CHEM 4980 - Senior Thesis I (1 cr.)
- CHEM 4981 - Senior Thesis II (2 cr.)

Collateral Requirements (23 credits)

In addition to courses offered by other science departments, chemistry majors are also required to complete two business and entrepreneurship courses.

- BADM 2001 - Introduction to Business (3 cr.)
- CSCE 1001 - Fundamentals of Computing I (3 cr.)
- ENTR 3102 - Entrepreneurship and Innovation (3 cr.)
- MACT 1121 - Calculus I (3 cr.)
- MACT 1122 - Calculus II (3 cr.)
- PHYS 1011 - Physics 1: Classical Mechanics, Sound and Heat (3 cr.)
- PHYS 1012 - General Physics Laboratory I (1 cr.)
- PHYS 1021 - Physics 2: Electricity and Magnetism (3 cr.)
- PHYS 1022 - General Physics Laboratory II (1 cr.)

Electives (12 credits)

For the BS in chemistry: Students must take at least 6 credits from Groups A, B, and C or any academic programs within SSE at the 3000 or 4000 level. A maximum of 3 credits can be taken as general electives. Students must take 3 credits from Group D.

For the BS in chemistry with a specialization in the petrochemical industry: Students must take the 9 credits of Group A plus 3 cr. from Group D

For the BS in chemistry with a specialization in food chemistry: Students must take the 9 credits of Group B plus 3 cr. from Group D

Group A: Specialization in Petrochemical Industry (9 credits)

- CHEM 3522 - Production Basics for Chemical Industries (3 cr.)
- CHEM 3523 - Chemistry of Petrochemical Processes (3 cr.)
- CHEM 4524 - Polymer Chemistry and Technology (3 cr.)

Group B: Specialization in Food Chemistry (9 credits)

- CHEM 2020 - Introduction to Food Science and Technology (3 cr.)
- CHEM 3020 - Food Chemistry (3 cr.)
- CHEM 4007 - Food Processing and Preservation (3 cr.)

Group C: Other

- CHEM 3002 - Archaeological Chemistry I (3 cr.)
- CHEM 3910 - Guided Studies in Environmental Sciences (3 cr.)
- CHEM 4910 - Independent Study (1-3 cr.)
- CHEM 4930 - Selected Topics in Chemistry (1-3 cr.)

Group D: Industrial Exposure

- CHEM 4005 - Industrial Chemistry (3 cr.)
- CHEM 4900 - Chemistry Practical Internship (3 cr.)

Minors

Archaeological Chemistry Minor

This minor in archaeological chemistry provides students with the necessary knowledge for the elucidation of some archaeological problems. The minor is of particular value to Arts or Egyptology students.

Requirements

Total credits: 17.

All of the following courses (14 cr.):

- CHEM 1005 - General Chemistry I (3 cr.)
- CHEM 1006 - General Chemistry II (3 cr.)
- CHEM 1015 - General Chemistry I-Laboratory (1 cr.)
- CHEM 1016 - General Chemistry II-Laboratory (1 cr.)
- CHEM 3002 - Archaeological Chemistry I (3 cr.)

And one of the following courses (3 cr.):

- CHEM 1003 - Chemistry and Society (3 cr.)
- CHEM 2004 - Chemistry, Art and Archaeology (3 cr.)

Bioinformatics Minor

The program offers a minor in Bioinformatics for students interested in an academic or industrial career in computational biology for analysis of molecular data in health, diseases, environment and/or food research and industry.

To be awarded a minor in Bioinformatics, a student must complete a minimum 18 credits.

One of the following introductory biology courses (3-4 credits):

- BIOL 1010 - Introduction to Life Sciences (3 cr. + 1 cr. lab)
- BIOL 1011 - Introductory Biology I (3 cr. + 1 cr. lab)
- BIOL 1150 - Genetics for Everyone (3 cr.)

One of the following introductory computing courses (3 credits):

- CSCE 1001 - Fundamentals of Computing I (3 cr.)
- DSCI 1411 - Fundamentals of Data Science I (3 cr.)

Bioinformatics Specialization (9 credits):

- BIOL 3600 - Introduction to Bioinformatics (3 cr.)
- BIOL 3601 - Bioinformatics Tools and Techniques (3 cr.)
- BIOL 4690 - Bioinformatics Capstone Seminar I (1 cr.)
- BIOL 4691 - Bioinformatics Capstone Seminar II (2 cr.)

One of the following electives (2-3 credits):

- BIOL 2090 - Quantitative Biology (3 cr. + 1 cr. lab)
- BIOL 2150 - Genetics (3 cr.)
- BIOL 3130 - Molecular Evolution and Population Genetics (3 cr. + 1 cr. lab)
- BIOL 4930 - Selected Topics in Biology (1-4 cr.)
- CSCE 1101 - Fundamentals of Computing II (3 cr.)
- CSCE 2202 - Analysis and Design of Algorithms (3 cr.)
- CSCE 3601 - Fundamentals of Artificial Intelligence (3 cr.)
- CSCE 4501 - Big Data Systems (3 cr.)
- DSCI 2410 - Fundamentals of Data Science II (3 cr.)
- DSCI 2411 - Data Visualization (3 cr.)
- DSCI 3413 - Biostatistics (3 cr.)
- DSCI 3415 - Fundamentals of Machine Learning (3 cr.)
- DSCI 4411 - Fundamentals of Data Mining (3 cr.)
- DSCI 4412 - Introduction to Big Data Technologies (3 cr.)
- DSCI 4413 - Analysis of Categorical Data (3 cr.)
- DSCI 4415 - Advanced Machine Learning (3 cr.)

Notes

Students are reminded to work out a feasible study plan for the required courses in this minor.

The elective course must be from outside the student's declared major.

Biology Minor

The program also offers a minor in Biology to supplement the education of students in related disciplines including but not limited to biometry, bioinformatics, biochemistry, biophysics, psychology, and anthropology.

Twenty credits are required for a minor in Biology as following:

- Eight credit from two 1000 level courses:

BIOL 1011 - Introductory Biology I (3 cr. + 1 cr. lab) or BIOL 1010 - Introduction to Life Sciences (3 cr. + 1 cr. lab) and BIOL 1012 - Introductory Biology II (3 cr. + 1 cr. lab)

- Twelve credit from 2000, 3000, or 4000 level BIOL courses.

Biomedical Sciences Minor

The minor in Biomedical Sciences provides students with a useful complement to majors in sciences, engineering, business and humanities at AUC. The program offers directed study in human and animal systems to broaden the background of students wishing to pursue professional careers in biomedical industry, biotechnology, bioinformatics, medicine, and other related areas.

This program fulfils the sciences requirements for the Medical College Admission Test (MCAT®), and the Dental College Admission test (DAT®). Students who wish to apply for medical, dental or other related biomedical graduate programs must complete all other course requirements for admission, as well as other application requirements and extracurricular activities.

Program of Study

The program requires completion of a minimum of 15 credits in biomedical sciences courses. Biology majors are not eligible for this minor.

Admission Requirements

- BIOL 1011 - Introductory Biology I (3 cr. + 1 cr. lab)
- CHEM 1006 - General Chemistry II (3 cr.) + CHEM 1016 - General Chemistry II-Laboratory (1 cr.)
- PHYS 1021 - Physics 2: Electricity and Magnetism (3 cr.) + PHYS 1022 - General Physics Laboratory II (1 cr.)

Required Courses

- BIOL 2230 - Molecular and Cell Biology (3 cr.)
- CHEM 3015 - Biochemistry (3 cr.)

Elective Courses

A minimum of TWO courses from the following:

- BIOL 1098 - Fundamentals of Neurosciences (3 + 1 cr.)
- BIOL 3310 - Microbiology (3 cr. + 1 cr. lab)

- BIOL 3326 - Vertebrate Anatomy and Physiology (3 cr.)
- BIOL 3370 - Developmental Biology (3 cr. + 1 cr. lab)
- BIOL 3600 - Introduction to Bioinformatics (3 cr.)
- BIOL 4150 - Molecular Biology of the Gene (3 cr. + 1 cr. lab)
- BIOL 4230 - Cellular and Molecular Immunology (3 cr.)
- BIOL 4330 - Tumor Biology (3 cr. + 1 cr. lab)
- BIOL 4910 - Guided Studies in Biology (1-4 cr.)
- BIOL 4930 - Selected Topics in Biology (1-4 cr.)

Chemistry Minor

The minor in chemistry provides students with a workable knowledge of the basic principles of chemistry and some of their applications. Students may choose to concentrate on one of the main areas in chemistry.

The minor in chemistry is comprised of (16-18 credits).

- CHEM 1005 - General Chemistry I (3 cr.)
- CHEM 1006 - General Chemistry II (3 cr.)
- CHEM 1015 - General Chemistry I-Laboratory (1 cr.)
- CHEM 1016 - General Chemistry II-Laboratory (1 cr.)

Additional Requirements

- 8-10 credits of higher level courses in chemistry to be chosen in consultation with a faculty advisor.

Environmental Science Minor

The minor in Environmental Science is an interdisciplinary program. The curriculum is flexible to allow students of all majors to enrol in the minor. The elective courses are designed to satisfy an individual's field of interest. In the course of their studies, students will be subjected to significant environmental issues and challenges at the national, regional and international levels. The minor will enhance the students' career marketability. Students are required to choose an advisor for their minor from either the Department of Biology or the Department of Chemistry.

Requirements (15-17 credits):

One of the following Biology courses:

- BIOL 1040 - Essentials of Environmental Biology (3 cr.)

- BIOL 3540 - Sustainability and Environmental protection (3 cr.)

One of the following Chemistry courses:

- CHEM 1004 - Man and the Environment (3 cr.)
- CHEM 3011 - Analytical Chemistry II (3 cr.)

Electives (9-10 credits)

- BIOL 3910 - Guided Studies in Environmental Sciences (3 cr.)
- CENG 4551 - Environmental and Sanitary Engineering (3 cr.)
- CHEM 3910 - Guided Studies in Environmental Sciences (3 cr.)
- ECON 3054 - Environmental and Natural Resource Economics (3 cr.)
- HIST 4107 - The Environment in World History (3 cr.)
- POLS 4542 - Environmental Politics (3 cr.)

Notes:

Students majoring in Biology or Chemistry cannot take the introductory courses BIOL 1040 and CHEM 1004 designed for non-science majors.

BIOL 3910 / CHEM 3910 can only be taken as final course to fulfil the minor requirements.

Master of Global Public Health (MPH)

Global Public Health (MPH) with concentrations in Precision Public Health and Global Public Health Policy and Management

The Master of Global Public Health (MPH) program provides postgraduate education to prepare students for careers in several essential and innovative interdisciplinary areas of public health. Grounded in biomedical, engineering, data, social, behavioral, policy, and regulatory perspectives, the program prepares practitioners to address public health challenges in regional and global contexts. Through its implementation science and applied public health perspective, the program emphasizes innovation, implementation, education, and service, preparing graduates to contribute to disease identification, mitigation, and prevention, as well as to health promotion and improved population health outcomes.

Program Goals and Objectives

The mission of the MPH is to prepare graduates to advance the public's health through education, health promotion, evidence-informed practice, and the improvement of health outcomes for populations and communities in regional and global contexts. The program fosters critical

thinking, ethical decision-making, leadership, interdisciplinary collaboration, and applied public health practice.

The objectives of the MPH program are to:

1. Provide students with competency-based training in the core areas of public health, including social and behavioral sciences, biostatistics, epidemiology, environmental health, and health policy and management.
2. Prepare students to analyze public health evidence and data to inform interventions, programs, policies, and practice.
3. Develop students' ability to collaborate with communities, public health professionals, health care providers, and other stakeholders on public health initiatives.
4. Prepare students to manage public health projects by assessing, planning, implementing, evaluating, and ensuring sustainability.
5. Strengthen students' leadership, communication, ethical reasoning, and commitment to health equity in diverse regional and global settings.

Learning Outcomes

Upon completion of the MPH, graduates will be prepared to:

1. Understand the relationship between environmental, social, and cultural factors as well as biological determinants, and community health; discuss solutions for health problems through an understanding of the holistic precision health concept.
2. Critically analyze research evidence and relevant data (identify and apply appropriate statistical methods) to determine health care trends, best practices, and develop appropriate public health interventions.
3. Manage public health projects through assessment, planning, implementation, evaluation, and sustainability to realize best practices.
4. Communicate effectively and efficiently to leverage public health awareness.
5. Assess how moral and ethical values influence decision-making, policy development, and health outcomes in diverse population conditions.
6. Examine the application of community-based participatory research (CBPR) principles in public health programs and projects in various settings.

Degree Requirements

Admission

A bachelor's degree from an accredited institution, with a minimum GPA of 3.0 out of 4.0 or equivalent, is required for admission into the MPH program. Applicants may come from backgrounds in the sciences, medicine, dentistry, veterinary medicine, pharmacy, nursing,

engineering, social and behavioral sciences, policy, management, business, or related fields. Admission is also subject to the general university requirements for graduate programs. Applicants whose records indicate promising ability but who lack adequate preparation in relevant areas may be admitted with the requirement that they complete additional probationary courses.

The MPH Requirements

Depending on the specific track, a minimum of 42 credit hours is required for the MPH, as defined by CePH and ASPPH. This consists of 15 credit hours of core courses, 9 credits of research seminar and thesis research, and an additional 18 credit hours of coursework in a given track. With Program Director approval, up to 6 credit hours (two graduate courses) from the alternate concentration may be applied toward the concentration's 18-credit elective requirement; courses may be at the 5000 or 6000 level.

Applied Practice Experience (APE) & Integrative Learning Experience (ILE): The program embeds the APE within the thesis sequence and assesses the ILE across the Graduate Thesis Seminar and later thesis work (see "Thesis (9 Credit hours)" for details).

Advisors, Advisory Committee, and Study Plan for MPH

During SCI 5940 - Graduate Thesis Seminar (3 cr.) for MPH students, this is the second full semester, and the student will have identified a track and area of interest. In discussion with faculty and the Program Director, a primary Research Advisor will be identified. A preliminary research proposal draft will be developed during SCI 5940 - Graduate Thesis Seminar (3 cr.). The student, together with the Research Advisor, will develop a study and research plan for the remainder of the year. This must be done promptly to schedule appropriate coursework and support student success.

Concentrations

The MPH program offers two concentrations that allow students to develop specialized expertise while maintaining a shared foundation in core public health knowledge, applied research, implementation, ethics, communication, and population health.

Precision Public Health prepares students to apply biological, environmental, behavioral, and data-informed approaches to identify health risks, guide prevention strategies, and support targeted public health interventions.

Global Public Health Policy and Management prepares students to analyze, design, implement, manage, and evaluate public health policies, programs, and systems in regional and global contexts.

Core Courses (15 Credit hours)

- GHHE 5110 - Biostatistics (3 cr.)
- GHHE 5120 - Introduction to Epidemiology (3 cr.)
- GHHE 5130 - Environmental & Occupational Health (3 cr.)
- GHHE 5170 - Health Program Planning and Evaluation (3 cr.)
- GHHE 5180 - Experimental Design and Research Methods (3 cr.)

Precision Public Health Electives (18 Credit hours)

This concentration offers a transformative approach to modern public health, equipping students to tackle the intricate connections between environmental exposures such as pollution, climate change, and urbanization and individual health profiles. By merging environmental sciences with cutting-edge technologies in genomics, data analytics, and biomarker discovery, students learn to design targeted, precision-driven health interventions. This program emphasizes the science behind health outcomes and the mission of advancing health equity, environmental justice, and resilient communities. Graduates emerge prepared to lead innovative public health initiatives that respond to the unique health challenges of today's interconnected world.

- BIOT 5206 - Fundamentals of Bioinformatics (3 cr.)
- GHHE 5250 - Epidemiology of Malnutrition, Metabolic Disorders, Obesity and Diabetes (3 cr.)
- GHHE 5280 - Systematic Review and Meta-Analysis (3 cr.)
- GHHE 5290 - Health Analytics and Informatics (3 cr.)
- GHHE 5330 - Environmental Assessment of Risks of Toxics on Health (EARTH) Lab (3 cr.)
- GHHE 5410 - Biomarkers: Exposure, Susceptibility, Effects and Efficacy (3 cr.)
- GHHE 5420 - Pharmacogenomics and Personalized Medicine (3 cr.)
- GHHE 5540 - Genetics and Molecular Basis of Disease (3 cr.)
- GHHE 5930 - Selected Topics in Public Health (3 cr.)
- GHHE 6211 - Advanced Epidemiology (3 cr.)
- GHHE 6930 - Current Topics in Public Health (3 cr.)

Global Public Health Policy and Management Electives (18 Credit hours)

This concentration prepares students to shape and manage local, national, and global health policies. With a focus on health systems, leadership, and governance, students will develop policy analysis, strategic planning, and program management skills. Coursework emphasizes the importance of health equity and effective policy-making in improving population health outcomes. Graduates can lead public health organizations, manage large-scale health programs,

and advocate for impactful health reforms, positioning themselves as key players in global public health policy and management.

- ECON 5217 - Health Economics in Developing Countries (3 cr.)
- GHHE 5190 - Diseases and Social Perception (3 cr.)
- GHHE 5250 - Epidemiology of Malnutrition, Metabolic Disorders, Obesity and Diabetes (3 cr.)
- GHHE 5280 - Systematic Review and Meta-Analysis (3 cr.)
- GHHE 5290 - Health Analytics and Informatics (3 cr.)
- GHHE 5930 - Selected Topics in Public Health (3 cr.)
- GHHE 6120 - Leadership and Professional Development for Public Health Professionals (3 cr.)
- GHHE 6211 - Advanced Epidemiology (3 cr.)
- GHHE 6930 - Current Topics in Public Health (3 cr.)
- PPAD 5133 - Global Health Issues and Policies (3 cr.)
- PPAD 5202 - Public Policy Theory & Practice (3 cr.)

Thesis (9 Credit hours)

Graduate thesis work is a required part of the Master of Public Health degree program.

SCI 5940 - Graduate Thesis Seminar (3 cr.)

Various research topics are discussed in SCI 5940, which must be completed before registering for thesis credits.

GHHE 5980 - Research Guidance Thesis (3 cr.)

A student must register for GHHE 5980 after the completion of 15 credit hours. Students must register in GHHE 5980 for at least two semesters for a total of six credit hours. After that, GHHE 5980 is taken for one billable credit hour each semester until completion of the program requirements. Students will not be allowed to register for the second time in GHHE 5980 unless they have defended their thesis proposal.

Note: The program embeds the Applied Practice Experience (APE) within GHHE 5980: the first three credit hours focus on supervised practice activities culminating in at least two verified work products. The Integrative Learning Experience (ILE) is assessed across SCI 5940, where students develop the thesis proposal and a two-page executive brief, and in the second enrollment in GHHE 5980, where students submit the applied written product with a brief competency map.

Master of Science

Biotechnology (M.Sc.)

The Master of Science program in biotechnology provides postgraduate education to prepare students for a career in biotechnology through the construction of a firm foundation in the science and engineering of biotechnology and to provide an introduction to bioentrepreneurship.

A minimum of 33 credit hours is required for the Master of Science degree. This consists of 24 credits hours of courses, 6 credit hours of thesis work, and 3 credit hours of seminar.

Program Educational Objectives

Graduates of the biotechnology program are qualified to achieve one or more of the following objectives within a few years after graduation.

- Professional in relevant biotechnology disciplines and related fields, such as research, development, quality control, or regulatory affairs.
- Effective team member in multidisciplinary teams on complex biotechnology projects, contributing to successful outcomes.
- Leader in biotechnology or related fields, demonstrating strong skills in leadership, ethics, communication, and business.
- Pursuer of at least one of the following: advanced degrees, professional certifications, or specialized training in biotechnology or related fields.
- Active participant in professional activities, such as attending conferences, workshops, or webinars, to stay updated on emerging trends and technologies in biotechnology.

Admission

A bachelor's degree in sciences or engineering, with a minimum GPA of 3.0 out of 4.0, is required for admission into the biotechnology master's program. Students must demonstrate foundational knowledge of genetics, biochemistry, and molecular/cell biology by having completed relevant undergraduate courses. Students that do not fulfill these requirements must take an entrance exam to demonstrate their basic knowledge and/or complete undergraduate prerequisite courses prior to starting the program.

Courses (24 credits)

The program of study is planned with the faculty advisor, and should include 15 credit hours of core courses and 9 credit hours of elective courses.

Biotechnology Core Courses (15 credit hours)

- BIOT 5202 - Cell and Molecular Biology (3 cr.)
- BIOT 5203 - Biotechnology (3 cr.)
- BIOT 5204 - Experimental Biotechnology (3 cr.)
- BIOT 5205 - Basics of Bioentrepreneurship (3 cr.)
- BIOT 5206 - Fundamentals of Bioinformatics (3 cr.)

Biotechnology Electives Courses (9 credit hours)

To be choosen from the following list of courses:

- BIOT 5201 - Biochemistry (3 cr.)
- BIOT 5207 - Molecular Diagnosis (3 cr.)
- BIOT 5208 - Molecular Genetics (3 cr.)
- BIOT 5210 - Microbial Biotechnology (3 cr.)
- BIOT 5211 - Bioengineering (3 cr.)
- BIOT 5930 - Selected Topics in Biotechnology (3 cr.)
- BIOT 6204 - Model Systems in Cancer Research (2 cr. + 1 cr. lab)
- BIOT 6205 - Animal Models in Biomedical Research (3 cr.)
- BIOT 6206 - Computational Genomics and Transcriptomics (3 cr.)
- BIOT 6207 - Systems and Computational Biology (3 cr.)
- BIOT 6930 - Current Topics in Biotechnology (3 cr.)
- GHHE 5110 - Biostatistics (3 cr.)

Notes

Students may also take a maximum of two courses 4000-level or above offered by other programs in sciences or engineering, or other related areas subject to their advisor's approval.

Thesis (9 credit hours)

Graduate thesis work is a required part of the Master of Science in Biotechnology degree program.

SCI 5940 - Graduate Thesis Seminar (3 cr.)

Various research topics are discussed in SCI 5940, which must be completed before registering for thesis credits.

BIOT 5980 - Research Guidance Thesis (3 cr.)

A student must register for BIOT 5980 after the completion of 15 credit hours. Students must register in BIOT 5980 for at least two semesters for a total of six credit hours. After that, BIOT 5980 is taken for one billable credit hour each semester until completion of the program requirements. Students will not be allowed to register for the second time in BIOT 5980 unless they have defended their thesis proposal.

Chemistry (M.Sc.)

Master of Science in Chemistry

The M.Sc. in Chemistry prepares students for a career in chemistry or related fields through the development of a firm foundation in the fundamental science and applications of chemistry.

A minimum of 33 credit hours is required for the Master of Science degree. This consists of 24 credit hours of courses and at least 9 credit hours of thesis work.

Admission

A Bachelor's degree in Chemistry or a related discipline with a minimum GPA of 3.0 out of 4.0, is required for admission into the Chemistry Master of Science program. Admission is also subject to the general university requirements for the graduate program. For those students whose grade records indicate promising ability, but who otherwise did not have adequate preparation in chemistry, admission may be granted under the requirement that remedial courses will be taken.

Courses (24 credits)

The program of study is planned with the faculty advisor and should include 9 credit hours of core courses and 15 credit hours from specialization courses.

Core Chemistry Courses (9 credit hours)

- CHEM 5203 - Advanced Organic Chemistry (3 cr.)
- CHEM 5204 - Methods of Structure Determination (3 cr.)
- CHEM 5205 - Nanochemistry (3 cr.)

Chemistry Specialization Courses (15 credit hours)

The list of chemistry electives is given below:

With the program director's and the faculty advisor's consents, no more than one 4000-level or higher course in the sciences, engineering, or other related areas, not in the student's

undergraduate major, may be taken for graduate credit and counted towards the specialization requirements.

With the program director's consent, CHEM 5910 may be taken only once, and CHEM 5930 may be taken a maximum of twice if the topics are different.

- CHEM 5201 - Biochemistry (3 cr.)
- CHEM 5206 - Advanced Food Chemistry (3 cr.)
- CHEM 5211 - Applied Food Microbiology (3 cr.)
- CHEM 5212 - Food Safety Assurance (3 cr.)
- CHEM 5213 - Food Packaging (3 cr.)
- CHEM 5215 - Food Additives, Contaminants and Legislation (3 cr.)
- CHEM 5217 - Sensory Evaluation of Food Products (3 cr.)
- CHEM 5218 - Functional Foods and Nutraceuticals (3 cr.)
- CHEM 5219 - Food Analysis (3 cr.)
- CHEM 5220 - Life Cycle Nutrition (3 cr.)
- CHEM 5221 - Nutrition & Diseases (3 cr.)
- CHEM 5222 - Clinical Nutrition (3 cr.)
- CHEM 5241 - The Chemistry of Nanostructures (3 cr.)
- CHEM 5242 - Nanoelectrochemistry (3 cr.)
- CHEM 5423 - Electrochemical Techniques: Fundamentals and Applications (3 cr.)
- CHEM 5910 - Independent Study in Chemistry (3 cr.)
- CHEM 5930 - Selected Topics in Chemistry (3 cr.)
- CHEM 6103 - Bioseparation Processes for Food and Pharmaceutical Industries (3 cr.)
- CHEM 6105 - Principles and Applications of Mass Spectrometry (3 cr.)
- CHEM 6107 - Chemistry of Natural and Synthetic Polymers (3 cr.)
- CHEM 6240 - Nanoporous Materials (3 cr.)

Thesis (9 credit hours)

Graduate thesis work is required for the Master of Science in Chemistry degree program.

SCI 5940 - Graduate Thesis Seminar (3 cr.)

Various research topics are discussed in SCI 5940, which must be completed before registering for thesis credits.

CHEM 5980 - Research Guidance and Thesis (3 cr.)

A student must register for CHEM 5980 after completing 15 credit hours. Students must register in CHEM 5980 for at least two semesters, totaling 6 credit hours. After that, CHEM 5980 is taken

for one billable credit hour each semester until completion of the program requirements. Students will not be allowed to register for CHEM 5980 a second time unless they have defended their thesis proposal.

Sustainable Development (M.Sc.) with concentrations in Green Technologies, Entrepreneurship, and Sustainable Cities and Communities

Master of Science in Sustainable Development

The Master of Science program in Sustainable Development is designed to take advantage of sustainable development as an economic growth opportunity. This MSc program aims to create a whole new generation of business and social entrepreneurs with the skills will allow them to start up green businesses, launch innovative ventures and products, and put in place public policy and social entrepreneurship innovations that, together, address society's environmental and natural resource challenges. The program aims to provide students with a sound theoretical and practical understanding of innovation and entrepreneurship in all three sectors-private, governmental and non-profit- in preparation for careers as entrepreneurs and "intrapreneurs" in a range of organizations.

Through this program, students will learn how to identify, assess and shape environmental ideas into real business opportunities and how to support such ventures through entrepreneurial private, government and civil society initiatives. Adopting an interdisciplinary approach, the course work combines a conceptual review of the relationships among business, industry, environment, policy and society, with a much more applied examination of the wide range of initiatives that relate to environmental management and sustainable economic development.

The MSc is facilitated by the available state-of-the-art equipment and facilities available at the SSE, BUS, GAPP and HUSS.

A minimum of 33 credit hours is required for the MSc. The degree to be awarded is an "AUC MSc in Sustainable Development."

Objectives

The graduates of the MSc in Sustainable Development will

1. Have the multi-disciplinary knowledge of green innovation and the key aspects and dimensions of sustainable development.
2. Foster a strong culture of green entrepreneurship and business in Egypt and the region
3. Engage in advanced green industry careers
4. Excel in an interdisciplinary environment both as individuals and within a team

5. Seize and develop commercial opportunities in the fast advancing green technologies field locally and globally.

Admissions

A candidate for the program must have a bachelor's degree in architecture, engineering, science, policy, business or social sciences. Admission is also subject to the general university requirements for graduate study, including English language proficiency. A minimum GPA of 3.0 out of 4.0 is required for full admission into the program. Students who have some deficiency in their undergraduate training but are well-qualified in other aspects maybe admitted provisionally. The program director and track coordinators may prescribe a program of non-credit work to make up for the deficiency. Students might be asked to take one or more courses from a list of courses approved by the GREN advisory committee and selected with their advisor to upgrade their knowledge and qualify them for this program.

Courses (24 credit hours)

Core Courses (9 Credit Hours)

All students must take:

- GREN 5201 - Global Changes and Sustainable Development (3 cr.)

And select two more courses out of:

- ENTR 5201 - Entrepreneurship and Regional Opportunities (3 cr.)
- ENGR 5240 - Engineering for a Sustainable Environment (3 cr.)
- GREN 5930 - Selected Topics: Entrepreneurship in Sustainability (3 cr.)
- PPAD 5132 - Social and Environmental Policy (3 cr.)
- PSYC 5100 - Research Methods and Inferential Statistics for Psychology (3 cr.)

Concentration Electives (15 Credit Hours)

Students take 9 credits in one concentration of their choice (groups A, B, C).

For the remaining 6 credit hours of electives, students must take them from any group outside their concentration, this can include ENGR 5101 - Cross Talk: Implementation Science and Engineering (3 cr.). Students can take a maximum of one independent study course or a 4000-level course when relevant to the student's research and with prior approval of the program director.

Group A - Green Technologies Concentration

- GREN 5214 - Green Buildings (3 cr.)
- GREN 5215 - Sustainability of Thermal Systems (3 cr.)

- GREN 5216 - Water-Energy-Food Nexus (3 cr.)
- GREN 5217 - Renewable Energy Systems (3 cr.)
- GREN 5218 - Sustainable Agriculture (3 cr.)
- GREN 5219 - Selected Topics in Green Technologies (3 cr.)
- GREN 5220 - Integrated Water Resources Management (3 cr.)

Group B - Entrepreneurship Concentration

- FINC 5202 - Financial Management (3 cr.)
- GREN 5930 - Selected Topics: Entrepreneurship in Sustainability (3 cr.)
- MGMT 5302 - Managing Organizations and the Human Capital (3 cr.)
- MKTG 5306 - Strategic Marketing (3 cr.)
- OPMG 5202 - Operations and Supply Chain Management (3 cr.)

Group C - Sustainable Cities and Communities Concentration

- MRS 5203 - International Migration and Development (3 cr.)
- PPAD 5128 - Corporate Social Responsibility and NGO Partnerships (3 cr.)
- PPAD 5141 - Policy for Sustainable Cities (3 cr.)
- PPAD 5142 - Greening the Built Environment (3 cr.)
- PPAD 5143 - Urban Infrastructure Development for Sustainability (3 cr.)
- PSYC 5210 - Community Psychology and Systems Theory (3 cr.)
- PSYC 5243 - Prevention and Intervention in Communities (3 cr.)
- PSYC 5253 - Consultation to Non-Profit Organizations (3 cr.)
- PSYC 5256 - Special Topics in Psychology (3 cr.)
- SOC/ANTH 5245 - The City: The Making and Unmaking of Urban Lifeworlds (3 cr.)

Thesis (9 Credit Hours)

Graduate thesis work is a required part of the Sustainable Development degree program.

SCI 5940 - Graduate Thesis Seminar (3 cr.)

Various research topics are discussed in SCI 5940, which must be completed before registering for thesis credits.

GREN 5980 - Research Guidance Thesis (3 cr.)

A student must register for GREN 5980 after the completion of 15 credit hours. Students must register in GREN 5980 for at least two semesters for a total of six credit hours. After that, GREN 5980 is taken for one billable credit hour each semester until completion of the program

requirements. Students will not be allowed to register for the second time in GREN 5980 unless they have defended their thesis proposal.

Students are encouraged to "twin" in the thesis work. At least two students can agree on submitting a topic for a "twinning thesis" that has to be approved by their faculty supervisors from at least two different schools by the end of the first academic year.

The twinning thesis does not mean reducing the workload, since each student should complete a minimum of 33 credits to be awarded a twinning MSc degree. Students work on one topic from different perspectives and submit two theses.

Graduate Diploma

Chemistry (Graduate Diploma)

The Department of Biological, Chemical & Global Health Sciences offers a Graduate Diploma in Chemistry upon the successful completion of 18 credit hours of chemistry courses.

Admission

A bachelor's degree in chemistry or a related discipline with a minimum GPA of 3.0 out of 4.0, is required for admission into the program. Admission is also subject to the general university requirements for the graduate program. For those students whose grade records indicate promising ability, but who otherwise did not have adequate preparation in chemistry, admission may be granted under the requirement that remedial courses will be taken.

Sustainable Development (Graduate Diploma)

Graduate Diploma in Sustainable Development

The Diploma in Sustainable Development considers the concept of sustainable development as an economic growth opportunity. The Diploma is designed for candidates who desire to make a contribution to the emerging field of sustainable development. The Diploma is directed at providing the student with multi-disciplinary background in areas such as innovation and entrepreneurship, sustainable technologies, social and environmental policy. It aims at preparing students for careers in green industry with the capacity necessary to lead sustainable development in Egypt and the Middle East. Adopting an interdisciplinary approach, the course work combines a conceptual review of the relationships between business, industry, environment, policy and society, with a much more applied examination of the wide range of initiatives that relate to environmental management and sustainable economic development.

The Diploma is facilitated by the available state-of-the-art equipment and facilities available at the SSE, BUS, GAPP, HUSS, and CARES.

A minimum of 18 credit hours (6 courses) are required for the diploma. The degree to be awarded is a "Graduate Diploma" as an AUC Degree.

Objectives

The graduates of the Diploma in Sustainable Development will

1. Have the multi-disciplinary knowledge of green innovation and the key aspects and dimensions of sustainable development
2. Foster a strong culture of green entrepreneurship and business development in Egypt and the region
3. Engage in advanced green industry careers
4. Excel in an interdisciplinary environment both as individuals and within a team
5. Seize and develop commercial opportunities in the fast-advancing green technologies field locally and globally.

Admissions

A candidate for the program must have a Bachelor's in Engineering, policy, business or social sciences. Admission is also subject to the general university requirements for graduate study, including English language proficiency. A minimum GPA of 3.0 out of 4.0 is required for full admission into the program. Students who have some deficiency in their undergraduate training but are well-qualified in other aspects may be admitted provisionally. The program director and tract coordinators may prescribe a program of noncredit work to make up for the deficiency.

Courses (18 credit hours)

The program of study is planned with the program director, and should include a minimum of 9 credit hours of core courses and a minimum of 9 credit hours of electives from two of the four sustainable development sub-modules. A maximum of 3 credit hours may be taken as independent study (GREN 5910 - Independent Study in Sustainable Development (3 cr.)) with prior approval of the program director. Students might be asked to take additional non-credit courses from the balance module to qualify them for this program.

I. Core Module- M1 (9 Credit Hours)

All students must take GREN 5201 and select two more courses out of ENGR 5240, PPAD 5132, and SOC/ANTH 5270.

II. Balance Module- M2 (0 Credit Hours)

Students might be asked to take one or more courses from a list of courses approved by the GREN advisory committee and selected with their advisor to upgrade their knowledge and qualify them for this program.

III. Sustainable Development Module M3- Electives (9 Credit Hours)

Students should take a total of three courses (9 cr.) in the Sustainable Development Module to cover two of the four sub-modules. These courses are to include two courses (6 cr.) from the sub-module the student wants to concentrate in. All students must take at least one course (3 cr.) out of these three courses from the Green Technologies sub-module M3-A. A maximum of three credit hours can be taken as an independent study course or as a 4000-level course of a topic of relevance with prior approval of the program director.

Green Technologies Module (M3-A):

- GREN 5211 - Water Desalination (3 cr.)
- GREN 5214 - Green Buildings (3 cr.)
- GREN 5215 - Sustainability of Thermal Systems (3 cr.)
- GREN 5219 - Selected Topics in Green Technologies (3 cr.)

Entrepreneurship Module (M3-B):

- FINC 5202 - Financial Management (3 cr.)
- MGMT 5202 - Managing Organizations in a Dynamic Environment (3 cr.)
- MKTG 5201 - Marketing Management (3 cr.)

Sustainable Cities Module (M3-C):

- PPAD 5128 - Corporate Social Responsibility and NGO Partnerships (3 cr.)
- PPAD 5141 - Policy for Sustainable Cities (3 cr.)
- PPAD 5142 - Greening the Built Environment (3 cr.)
- PPAD 5143 - Urban Infrastructure Development for Sustainability (3 cr.)

Sustainable Communities Module (M3-D):

- PSYC 5210 - Community Psychology and Systems Theory (3 cr.)
- PSYC 5233 - Program Evaluation (3 cr.)
- PSYC 5243 - Prevention and Intervention in Communities (3 cr.)
- PSYC 5253 - Consultation to Non-Profit Organizations (3 cr.)

- SOC/ANTH 5245 - The City: The Making and Unmaking of Urban Lifeworlds (3 cr.)

Other Courses of Study

Premedical Track

Most US medical schools require an undergraduate Bachelor's degree that includes the required courses for admission. The liberal arts education at AUC provides the well-rounded education required by medical schools. AUC offers a list of primary undergraduate majors that align with medical school prerequisite requirements.

The Pre-medical track at AUC is not a degree-granting major but a track with a list of courses for students from all majors at AUC who plan to attend medical school after earning their bachelor's degree. Premedical track students spend around two years studying basic behavioral sciences, biology, chemistry, physics, math, and humanities or social science courses that involve substantial critical writing. Premedical students must fulfill all requirements for their major and those of the premedical track to be eligible for admission to US medical schools.

Students interested in pursuing a pre-medical track should approach the Department of Biological, Chemical & Global Health Sciences where they will be assigned a faculty adviser to help with course sequencing and academic preparation for medical school admission.

The following academic prerequisites are required by most schools*

- One year or two courses of General Biology or Zoology with lab.
- One year or two courses of Inorganic Chemistry (General or Physical) with lab.
- One year or two courses of Organic Chemistry with lab.
- One year or two courses of Physics with lab.
- One year or two courses of Math (Calculus, or Statistics).
- One semester of English.
- Biochemistry (recommend).
- Behavioral sciences, social sciences, or psychology (recommend).

* Students must check their desired medical schools for the specific admission requirements as they may need additional requirements for admission.

Department of Computer Science and Engineering

Professors: S. Aly, T. ElBatt, S. Eldawlatly, A. El-Kadi (Chair), M. N. Mikhail, A. Rafea, C. Salama, M. Shalan, M. Youssef

Associate Professor: A. Elmougy

Assistant Professors: A. ElBolock, D. Mahmoud, N. Sakr, H. Sharara

The Department of Computer Science and Engineering offers two undergraduate degrees: The Bachelor of Science in Computer Science and the Bachelor of Science in Computer Engineering.

Vision
The Department of Computer Science and Engineering of The American University in Cairo aspires to be an internationally recognized source of knowledge that produces outstanding graduates in computer science and computer engineering.

Mission
The mission of the Department of Computer Science and Engineering of the American University in Cairo is to:

- Motivate and inspire students by providing high-caliber, fully integrated computing programs
- Provide leadership and innovation in a rapidly evolving global information society
- Advance the state of knowledge in computing
- Pursue scholarly research for publication and dissemination, through a comprehensive learning environment.

Bachelor of Science

Computer Engineering with specializations in Embedded Systems, Artificial Intelligence and Cybersecurity (B.S)

Bachelor of Science in Computer Engineering with optional specializations in Embedded Systems, Artificial Intelligence and Cybersecurity

Computer engineering is defined as the discipline that embodies the science and technology of design, construction, implementation, and maintenance of software and hardware components of modern computing systems and computer-controlled equipment. It is solidly grounded in the theories and principles of computing, mathematics, science, and engineering and it applies these theories and principles to solve technical problems through the design of computing hardware, software, networks, and processes. Computer engineers are involved in the design of computer-based systems which includes (in addition to systems for portable, desktop and client/server environments and communications devices) distributed computing environments and embedded systems just to name a few. The convergence of several established technologies (such as television, telecommunications and networking infrastructures) resulted in the creation of massive challenges and opportunities for computer engineers.

The undergraduate program in computer engineering is to produce graduates with a broad perspective in both software and hardware topics relevant to computer systems engineering. It provides the foundation and areas of specialization necessary to analyze, design and evaluate systems software, middleware and software/hardware architectures and interfaces. The specific objectives of the program are to: educate students with breadth of knowledge in computer engineering that would allow them to contribute to computing projects individually or as members of multidisciplinary teams with emphasis on the creative applications of scientific knowledge in the analysis, design, and implementation of economical computer software and hardware systems; introduce students to a broad spectrum of computer engineering topics, with concentration in one or more computing areas of their choice; prepare students to cope with, and improve on, the ever-evolving discipline of computer engineering and state-of-the-art technologies in the industry of software and hardware systems. This is achieved through enabling students to integrate various analysis and design methodologies, models, techniques, and tools to develop software/hardware systems and their interfaces at the edge of technology; train students to communicate effectively, think critically, and recognize and consider the impact of computing solutions in a global and societal context with ability to understand and be sensitive to other cultures; motivate students to engage in life-long learning, develop their ability to pursue graduate studies in computer science, computer engineering, or other related areas, and develop students who are creative, possess qualities of leadership, and committed to professional and ethical conduct.

The Computer Engineering (B.S.) program is accredited by the Engineering Accreditation Commission of ABET, under the commission's General Criteria and the Program Criteria for the Electrical, Computer, Communications, Telecommunication(s) and Similarly Named Engineering Programs.

The Computer Engineering (B.S.) program has an equivalence from the Supreme Council of Universities in Egypt.

Program Objectives

The computer engineering program at AUC graduates a computer engineer who, within few years of graduation, fulfills societal needs, with consideration to ethical and environmental issues, in one or more of the following roles:

1. A professional team member in a multidisciplinary environment, local or global.
2. A distinguished member of computer engineering field through promotion, or professional development.
3. A successful member of an advanced academic or research organization.
4. A successful entrepreneur.

Program Learning Outcomes

The program enables students to achieve the following outcomes, by the time of graduation:

1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
3. An ability to communicate effectively with a range of audiences
4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Declaration of the Computer Engineering Major

Students accepted at AUC may either get admitted into their preferred major at the time of admission to the university (declare their major at the gate) or get admitted to the university as undeclared. Students who get admitted into a major will still have the opportunity to change their major later. Students must declare a major before completing 60 credit hours (before achieving a junior standing). Please check the eligibility criteria for declaring the Computer Engineering major below.

Eligibility Criteria for Computer Engineering Major Declaration at the Gate

The eligibility criteria for students who wish to apply to declare their major from the gate, with the declaration effective in the fall 2027 semester or the spring 2028 semester, can be accessed through the link below. Admission to the major is based on the program's student capacity.

To view the eligibility criteria, Click Here.

Eligibility Criteria for Computer Engineering Major Declaration from Within

The eligibility criteria for undeclared students (or students switching majors) who wish to apply to declare their major, with the declaration effective in the fall 2027 semester or the spring 2028 semester, can be accessed through the link below. Admission to the major is based on the program's student capacity.

To view the eligibility criteria, Click Here.

A total of 146 credits is required for the Bachelor of Science degree in Computer Engineering.

Core Curriculum Requirements (33 credits)

The remaining 7 credit hours required to satisfy the core are fulfilled by the concentration Science/lab (4 crs) and the capstone projects CSCE 4980, CSCE 4981 (3 crs).

Engineering Core Requirements (40 credits)

- CHEM 1005 - General Chemistry I (3 cr.)
- CHEM 1015 - General Chemistry I-Laboratory (1 cr.)
- ENGR 2105 - Engineering Mechanics (3 cr.)
- ENGR 3222 - Engineering Economy (3 cr.)
- MACT 1122 - Calculus II (3 cr.)
- MACT 2123 - Calculus III (3 cr.)
- MACT 2131 - Discrete Mathematics (3 cr.)
- MACT 2132 - Linear Algebra (3 cr.)
- MACT 2141 - Differential Equations (3 cr.)
- MACT 3224 - Probability and Statistics (3 cr.)
- PHYS 1011 - Physics 1: Classical Mechanics, Sound and Heat (3 cr.)
- PHYS 1012 - General Physics Laboratory I (1 cr.)
- PHYS 1021 - Physics 2: Electricity and Magnetism (3 cr.)
- PHYS 1022 - General Physics Laboratory II (1 cr.)
- PHYS 2211 - Introduction to Electronics (3 cr.)
- PHYS 2213 - Electronics Lab (1 cr.)

Concentration Requirements (61 credits)

- CSCE 1001 - Fundamentals of Computing I (3 cr.)
- CSCE 1101 - Fundamentals of Computing II (3 cr.)
- CSCE 1102 - Fundamentals of Computing II Lab (1 cr.)
- CSCE 2200 - Applied Data Structures (3 cr.)
- CSCE 2202 - Analysis and Design of Algorithms (3 cr.)

- CSCE 2203 - Analysis and Design of Algorithms Lab (1 cr.)
- CSCE 2301 - Digital Design I (3 cr.)
- CSCE 2302 - Digital Design I Lab (1 cr.)
- CSCE 2303 - Computer Organization and Assembly Language Programming (3 cr.)
- CSCE 2501 - Fundamentals of Database Systems (3 cr.)
- CSCE 3301 - Computer Architecture (3 cr.)
- CSCE 3302 - Computer Architecture Lab (1 cr.)
- CSCE 3303 - Fundamental Microelectronics (3 cr.)
- CSCE 3304 - Digital Design II (3 cr.)
- CSCE 3312 - Computer Networks (3 cr.)
- CSCE 3313 - Computer Networks Lab (1 cr.)
- CSCE 3401 - Operating Systems (3 cr.)
- CSCE 3611 - Digital Signal Processing (3 cr.)
- CSCE 3701 - Software Engineering (3 cr.)
- CSCE 4202 - Applied Quantum Computing (3 cr.)
- CSCE 4301 - Embedded Systems (3 cr.)
- CSCE 4302 - Embedded Systems Lab (1 cr.)
- CSCE 4411 - Fundamentals of Distributed Systems (3 cr.)
- CSCE 4950 - Industrial Training (1 cr.)
- CSCE 4980 - Senior Project I (1 cr.)
- CSCE 4981 - Senior Project II (2 cr.)

Concentration Electives (12 credits)

A minimum of Twelve credit hours must be taken from the Computer Engineering elective courses to be chosen in consultation with the student's advisor (no more than 3 credits can be chosen among the MACT courses) and to satisfy the following:

(1) For the Bachelor of Science in Computer Engineering

Twelve credit hours must be taken from the Computer Engineering elective courses.

(2) For the Bachelor of Science in Computer Engineering with specialization in Embedded Systems

Nine credit hours from group A. The remaining three credit hours must be satisfied by other Computer Engineering elective courses.

Group A

- CSCE 4303 - Embedded Systems on Chip Design (3 cr.)
- CSCE 4315 - Internet of Things Networking Protocols (3 cr.)

- CSCE 4930 - Selected Topics in Computer Science and Engineering (1-3 cr.) ; must be relevant to Embedded Systems with the approval of the department. The course could be taken more than once with a maximum of 6 cr.

  Graduate courses relevant to Embedded Systems (a maximum of 6 cr.) may be taken on an exceptional basis and in compliance with university regulations.

(3) For the Bachelor of Science in Computer Engineering with specialization in Artificial Intelligence

Three to six credit hours from group B and six to nine credit hours from group C, ensuring a combined minimum of 12 credit hours from these two groups.

Group B

- CSCE 3601 - Fundamentals of Artificial Intelligence (3 cr.)
- CSCE 3602 - Fundamentals of Machine Learning (3 cr.)

Group C

- CSCE 4602 - Introduction to Artificial Neural Networks (3 cr.)
- CSCE 4603 - Fundamentals of Computer Vision (3 cr.)
- CSCE 4604 - Advanced Machine Learning (3 cr.)
- CSCE 4605 - Fundamentals of Data Mining (3 cr.)
- CSCE 4800 - The Data Science Studio: Industry Cases and Research (3 cr.)
- CSCE 4930 - Selected Topics in Computer Science and Engineering (1-3 cr.) ; must be relevant to Artificial Intelligence with the approval of the department. The course could be taken more than once with a maximum of 6 cr.

  Graduate courses relevant to Artificial Intelligence (a maximum of 6 credit hours) may be taken on an exceptional basis, and in compliance with university regulations.

(4) For the Bachelor of Science in Computer Engineering with specialization in Cybersecurity

Six credit hours from group D and six credit hours from group E.

Group D

- CSCE 3423 - Introduction to Cybersecurity (3 cr.)
- CSCE 4421 - Network Security (3 cr.)

Group E

- CSCE 4423 - Digital Forensics (3 cr.)
- CSCE 4424 - Web Security (3 cr.)
- CSCE 4702 - Secure Systems Engineering (3 cr.)
- CSCE 4930 - Selected Topics in Computer Science and Engineering (1-3 cr.) ; must be relevant to Cyber Security with the approval of the department. The course could be taken more than once with a maximum of 6 cr.

  Graduate courses relevant to Cyber Security (a maximum of 6 credit hours) may be taken on an exceptional basis, and in compliance with university regulations.

Computer Engineering Elective Courses

- CSCE 3101 - Programming Language (1-3 cr.)
- CSCE 3102 - Programming in Java (3 cr.)
- CSCE 3103 - Object Oriented Programming (3 cr.)
- CSCE 3104 - Concepts of Programming Languages (3 cr.)
- CSCE 3311 - Data and Computer Communications (3 cr.)
- CSCE 3423 - Introduction to Cybersecurity (3 cr.)
- CSCE 3601 - Fundamentals of Artificial Intelligence (3 cr.)
- CSCE 3602 - Fundamentals of Machine Learning (3 cr.)
- CSCE 4101 - Compiler Design (3 cr.)
- CSCE 4201 - Theory of Computing (3 cr.)
- CSCE 4303 - Embedded Systems on Chip Design (3 cr.)
- CSCE 4315 - Internet of Things Networking Protocols (3 cr.)
- CSCE 4421 - Network Security (3 cr.)
- CSCE 4423 - Digital Forensics (3 cr.)
- CSCE 4424 - Web Security (3 cr.)
- CSCE 4501 - Big Data Systems (3 cr.)
- CSCE 4502 - Design of Web-based Systems (3 cr.)
- CSCE 4602 - Introduction to Artificial Neural Networks (3 cr.)
- CSCE 4603 - Fundamentals of Computer Vision (3 cr.)
- CSCE 4604 - Advanced Machine Learning (3 cr.)
- CSCE 4605 - Fundamentals of Data Mining (3 cr.)
- CSCE 4702 - Secure Systems Engineering (3 cr.)
- CSCE 4800 - The Data Science Studio: Industry Cases and Research (3 cr.)
- CSCE 4910 - Guided Studies in Computer Science and Engineering (1-3 cr.)
- CSCE 4930 - Selected Topics in Computer Science and Engineering (1-3 cr.)
- DSGN 3400 - Digital Game Design (3 cr.)
- ECNG 4103 - Testing of Digital Circuits (3 cr.)
- ECNG 4930 - Selected Topics in Electronics and Communications Engineering (3 cr.)
- MACT 3143 - Numerical Methods (3 cr.)
- MACT 4133 - Formal and Mathematical Logic (3 cr.)
- MACT 4134 - Modern Algebra (3 cr.)
- MACT 4135 - Graph Theory (3 cr.)
- MACT 4212 - Stochastic Processes (3 cr.)
- PHYS 4227 - Fundamentals of Quantum Computing (3 cr.)

Computer Science with specializations in Embedded Systems, Artificial Intelligence and Cybersecurity (B.S.)

Bachelor of Science in Computer Science with optional specializations in Embedded Systems, Artificial Intelligence and Cybersecurity

The Computer Science (B.S.) program is accredited by the Computing Accreditation Commission of ABET, under the commission's General Criteria and the Program Criteria for the Computer Science and Similarly Named Computing Programs.

The Computer Science (B.S.) program has an equivalence from the Supreme Council of Universities in Egypt.

Program Objectives

The computer science program at AUC graduates a computer scientist who, within a few years of graduation, fulfills societal needs, with consideration to ethical and environmental issues, in one or more of the following roles:

1. A professional team member in a multidisciplinary environment, local or global.
2. A distinguished member of computing field through promotion, or professional development.
3. A successful member of an advanced academic or research organization.
4. A successful entrepreneur.

Program Learning Outcomes

The program enables students to achieve the following outcomes, by the time of graduation:

1. Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.
2. Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.
3. Communicate effectively in a variety of professional contexts.
4. Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.
5. Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.
6. Apply computer science theory and software development fundamentals to produce computing-based solutions.

The course of study offers a broad-based intellectual engagement with computing both in theory and practice as well as logic and capabilities. The theoretical ground, abstraction, design as well as the professional practice levels (technical competence, team work, problem solving and communication skills), social and ethical contexts of the discipline of computing are well integrated into the curriculum that the department offers.

The study program is designed to prepare students for a wide variety of careers. The most profound positions that our graduates are well prepared to occupy (or have already been engaged in) may be classified into the following professional disciplines: Software Engineering, Systems Design and Programming, Applications design and programming and Information-Systems design and analysis. The program also prepares students for further studies and research in the computing field.

Declaration of the Computer Science Major

Students accepted at AUC may either get admitted into their preferred major at the time of admission to the university (declare their major at the gate) or get admitted to the university as undeclared. Students who get admitted into a major will still have the opportunity to change their major later. Students must declare a major before completing 60 credit hours (before achieving a junior standing). Please check the eligibility criteria for declaring the Computer Science major below.

Eligibility Criteria for Computer Science Major Declaration at the Gate

The eligibility criteria for students who wish to apply to declare their major from the gate, with the declaration effective in the fall 2027 semester or the spring 2028 semester, can be accessed through the link below. Admission to the major is based on the program's student capacity.

To view the eligibility criteria, Click Here.

Eligibility Criteria for Computer Science Major Declaration from Within

The eligibility criteria for undeclared students (or students switching majors) who wish to apply to declare their major, with the declaration effective in the fall 2027 semester or the spring 2028 semester, can be accessed through the link below. Admission to the major is based on the program's student capacity.

To view the eligibility criteria, Click Here.

A total of 130 credits is required for a Bachelor's degree in Computer Science.

Core Curriculum (33 credits)

The remaining 7 credit hours required to satisfy the core are fulfilled by the concentration Science/lab (4 cr.) and the capstone projects CSCE 4980, CSCE 4981 (3 cr.).

Computer Science Requirements (65 credits)

a) Concentration Requirements (47 credits)

- CSCE 1001 - Fundamentals of Computing I (3 cr.)
- CSCE 1101 - Fundamentals of Computing II (3 cr.)
- CSCE 1102 - Fundamentals of Computing II Lab (1 cr.)
- CSCE 2200 - Applied Data Structures (3 cr.)
- CSCE 2202 - Analysis and Design of Algorithms (3 cr.)
- CSCE 2203 - Analysis and Design of Algorithms Lab (1 cr.)
- CSCE 2301 - Digital Design I (3 cr.)
- CSCE 2302 - Digital Design I Lab (1 cr.)
- CSCE 2303 - Computer Organization and Assembly Language Programming (3 cr.)
- CSCE 2501 - Fundamentals of Database Systems (3 cr.)
- CSCE 3104 - Concepts of Programming Languages (3 cr.)
- CSCE 3301 - Computer Architecture (3 cr.)
- CSCE 3302 - Computer Architecture Lab (1 cr.)
- CSCE 3401 - Operating Systems (3 cr.)
- CSCE 3701 - Software Engineering (3 cr.)
- CSCE 4101 - Compiler Design (3 cr.)
- CSCE 4201 - Theory of Computing (3 cr.)
- CSCE 4950 - Industrial Training (1 cr.)
- CSCE 4980 - Senior Project I (1 cr.)
- CSCE 4981 - Senior Project II (2 cr.)

b) Computer Science electives (18 credits)

A minimum of Eighteen credit hours must be taken from the Computer Science elective courses in consultation with the student's advisor (no more than 6 credits can be chosen among the MACT courses) and to satisfy the following:

(1) For the Bachelor of Science in Computer Science

Eighteen credit hours must be taken from the Computer Science elective courses.

(2) For the Bachelor of Science in Computer Science with specialization in Embedded Systems

All of group A and nine credit hours from group B. The remaining credit hours must be satisfied by other Computer Science elective courses.

Group A

- CSCE 4301 - Embedded Systems (3 cr.)
- CSCE 4302 - Embedded Systems Lab (1 cr.)

Group B

- CSCE 4303 - Embedded Systems on Chip Design (3 cr.)
- CSCE 4315 - Internet of Things Networking Protocols (3 cr.)
- CSCE 4930 - Selected Topics in Computer Science and Engineering (1-3 cr.) ; must be relevant to Embedded Systems with the approval of the department. The course could be taken more than once with a maximum of 6 cr.

  Graduate courses relevant to Embedded Systems (a maximum of 6 cr.) may be taken on an exceptional basis, and in compliance with university regulations.

(3) For the Bachelor of Science in Computer Science with specialization in Artificial Intelligence

Three to six credit hours from group C and six to nine credit hours from group D, ensuring a combined minimum of 12 credit hours from these two groups. Any remaining credit hours must be satisfied by Computer Science elective courses.

Group C

- CSCE 3601 - Fundamentals of Artificial Intelligence (3 cr.)
- CSCE 3602 - Fundamentals of Machine Learning (3 cr.)

Group D

- CSCE 4602 - Introduction to Artificial Neural Networks (3 cr.)
- CSCE 4603 - Fundamentals of Computer Vision (3 cr.)
- CSCE 4604 - Advanced Machine Learning (3 cr.)
- CSCE 4605 - Fundamentals of Data Mining (3 cr.)
- CSCE 4800 - The Data Science Studio: Industry Cases and Research (3 cr.)
- CSCE 4930 - Selected Topics in Computer Science and Engineering (1-3 cr.) ; must be relevant to Artificial Intelligence with the approval of the department. The course could be taken more than once with a maximum of 6 cr.

  Graduate courses relevant to Artificial Intelligence (a maximum of 6 credit hours) may be taken on an exceptional basis, and in compliance with university regulations.

(4) For the Bachelor of Science in Computer Science with specialization in Cybersecurity

Six credit hours from group E and a minimum of six credit hours from group F. The remaining credit hours must be satisfied by other Computer Science elective courses.

Group E

- CSCE 3423 - Introduction to Cybersecurity (3 cr.)
- CSCE 4421 - Network Security (3 cr.)

Group F

- CSCE 4202 - Applied Quantum Computing (3 cr.)
- CSCE 4423 - Digital Forensics (3 cr.)
- CSCE 4424 - Web Security (3 cr.)
- CSCE 4702 - Secure Systems Engineering (3 cr.)

- CSCE 4930 - Selected Topics in Computer Science and Engineering (1-3 cr.) ; must be relevant to Cyber Security with the approval of the department. The course could be taken more than once with a maximum of 6 cr.

  Graduate courses relevant to Cyber Security (a maximum of 6 credit hours) may be taken on an exceptional basis, and in compliance with university regulations.

Computer Science Elective Courses

- CSCE 3101 - Programming Language (1-3 cr.)
- CSCE 3102 - Programming in Java (3 cr.)
- CSCE 3103 - Object Oriented Programming (3 cr.)
- CSCE 3303 - Fundamental Microelectronics (3 cr.)
- CSCE 3304 - Digital Design II (3 cr.)
- CSCE 3311 - Data and Computer Communications (3 cr.)
- CSCE 3312 - Computer Networks (3 cr.)
- CSCE 3313 - Computer Networks Lab (1 cr.)
- CSCE 3423 - Introduction to Cybersecurity (3 cr.)
- CSCE 3601 - Fundamentals of Artificial Intelligence (3 cr.)
- CSCE 3602 - Fundamentals of Machine Learning (3 cr.)
- CSCE 3611 - Digital Signal Processing (3 cr.)
- CSCE 4202 - Applied Quantum Computing (3 cr.)
- CSCE 4301 - Embedded Systems (3 cr.)
- CSCE 4302 - Embedded Systems Lab (1 cr.)
- CSCE 4303 - Embedded Systems on Chip Design (3 cr.)
- CSCE 4315 - Internet of Things Networking Protocols (3 cr.)
- CSCE 4411 - Fundamentals of Distributed Systems (3 cr.)
- CSCE 4421 - Network Security (3 cr.)
- CSCE 4423 - Digital Forensics (3 cr.)
- CSCE 4424 - Web Security (3 cr.)
- CSCE 4501 - Big Data Systems (3 cr.)
- CSCE 4502 - Design of Web-based Systems (3 cr.)
- CSCE 4602 - Introduction to Artificial Neural Networks (3 cr.)
- CSCE 4603 - Fundamentals of Computer Vision (3 cr.)
- CSCE 4604 - Advanced Machine Learning (3 cr.)
- CSCE 4605 - Fundamentals of Data Mining (3 cr.)
- CSCE 4702 - Secure Systems Engineering (3 cr.)
- CSCE 4800 - The Data Science Studio: Industry Cases and Research (3 cr.)
- CSCE 4910 - Guided Studies in Computer Science and Engineering (1-3 cr.)
- CSCE 4930 - Selected Topics in Computer Science and Engineering (1-3 cr.)

- DSGN 3400 - Digital Game Design (3 cr.)
- MACT 2141 - Differential Equations (3 cr.)
- MACT 3143 - Numerical Methods (3 cr.)
- MACT 4133 - Formal and Mathematical Logic (3 cr.)
- MACT 4134 - Modern Algebra (3 cr.)
- MACT 4135 - Graph Theory (3 cr.)
- MACT 4212 - Stochastic Processes (3 cr.)
- PHYS 4227 - Fundamentals of Quantum Computing (3 cr.)

Collateral Requirements (26 credits)

- MACT 1122 - Calculus II (3 cr.)
- MACT 2123 - Calculus III (3 cr.)
- MACT 2131 - Discrete Mathematics (3 cr.)
- MACT 2132 - Linear Algebra (3 cr.)
- MACT 3211 - Applied Probability (3 cr.)
- MACT 3223 - Statistical Inference (3 cr.)
- PHYS 1011 - Physics 1: Classical Mechanics, Sound and Heat (3 cr.)
- PHYS 1012 - General Physics Laboratory I (1 cr.)
- PHYS 1021 - Physics 2: Electricity and Magnetism (3 cr.)
- PHYS 1022 - General Physics Laboratory II (1 cr.)

General Electives (6 credits)

Minors

Computer Science Minor

A minor in Computer Science provides students from other disciplines with essential knowledge and practice in computing that would enable them to develop simple or advanced applications in their field of study.

This minor is open to students from all majors except those majoring in Computer Engineering or Management of Information and Communication Technology.

A minor in Computer Science is comprised of at least 16 credits.

Required Courses (10 credit hours)

- CSCE 1001 - Fundamentals of Computing I (3 cr.)

- CSCE 1101 - Fundamentals of Computing II (3 cr.)
- CSCE 1102 - Fundamentals of Computing II Lab (1 cr.)
- CSCE 2200 - Applied Data Structures (3 cr.)

Electives (minimum of 6 credit hours)

A minimum of 6 credit hours to be satisfied by taking any 2000, 3000 (except CSCE 3421 and CSCE 3422), 4000 level courses in the CS and/or CE programs in consultation with the minor advisor.

Master in Computing (M. Comp.)

Computing (M. Comp.)

Master in Computing (Non Thesis Option)

The Master in computing (M.Comp.) at AUC prepares students for higher level professional practice in local and international markets. The objectives of the program are to provide graduates with:

- A broad knowledge of advanced Computer Science topics
- Creative applications of scientific knowledge in the analysis, design, and implementation of computer systems
- Detailed knowledge of modern computational and experimental methods
- Extensive knowledge in an area of student interest from one of the offered fields of research
- Awareness of the local and global context in which Computer Science is practiced, including industrial and business practices, social needs, and considerations of cultures and ethics
- An ability to solve computational problems, think critically, function well in a team, and communicate effectively
- A high standard of written and oral communication on technical matters

Admission

Admission requirements are the same as those for the thesis-option M.S.

Courses (33 credit hours)

33 credit hours divided between core courses, elective courses and a capstone project.

Core Courses (6 credit hours)

All candidates must take two core courses to be chosen from the following four courses:

- CSCE 5221 - Algorithms and Complexity Theory (3 cr.)
- CSCE 5231 - Advanced Processor Architecture (3 cr.)
- CSCE 5241 - Distributed Systems (3 cr.)
- CSCE 5261 - Advanced Artificial Intelligence (3 cr.)

Elective Courses (24 credits)

At least eight courses to be chosen from the following list of courses. The two not-taken core courses could be considered for this requirement.

- CSCE 5222 - Data-Driven Algorithms (3 cr.)
- CSCE 5232 - Advanced Network Modelling (3 cr.)
- CSCE 5242 - Parallel Computer Architecture (3 cr.)
- CSCE 5245 - Embedded Real-Time Systems (3 cr.)
- CSCE 5262 - Computational Machine Learning (3 cr.)
- CSCE 5263 - Knowledge Engineering (3 cr.)
- CSCE 5264 - Natural Language Processing (3 cr.)
- CSCE 5265 - Social Network Analysis and Mining (3 cr.)
- CSCE 5266 - Computer Vision (3 cr.)
- CSCE 5267 - Digital Image Processing (3 cr.)
- CSCE 5268 - Computer Graphics and Animation (3 cr.)
- CSCE 5269 - Pattern Analysis (3 cr.)
- CSCE 5271 - Advanced Software Engineering (3 cr.)
- CSCE 5272 - Advanced Software Quality (3 cr.)
- CSCE 5910 - Independent Studies in Computer Science and Engineering (1-3 cr.)
- CSCE 5930 - Selected Topics in Computer Science and Engineering (3 cr.)
- CSCE 6231 - Mobile and Pervasive Computing (3 cr.)
- CSCE 6261 - Advanced Data Mining (3 cr.)
- CSCE 6930 - Advanced Selected Topics in Computer Science (3 cr.)

Capstone Project in Computing (3 cr.)

All candidates must take the Capstone Project course.

CSCE 5980 - Capstone Project in Computing (3 cr.)

Master of Science

Computer Science (M.Sc.)

Master of Science in Computer Science

The master of science program in computer science offers students the opportunity to engage in course work, research projects, and other activities designed to develop theoretical background and up-to-date practical skills in the rapidly changing area of Computer Science. The program provides a broad spectrum of study in preparation for careers in advanced computer research areas. The program allows students flexibility in planning their program of study after the initial course requirements are met.

Admission

The program is open to Computer Science graduates and also to selected students whose preparation is outside Computer Science. However, students entering graduate study from outside the computer science area may be required to go through additional preparation before beginning their graduate program. Those students who have some deficiency in their undergraduate training but are well qualified in other aspects may be admitted provisionally. The department may prescribe a number of prerequisite courses to make up for the deficiency.

Educational Objectives

The Master of Science (M. Sc.) at AUC graduates students for higher level professional practice in local and international markets who, within few years of graduation, fulfills the educational objectives of the program in one of the following roles:

1. A distinguished team leader in a research center of one of the reputable computing Research Institution locally or abroad.
2. A PhD holder graduated from well recognized international or national University that has high reputation in computer science.
3. A successful researcher leading an advanced industrial research organization.
4. A successful entrepreneur developing an advanced research company.

Program Outcomes

Students who complete this program should have the ability to:

1. Formulate computing problems in context with industrial and societal needs.
2. Apply critical thinking and advanced computational programming to provide practical solutions for computing problems.
3. Analyze and critique existing research in a select computational problem and present major findings.

4. Conduct sound research work, present, and defend related findings.
5. Contribute to conferences and technical journals during and after their course of study.
6. Pursue Doctorate degrees in computing in high-caliber universities in Egypt and abroad.

Courses (24 credit hours)

A minimum of eight courses (24 credit hours) is required: three core courses (9 credit hours), and five electives (15 credit hours).

Core Courses (9 credit hours)

All candidates must take the following three core courses:

- CSCE 5221 - Algorithms and Complexity Theory (3 cr.)
- CSCE 5241 - Distributed Systems (3 cr.)
- CSCE 5261 - Advanced Artificial Intelligence (3 cr.)

Elective Courses (15 credit hours)

- CSCE 5222 - Data-Driven Algorithms (3 cr.)
- CSCE 5231 - Advanced Processor Architecture (3 cr.)
- CSCE 5232 - Advanced Network Modelling (3 cr.)
- CSCE 5242 - Parallel Computer Architecture (3 cr.)
- CSCE 5243 - Information and System Security (3 cr.)
- CSCE 5245 - Embedded Real-Time Systems (3 cr.)
- CSCE 5262 - Computational Machine Learning (3 cr.)
- CSCE 5263 - Knowledge Engineering (3 cr.)
- CSCE 5264 - Natural Language Processing (3 cr.)
- CSCE 5265 - Social Network Analysis and Mining (3 cr.)
- CSCE 5266 - Computer Vision (3 cr.)
- CSCE 5267 - Digital Image Processing (3 cr.)
- CSCE 5268 - Computer Graphics and Animation (3 cr.)
- CSCE 5269 - Pattern Analysis (3 cr.)
- CSCE 5271 - Advanced Software Engineering (3 cr.)
- CSCE 5272 - Advanced Software Quality (3 cr.)
- CSCE 5910 - Independent Studies in Computer Science and Engineering (1-3 cr.)
- CSCE 5930 - Selected Topics in Computer Science and Engineering (3 cr.)
- CSCE 6222 - Advanced Data-Driven Optimization (3 cr.)
- CSCE 6231 - Mobile and Pervasive Computing (3 cr.)
- CSCE 6261 - Advanced Data Mining (3 cr.)

- CSCE 6930 - Advanced Selected Topics in Computer Science (3 cr.)
  Note: subject to the approval of the advisor and the course instructor, the student is permitted to take up to six credit hours from the computer science and engineering 4000-level elective courses.

Thesis (9 credit hours)

Graduate thesis work is a required component of the Master of Science in Computer Science degree program. Each student must submit a thesis topic approved by a faculty advisor by the end of the first academic year.

ENGR 5940 - Graduate Thesis Seminar (3 cr.)

Various research topics are discussed in ENGR 5940. This course must be completed before a student is allowed to register for thesis credits.

CSCE 5981 - Graduate Thesis (3 cr.)

A student must register for CSCE 5981 after completing 15 credit hours. Students are required to register in CSCE 5981 for at least two semesters. The first two registrations must each be for three credit hours. Afterward, CSCE 5981 is taken for one billable credit hour each semester until completion of the program requirements. Students will not be allowed to register for the second time in CSCE 5981 unless they have defended their thesis proposal.

Graduate Diploma

Computer Science (Graduate Diploma)

Admission

Admission requirements are the same as those for the M.Sc.

Courses (18 credit hours)

Course work for the diploma in Computer Science is directed at providing the student with background in subjects relevant to the designated Computer Science discipline.

Total Requirements

A total of six 5000-level CSCE courses (18 credit hours) is required for the diploma.

Notes:

The courses which have been successfully completed in the diploma program can be considered as part of the master's degree requirements for students who are admitted to the master's degree studies. The diploma may be completed in one academic year; no thesis is required.

Department of Construction Engineering

Professor Emeriti: E. Fahmy

Professors: M. Abou-Zeid, A. S. Ezeldin, A. El-Gendy, O. Hosny, S. Khedr, K. Nassar, E. Yazeed (Chair)

Associate Professors: M. Abdallah, I. Abotaleb, A. Faheem

Assistant Professors: M. Darwish, M. Haggag

The Department of Construction Engineering offers one undergraduate degree: The Bachelor of Science in Construction Engineering and two graduate degrees Master of Science and Master of Engineering in Construction Engineering.

Mission

To provide high quality engineering education within a liberal arts context to students from Egypt and other countries. The aim is to prepare generations of engineers to excel as leaders in their professions. The pursuit of excellence is central to the Department's mission, maintaining the highest standards of academic achievement, professional behavior and ethical conduct.

Bachelor of Science

Construction Engineering, with concentrations in Construction Materials and Structures, Construction Management and Technology, and Infrastructure (B.S.)

Bachelor of Science in Construction Engineering

The construction industry is the largest industry in Egypt and much of the world. Construction engineering is a relatively new field that is designed to foster technological advances in the industry, to utilize modern design techniques, and to develop means to improve production, products, components and subsystems, and distribution and utilization of equipment. Construction engineering covers the basic civil engineering components such as structures, geotechnical, water resources, transportation, and environmental engineering. In addition, it covers, in detail, methods for the modeling of construction projects, numerical simulations, the evaluation of various construction strategies, and construction quality control. It deals with organizational planning, financial and human resources management, productivity

measurement, accounting, information systems, strategy and policy formation, contracting, and construction law.

The specific objectives of the Construction Engineering Program are that students within a few years of graduation will be able to: Effectively apply in a holistic manner the fundamentals of science and engineering to pursue successful careers in the construction engineering profession; Fully integrate the broad spectrum of construction engineering topics including its areas of concentration with other engineering disciplines; Cope with and improve upon the ever-evolving technologies of the construction industry; Communicate effectively, work independently and as a part of a team, and fit within multidisciplinary projects and multi-cultural environments; Recognize and consider the impact of engineering solutions in a global and societal context with the ability to understand and respond to other cultures; Engage in lifelong learning and develop their ability to pursue further studies; Develop creative solutions to engineering problems, provide effective leadership and demonstrate commitment to professional and ethical conduct.

Students have the choice of one of three concentration areas within construction engineering. These are: 1) Construction Materials and Structures; 2) Construction Management and Technology; and 3) Infrastructure. The Construction Materials and Structures concentration provides students with the ability to integrate advances in construction materials with advanced knowledge in structural design and mechanics. The Construction Management and Technology concentration provides students with the tools that would enable them to become effective construction managers, through gaining a deeper appreciation of the technology and management aspects involved, and a greater exposure to the various facets of the industry. The Infrastructure concentration better equips students for involvement in civil infrastructure projects, and enables them to contribute to consulting practice in highway engineering, environmental and water resources engineering. The concentration shall be indicated in the students' Diploma.

The Construction Engineering (B.S.) program is accredited by the Engineering Accreditation Commission of ABET under the commission's General Criteria and the Program Criteria for the Construction and Similarly Named Engineering Programs.

The Construction Engineering (B.S.) program has an equivalence from the Supreme Council of Universities in Egypt.

Declaration of the Construction Engineering Major

Students accepted at AUC may either get admitted into their preferred major at the time of admission to the university (declare their major at the gate) or get admitted to the university as

undeclared. Students who get admitted into a major will still have the opportunity to change their major later. Students must declare a major before completing 60 credit hours (before achieving a junior standing). Please check the eligibility criteria for declaring the Construction Engineering major below.

Eligibility Criteria for Construction Engineering Major Declaration at the Gate

The eligibility criteria for students who wish to apply to declare their major from the gate, with the declaration effective in the fall 2027 semester or the spring 2028 semester, can be accessed through the link below. Admission to the major is based on the program's student capacity.

To view the eligibility criteria, Click Here.

Eligibility Criteria for Construction Engineering Major Declaration from Within

The eligibility criteria for undeclared students (or students switching majors) who wish to apply to declare their major, with the declaration effective in the fall 2027 semester or the spring 2028 semester, can be accessed through the link below. Admission to the major is based on the program's student capacity.

To view the eligibility criteria, Click Here.

A total of 154 credits is required for the Bachelor of Science Degree in Construction Engineering.

Students should consult the course listings and their faculty advisor on a regular basis to ensure that prerequisites for engineering core, concentration and elective courses are met. A model course plan for the major is provided in the office of the Department of Construction Engineering.

Core Curriculum (33 credits)

The remaining 7 credit hours required to satisfy the core are fulfilled by the concentration Science/lab (4 credits), and the capstone Senior Projects I and II (CENG 4980 and CENG 4981) (3 credits).

Engineering Core Requirements (30 credits)

- CHEM 1005 - General Chemistry I (3 cr.)
- CHEM 1015 - General Chemistry I-Laboratory (1 cr.)
- CSCE 1001 - Fundamentals of Computing I (3 cr.)
- ENGR 3222 - Engineering Economy (3 cr.)
- MACT 1121 - Calculus I (3 cr.)

- MACT 1122 - Calculus II (3 cr.)
- MACT 2141 - Differential Equations (3 cr.)
- MACT 3224 - Probability and Statistics (3 cr.)
- PHYS 1011 - Physics 1: Classical Mechanics, Sound and Heat (3 cr.)
- PHYS 1012 - General Physics Laboratory I (1 cr.)
- PHYS 1021 - Physics 2: Electricity and Magnetism (3 cr.)
- PHYS 1022 - General Physics Laboratory II (1 cr.)

Concentration Requirements (82 credits)

- ARCH 3562 - Introduction to Architecture (3 cr.)
- CENG 1001 - Introduction to The Engineering Profession (1 cr.)
- CENG 1251 - Engineering Drawings (1 cr.)
- CENG 2111 - Engineering Mechanics - Statics and Dynamics (4 cr.)
- CENG 2211 - Strength and Testing of Materials for Construction (3+1 cr.)
- CENG 2251 - Drawing for Construction Engineering (1 cr.)
- CENG 2311 - Construction Surveying (3 cr.)
- CENG 2511 - Fluid Mechanics (3 cr.)
- CENG 2558 - Environmental Science Laboratory (1 cr.)
- CENG 3011 - Electrical and Mechanical Systems for Construction Engineering (4 cr.)
- CENG 3111 - Structural Analysis (4 cr.)
- CENG 3113 - Numerical Methods (3 cr.)
- CENG 3153 - Structural Design (4 cr.)
- CENG 3211 - Construction Materials and Quality Control I (4 cr.)
- CENG 3312 - Geology for Engineers (2 cr.)
- CENG 3511 - Fundamentals of Hydraulic Engineering (3 cr.)
- CENG 4158 - Structural Systems and Advanced Design (3 cr.)
- CENG 4252 - Methods and Equipment for Construction I (3 cr.)
- CENG 4253 - Methods and Equipment for Construction II (2 cr.)
- CENG 4313 - Soil Mechanics (4 cr.)
- CENG 4314 - Design and Construction of Foundations and Retaining Structures (3 cr.)
- CENG 4351 - Transportation Engineering (3 cr.)
- CENG 4410 - Introduction to Construction Management and Cost Estimating (3 cr.)
- CENG 4420 - Construction Project Specifications, Bids, and Contracts (3 cr.)
- CENG 4440 - Techniques of Planning, Scheduling and Control (3 cr.)
- CENG 4460 - Financial Management and Accounting for Construction (3 cr.)
- CENG 4551 - Environmental and Sanitary Engineering (3 cr.)
- CENG 4951 - Practical Training (1 cr.)

- CENG 4980 - Senior Project I (1 cr.)
- CENG 4981 - Senior Project II (2 cr.)

Concentration Electives (9 credits)

To complete the requirements of any of the following concentrations, students must complete a set of three courses as indicated in each concentration.

1. Construction Materials and Structures
2. Construction Management and Technology
3. Infrastructure

Student should also carry out the Senior Graduation Project in their selected concentration subfield.

Construction Materials and Structures

In this concentration, students have to complete 3 courses (9 credit hours) as follows:

1. Two courses (6 credit hours) of Group A,
2. One course (3 credit hours) from Group B

Group A

- CENG 4154 - Advanced Design of Reinforced and Prestressed Concrete Structures (3 cr.)
- CENG 4212 - Construction Materials and Quality Control II (3 cr.)

Group B

- CENG 4113 - Structural Mechanics (3 cr.)
- CENG 4155 - Steel and Concrete Bridges (3 cr.)
- CENG 4157 - Tall Buildings and Large Span Structures (3 cr.)
- CENG 4315 - Applications in Geotechnical Engineering (3 cr.)
- CENG 4911 - Selected Topics in Construction Engineering (3 cr.)
- CENG 4952 - Construction Intern Development (3 cr.)

Construction Management and Technology

Choose three of the following four courses:

- CENG 4430 - Risk Management and Bidding Strategies (3 cr.)
- CENG 4450 - Design, Modeling and Simulation of Construction Systems (3 cr.)
- CENG 4470 - Contract Administration (3 cr.)

- CENG 4952 - Construction Intern Development (3 cr.)

Infrastructure

Select three from the following courses:

- CENG 4315 - Applications in Geotechnical Engineering (3 cr.)
- CENG 4352 - Highway Facilities (3 cr.)
- CENG 4552 - Design of Water Resources Systems (3 cr.)
- CENG 4553 - Unit Operations in Environmental Engineering (3 cr.)
- CENG 4554 - Computer-aided design and construction of environmental and sanitary systems (3 cr.)
- CENG 4555 - Solid and Hazardous Wastes Engineering (3 cr.)
- CENG 4556 - Design of water and wastewater treatment plants (3 cr.)
- CENG 4557 - Functional design and construction of tunnels and bridges (3 cr.)
- CENG 4911 - Selected Topics in Construction Engineering (3 cr.)
- CENG 4952 - Construction Intern Development (3 cr.)

Dual Degree Option BSc/CENG-MPA

Students enrolled in the School of Science and Engineering may apply to complete the MPA on an accelerated basis in conjunction with completion of the BSc. in Construction Engineering. At present, this option is open only to students completing the BSc. in Construction Engineering. Students interested in this option should consult with their advisors during the Fall of their fourth year for potential admission to the program in their fifth year. The program is jointly administered by the Department of Public Policy and Administration in the School of Public Affairs and the School of Sciences and Engineering. Admission is based on the recommendation of the student's SSE advisor and review by the PPAD department. Students who wish to be admitted to this dual degree should have a minimum GPA of 2.75. The program prepares students for careers in the public sphere with the highest ethical standards, strong competencies in environmental analysis and management as well as public governance, excellent leadership and communication skills, a sound understanding of the use of evidence and analysis in public service settings, and a commitment to building a better future for the people of Egypt and the region. Students pursue careers in government, nonprofit organizations, international development agencies, academia, and the private sector.

Students electing the dual degree option usually begin taking graduate courses in their ninth semester and receive both the BSc. and the MPA upon the completion of their coursework and master's thesis, normally at the end of their 6th year.

Students who seek to register in this dual degree should complete four 4000-level CENG-required courses that address issues of management or public administration. Courses will need to be approved by the department prior to registration.

Additionally, students must take at least seven PPAD graduate courses and write a thesis (upon registering for the PPAD 5298 course); or take the non-thesis track of one additional course and a comprehensive examination administered by the Public Policy and Administration Department.

Complete all following five (5) courses:

- PPAD 5111 - Essentials of Public Policy and Administration (3 cr.)
- PPAD 5201 - Research Methods for Public Policy and Administration (3 cr.)
- PPAD 5221 - Strategic Management for Government and Nonprofit Organizations (3 cr.)
- PPAD 5222 - Fundamentals of Financial Planning and Management for Government and Nonprofit Organizations (3 cr.)
- PPAD 5224 - Human Resource Management for Government and Nonprofit Organizations (3 cr.)

Group 2: Complete one (1) of the following:

- PPAD 5211 - Qualitative Analysis for Policy and Administration (3 cr.)
- PPAD 5212 - Applied Quantitative Analysis (3 cr.)

Group 3: Complete one (1) of the following:

- PPAD 5113 - Organizational Behavior for Government and Nonprofit Management (3 cr.)
- PPAD 5124 - Leadership and Communication for Public Affairs (3 cr.)
- PPAD 5126 - Managing NGOs in Developing and Transitional Countries (3 cr.)
- PPAD 5132 - Social and Environmental Policy (3 cr.)
- PPAD 5174 - Internship in Public and Non-Profit Organizations (3 cr.)
- PPAD 5202 - Public Policy Theory & Practice (3 cr.)

Thesis Track

Students are required to write a thesis on some aspect of public administration relevant to their concentration. The preparation of the thesis and the thesis itself must comply with Departmental and AUC guidelines with regard to content, format, dates, and the review and supervision process. Students are responsible for familiarizing themselves with these guidelines and meeting formal deadlines. Students preparing the thesis normally develop a preliminary thesis proposal during PPAD 5201, a required core course, but may prepare an alternative thesis proposal if

desired. Once the proposal is approved, students should enroll in PPAD 5298, the thesis research seminar, in the first semester in which they are working on the research component and write-up of their thesis. Thereafter, if additional work is required to complete the thesis, students can enroll each semester in PPAD 5299.

Non-Thesis Track

Students who do not wish to undertake a thesis can choose to substitute the thesis with one additional PPAD 3 credit course, with the approval of the program director, and then sit for a comprehensive examination after completing all program course requirements. A comprehensive examination is usually offered in mid-December and mid-April. Students not registered for courses or thesis credit hours and planning to sit for the comprehensive examination in any semester must register for comprehensives (PPAD 5288) in that semester and pay tuition equivalent to one graduate credit hour.

Comprehensive examination may be repeated once. A student who fails the comprehensive examination a second time would be dismissed from the degree program after the end of the semester in which the examination was retaken.

Master of Engineering

Construction Engineering (M.Eng.)

The Master of Engineering Degree in Construction Engineering prepares graduate students for higher-level professional practice in local and international markets, whether in consulting practice, industry, or government. It is intended for construction engineers who wish to master the practice in their field of specialty

Program Objectives

The objectives of the Master of Engineering in Construction Engineering are for graduates to:

1. Demonstrate extensive, high-quality knowledge to modern computational and experimental methods in construction engineering.
2. Excel as leaders in the construction engineering profession, solve unstructured real-world engineering problems, and effectively manage teams.

Admission

Admission requirements are the same as those for the Master of Science Program.

Courses (33 credit hours)

Course work for the Master of Engineering degree requires the completion of a minimum of 33 credit hours as follows:

I- Construction Engineering Core (21 credit hours)

Students must complete 21 credits in graduate construction engineering courses.

II- Elective Courses (12 credit hours)

Students may elect to take four courses (12 credits). A minimum of two courses must be taken from offerings in engineering disciplines (including ENGR). No more than one 4000-level course, not in the student's undergraduate major may be taken for graduate credit, subject to approval of the advisor.

Master of Science

Construction Engineering (M.Sc.)

The Master of Science program in Construction Engineering is administered by the Construction Engineering Department. The Program offers high quality education that prepares students for advanced academic, research and professional careers in construction management & systems and structural engineering & construction materials.

Program Objectives

The objectives of the Master of Science in Construction Engineering are for graduates to:

1. Demonstrate extensive, high-quality knowledge to modern computational and experimental methods in construction engineering.
2. Utilize contemporary tools and techniques to conduct cutting-edge research to identify challenging problems and innovate effective solutions in construction engineering.
3. Excel as leaders in the construction engineering profession, solve unstructured real-world engineering problems, and effectively manage teams.

Admission

A candidate for the master's program in Construction Engineering must have a B.Sc. degree in civil, construction or architectural engineering. Students who graduated from other engineering departments or have some deficiency in their undergraduate education but are well-qualified in other respects may be admitted provisionally. The Department of Construction Engineering may prescribe a program of non-credit work to make up for the deficiency.

Courses (24 credit hours)

A minimum of eight courses (24 credit hours) is required. The courses are selected from the following categories:

I- Core Courses (6 credit hours)

All students select two out of the following four **ENGR core** courses:

- ENGR 5202 - Computational Methods in Engineering (3 cr.)
- ENGR 5204 - Engineering Statistics (3 cr.)
- ENGR 5210 - Experimental Methods in Engineering (3 cr.)
- ENGR 5240 - Engineering for a Sustainable Environment (3 cr.)

II- Concentration Courses (12 credit hours)

Students should select a minimum of four courses from any of the courses of the following sub-fields in Construction Engineering:

Construction Contracts

- CENG 5227 - Advanced Systems for Construction (3 cr.)
- CENG 5244 - Advanced Construction Management (3 cr.)
- CENG 5245 - Claims and Disputes in the Construction Industry (3 cr.)
- CENG 5247 - Resource Management and Delay Analysis for Construction Projects (3 cr.)
- CENG 5248 - Managing Multiple Projects (3 cr.)
- CENG 5250 - Principles of International Contracts and Arbitration (3 cr.)
- CENG 5292 - Advanced Topics in Construction Engineering (3 cr.)

Intelligent Construction

- CENG 5225 - Advanced Systems Analysis for Construction Engineering (3 cr.)
- CENG 5241 - Infrastructure Asset Management (3 cr.)
- CENG 5242 - Simulation Applications in Construction (3 cr.)
- CENG 5292 - Advanced Topics in Construction Engineering (3 cr.)

Structural Engineering and Construction Materials

- CENG 5121 - Assessment, Protection and Repair of Structures (3 cr.)
- CENG 5151 - Advanced Design of Steel and Composite Structures (3 cr.)
- CENG 5152 - Advanced Composite Materials in Infrastructure Applications (3 cr.)

- CENG 5155 - Pavement Management Systems (3 cr.)
- CENG 5210 - The Finite Element Method in Structural Engineering (3 cr.)
- CENG 5220 - Advanced Construction and Building Materials (3 cr.)
- CENG 5292 - Advanced Topics in Construction Engineering (3 cr.)

III- Elective Courses (6 credit hours)

A minimum of two courses are selected as electives. The courses are selected from a set of graduate courses in engineering, physical sciences, social sciences, management and other related graduate level courses subject to advisor and chair's approval. No more than one 4000-level course in engineering, computer science and other related areas, not in the student's undergraduate major, may be taken for graduate credit subject to advisor and chair's approval. One of the elective courses can be selected from the concentration courses.

Thesis (9 credit hours)

Graduate thesis work is a required part of the Master of Science in Construction Engineering degree program.

ENGR 5940 - Graduate Thesis Seminar (3 cr.)

Various research topics are discussed in ENGR 5940 which must be completed before registering for thesis credits.

CENG 5980 - Research Guidance Thesis (3 cr.)

A student must register for CENG 5980 after the completion of 15 credit hours. Students must register in CENG 5980 for at least two semesters for a total of six credit hours. After that, CENG 5980 is taken for one billable credit hour each semester until completion of the program requirements. Students will not be allowed to register for the second time in CENG 5980 unless they have defended their thesis proposal.

Department of Electronics and Communications Engineering

Professors: S. Abdel Azeem, A. Abou-Auf, H. Amer, M. Anis, Y. Gadallah, Y. Ismail (Chair), K. Seddik

Associate Professor: K. Banawan

Since the discovery of the electron in 1897, and the invention of the transistor in 1947, Electronics and Communications Engineering has continued to experience tremendous growth that has greatly impacted our lives. The present "information age," which features electronic data storage, retrieval, manipulation, and high-speed computing and communications, is based on high-density microelectronic (and soon nanoelectronic) solid-state integrated circuits. Revolution in wireless and optical communications technologies also necessitates fundamental understanding of the generation, propagation, and detection of the electromagnetic waves.

Mission

The goal of the Electronics and Communications Engineering program at AUC is to provide students with the highest quality education. The Electronics and Communications Engineering curriculum is designed to strike a balance between theoretical and laboratory experience and to impart fundamental and practical understanding of the principles required for a successful career in electronics and communications engineering. ECNG graduates will be prepared for a career in Egypt or abroad.

Bachelor of Science

Electronics and Communications Engineering (B.S.)

Bachelor of Science

To achieve the mission of Electronics and Communication Engineering requires a solid core of foundation courses in physics, mathematics, computer science, and general engineering, which is also essential for life-long learning. Concentration courses in Electronics and Communications Engineering (that integrate theory and laboratory wherever possible) cover electromagnetics, circuits, electronics, digital design, signal processing and communications among other topics. State-of-the-art electronics and communications engineering elective courses provide seniors and advanced undergraduates the opportunity to develop a thrust in advanced electronics, communication systems and computers.

The Electronics and Communications Engineering (B.S.) program is accredited by the Engineering Accreditation Commission of ABET under the commission's General Criteria and the Program Criteria for the Electrical, Computer, Communications, Telecommunication(s) and Similarly Named Engineering Programs.

The Electronics and Communications Engineering (B.S.) program has an equivalence from the Supreme Council of Universities in Egypt.

Program Objectives

The electronics and communications engineering program at AUC graduates an electronics and communications engineer who, within a few years of graduation, fulfills societal needs, with consideration for ethical and environmental issues and an appreciation of lifelong learning, in one or more of the following roles:

- A professional team member in a multidisciplinary environment, local or global.
- A leader in electronics and communications engineering through notable achievements, promotion and professional development.
- A successful member of an advanced academic or research organization.
- A successful entrepreneur.

Learning Outcomes

Completing the requirements of the Electronics and Communications Engineering Program at AUC, our students will develop:

- An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
- An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
- An ability to communicate effectively with a range of audiences.
- An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
- An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
- An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
- An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Declaration of the Electronics and Communications Engineering Major

Students accepted at AUC may either get admitted into their preferred major at the time of admission to the university (declare their major at the gate) or get admitted to the university as undeclared. Students who get admitted into a major will still have the opportunity to change their major later. Students must declare a major before completing 60 credit hours (before achieving a junior standing). Please check the eligibility criteria for declaring the Electronics and Communications Engineering major below.

Eligibility Criteria for Electronics and Communications Engineering Major Declaration at the Gate

The eligibility criteria for students who wish to apply to declare their major from the gate, with the declaration effective in the fall 2027 semester or the spring 2028 semester, can be accessed through the link below. Admission to the major is based on the program's student capacity.

To view the eligibility criteria, Click Here.

Eligibility Criteria for Electronics and Communications Engineering Major Declaration from Within

The eligibility criteria for undeclared students (or students switching majors) who wish to apply to declare their major, with the declaration effective in the fall 2027 semester or the spring 2028 semester, can be accessed through the link below. Admission to the major is based on the program's student capacity.

To view the eligibility criteria, Click Here.

A total of 147 credits are required for the bachelor's degree in Electronics and Communications Engineering.

Core Curriculum Requirements (33 credits)

The remaining 7 credit hours required to satisfy the core are fulfilled by the concentration Science/lab (4 cr.) and the capstone projects ECNG 4980 and ECNG 4981 (3 crs).

Engineering Core Requirements (38 credits)

- CHEM 1005 - General Chemistry I (3 cr.)
- CHEM 1015 - General Chemistry I-Laboratory (1 cr.)
- CSCE 1001 - Fundamentals of Computing I (3 cr.)
- ENGR 1005 - Descriptive Geometry and Engineering Drawing (2 cr.)
- ENGR 2105 - Engineering Mechanics (3 cr.)
- ENGR 3202 - Engineering Analysis and Computation I (3 cr.)
- MACT 1122 - Calculus II (3 cr.)
- MACT 2123 - Calculus III (3 cr.)
- MACT 2141 - Differential Equations (3 cr.)
- MACT 3224 - Probability and Statistics (3 cr.)
- PHYS 1011 - Physics 1: Classical Mechanics, Sound and Heat (3 cr.)

- PHYS 1012 - General Physics Laboratory I (1 cr.)
- PHYS 1021 - Physics 2: Electricity and Magnetism (3 cr.)
- PHYS 1022 - General Physics Laboratory II (1 cr.)
- PHYS 2221 - Waves and Optics (3 cr.)

Concentration Requirements (64 credits)

- ECNG 1501L - Exploring Electrical Engineering (1 cr.)
- ECNG 1502 - Programming Elements for Electrical Engineering (3 cr.)
- ECNG 2101 - Digital Logic Design (3 cr.)
- ECNG 2105 - Circuit Analysis I (3 cr.)
- ECNG 2106 - Circuit Analysis II (3 cr.)
- ECNG 2108L - Digital Logic Design Lab (1 cr.)
- ECNG 2109L - Circuit Analysis Lab (1 cr.)
- ECNG 3105 - Electronics I: Basic Electronic Devices & Circuits (3 cr.)
- ECNG 3106 - Electronics II: Analog Circuits (3 cr.)
- ECNG 3108 - VLSI Design (3 cr.)
- ECNG 3109L - Electronics Lab (1 cr.)
- ECNG 3201 - Signals and Systems (3 cr.)
- ECNG 3202 - Automatic Control Systems (3 cr.)
- ECNG 3401 - Electromagnetic Theory (3 cr.)
- ECNG 3503 - Microcontroller system design (3 cr.)
- ECNG 3509L - Microcontroller system design lab (1 cr.)
- ECNG 3601 - Power and Machines (3 cr.)
- ECNG 3801 - Technological Innovation and Product Development (3 cr.)
- ECNG 4301 - Fundamentals of Communications I (3 cr.)
- ECNG 4302 - Fundamentals of Communications II (3 cr.)
- ECNG 4306 - Computer Communication Networks (3 cr.)
- ECNG 4314L - Communications Lab (1 cr.)
- ECNG 4402 - Electromagnetic Waves (3 cr.)
- ECNG 4504 - Embedded Systems for Wireless Communications (3 cr.)
- ECNG 4950 - Industrial Internship (1 cr.)
- ECNG 4980 - Senior Project I (1 cr.)
- ECNG 4981 - Senior Project II (2 cr.)

Specialization Electives (12 credits)

Students are allowed at most one 5000-level electronics and communications engineering course to replace one of the electives.

- ECNG 4101 - Solid-State Devices (3 cr.)
- ECNG 4103 - Testing of Digital Circuits (3 cr.)
- ECNG 4104 - High Level Digital ASIC Design Using CAD (3 cr.)
- ECNG 4105 - Integrated Circuit Fabrication: Materials and Processes (3 cr.)
- ECNG 4304L - Photonics and Optical Communication Laboratory (1 cr.)
- ECNG 4308 - Telecommunications Systems (3 cr.)
- ECNG 4310 - Optical Communication Systems (3 cr.)
- ECNG 4312 - Mobile Communication Systems (3 cr.)
- ECNG 4407 - Microwave Systems (3 cr.)
- ECNG 4505 - Computer Architecture (3 cr.)
- ECNG 4506 - Industrial control systems (3 cr.)
- ECNG 4508L - Computer Architecture Lab (1 cr.)
- ECNG 4510 - Fundamentals of Wireless Sensor Networks (3 cr.)
- ECNG 4930 - Selected Topics in Electronics and Communications Engineering (3 cr.)

Other Special Courses

- ECNG 4920 - Special Problems in Electronics and Communications Engineering (1-3 cr.)

Minors

Electronics Minor

The Electronics Minor is coordinated by the Electronics and Communications Engineering department (ECNG).

The aim of the minor in electronics is to provide students typically majoring in physics, chemistry, computer science, mathematics, and engineering with a working knowledge of electronics. The hands-on laboratory instruction emphasized in the minor enables scientists and engineers to optimize their use of electronic equipment. The Electronics Minor cannot be taken by students majoring in ECNG.

Requirements 16 credit hours of electronics minor should cover:

Required courses

Students must take all the following required courses:

- ECNG 2101 - Digital Logic Design (3 cr.)
- ECNG 2108L - Digital Logic Design Lab (1 cr.)
- PHYS 2211 - Introduction to Electronics (3 cr.)

- PHYS 2213 - Electronics Lab (1 cr.)

Elective courses

Students must take a minimum of 8 credits from the following courses:

- CSCE 3301 - Computer Architecture (3 cr.)
- CSCE 3302 - Computer Architecture Lab (1 cr.)
- ECNG 4103 - Testing of Digital Circuits (3 cr.)
- PHYS 4224 - Photonics (3 cr.)
- PHYS 4225 - Photonics and Optical Communication Laboratory (1 cr.)
- PHYS 4234 - Solar Energy Lab (2 cr.)

Master of Engineering

Electronics and Communications Engineering (M.Eng.) with an Optional Concentration in Management of Technology

The Master of Engineering Degree in Electronics and Communications Engineering prepares students for higher-level professional practice in local and international markets, whether in private consulting practice, industry, or government activities. It is intended for electronics engineers who wish to master the practice in their field of specialty.

The optional concentration in management of technology is intended for electronics and communications engineers who wish to master the practice in their field of specialty, as well as understand the notion of technology and innovation as key to wealth creation, competitiveness and sustainable economic and social development.

Program Objectives

The objectives of the Master of Engineering Degree in Electronics and Communications Engineering are to enable graduates to:

- Drive innovation and effectively address complex challenges within their careers.
- Excel in their careers in specialized fields such as VLSI and nanosystems, communication systems, microwave and RF systems, or digital and network systems.
- Commit to lifelong learning by staying current with emerging technologies and trends in engineering, ensuring continued professional development and advancement in their careers.

In addition to the above objectives, the Master of Engineering Degree in Electronics and Communications Engineering with a Concentration in Management of Technology has the following extra objective, which is to enable graduates to:

- Manage and guide technology-based organizations in a changing environment and integrate technology and business strategies.

Admission

A candidate for the master's program in Electronics and Communications Engineering must have a degree in engineering. Students who have some deficiency in their undergraduate training but are well-qualified in other respects may be admitted provisionally. The Electronics and Communications Engineering Department may prescribe a program of noncredit work to make up for the deficiency.

Courses (33 Credit hours)

A minimum of 11 courses is required. The courses are selected from the following categories.

Core Courses (3 credit hours)

All students select one out of the following four ENGR core courses:

- ENGR 5202 - Computational Methods in Engineering (3 cr.)
- ENGR 5204 - Engineering Statistics (3 cr.)
- ENGR 5210 - Experimental Methods in Engineering (3 cr.)
- ENGR 5240 - Engineering for a Sustainable Environment (3 cr.)

Concentration Elective Courses (30 credit hours)

For the Master of Engineering Degree in Electronics and Communications Engineering, candidates must select at least eight courses from group A.

The remaining courses can be taken from group A or the options below:

- Up to two PhD ECNG courses (6000-level) to be taken for credit are allowed.

- Subject to the approval of the graduate director, the candidate is permitted to take six credit hours from the following two options:

1. One 4000-level or graduate-level course (3 credit hours) from outside the department and within the School of Sciences and Engineering;

2. Graduate Independent Study course (ECNG 5910) (1 to 3 credit hours).

However, the student may take a maximum of 3 hours of independent study and a maximum of one course (3 credit hours) from outside the ECNG department.

For the Master of Engineering Degree in Electronics and Communications Engineering with a Concentration in Management of Technology: 9 credits must be taken from group B, and the remaining courses must be taken from group A.

Group A: Elective Courses List

- ECNG 5210 - Advanced Solid-State Devices (3 cr.)
- ECNG 5214 - Advanced ASIC Design (3 cr.)
- ECNG 5216 - Analog Integrated Circuit Design (3 cr.)
- ECNG 5217 - Digital Integrated Circuit Design (3 cr.)
- ECNG 5218 - Advanced Integrated Circuit Design (3 cr.)
- ECNG 5219 - High-Performance Integrated Circuit Modeling (3 cr.)
- ECNG 5223 - Fault-Tolerant Computing and Reliability Modeling (3 cr.)
- ECNG 5225 - Digital Signal Processing (3 cr.)
- ECNG 5226 - Networked Control Systems Design & Applications (3 cr.)
- ECNG 5230 - Probability and Stochastic Processes with Applications (3 cr.)
- ECNG 5231 - Advanced Digital Communications and Emerging Technologies (3 cr.)
- ECNG 5233 - Wireless Communication Systems (3 cr.)
- ECNG 5234 - Enabling Technologies for High Date Rate Communications (3 cr.)
- ECNG 5236 - Information Theory and Coding (3 cr.)
- ECNG 5238 - Advanced Computer Networks (3 cr.)
- ECNG 5241 - Microwave Circuit Analysis and Design (3 cr.)
- ECNG 5247 - RF and Microwave Systems (3 cr.)
- ECNG 5248 - RF Integrated Circuit Design (3 cr.)
- ECNG 5249 - Antennas Design and Applications (3 cr.)
- ECNG 5930 - Advanced Topics in Electronics and Communications Engineering (3 cr.)

Group B: Management of Technology Elective Courses List

- BADM 5310 - Strategic Management (3 cr.)
- ECNG 5271 - New Product Design and Development (3 cr.)
- MGMT 5307 - Entrepreneurship and Innovation (3 cr.)
- MGMT 5308 - Strategic Management of Innovation (3 cr.)
- MGMT 5309 - Technology and Innovation Management (3 cr.)
- MOIS 5201 - Information and Communication Technology in Business (3 cr.)

Master of Science

Electronics and Communications Engineering (M.Sc.)

A candidate for the master's program in Electronics and Communications Engineering must have a degree in electrical or computer engineering or a related discipline. Students who have some deficiency in their undergraduate training but are well-qualified in other respects may be admitted provisionally. The Electronics and Communications Engineering Department may prescribe a program of noncredit work to make up for the deficiency.

Program Objectives

The program's specific objectives are to enable graduates to:

- Drive innovation and effectively address complex challenges within their careers.
- Excel in their careers in specialized fields such as VLSI and nanosystems, communication systems, microwave and RF systems, or digital and network systems.
- Pursue independent research, contributing to knowledge creation and application in their area of specialization.
- Prepare for advanced academic pursuits, such as PhD programs, by cultivating a strong foundation in research methodologies and academic rigor.
- Commit to lifelong learning by staying current with emerging technologies and trends in engineering, ensuring continued professional development and advancement in their careers.

Admission

A candidate for the master's program in Electronics and Communications Engineering must have a degree in engineering. Students who have some deficiency in their undergraduate training but are well-qualified in other respects may be admitted provisionally. The Electronics and Communications Engineering Department may prescribe a program of noncredit work to make up for the deficiency.

Courses (24 credit hours)

A minimum of eight courses (24 credit hours) is required.

The courses are selected from the following categories:

Core Courses (3 credit hours)

All students select <u>one</u> out of the following four ENGR core courses:

- ENGR 5202 - Computational Methods in Engineering (3 cr.)
- ENGR 5204 - Engineering Statistics (3 cr.)
- ENGR 5210 - Experimental Methods in Engineering (3 cr.)
- ENGR 5240 - Engineering for a Sustainable Environment (3 cr.)

Concentration Courses (21 credit hours)**

Candidates must select at least five courses out of the following ECNG course list:

- ECNG 5210 - Advanced Solid-State Devices (3 cr.)
- ECNG 5214 - Advanced ASIC Design (3 cr.)
- ECNG 5216 - Analog Integrated Circuit Design (3 cr.)
- ECNG 5217 - Digital Integrated Circuit Design (3 cr.)
- ECNG 5218 - Advanced Integrated Circuit Design (3 cr.)
- ECNG 5219 - High-Performance Integrated Circuit Modeling (3 cr.)
- ECNG 5223 - Fault-Tolerant Computing and Reliability Modeling (3 cr.)
- ECNG 5225 - Digital Signal Processing (3 cr.)
- ECNG 5226 - Networked Control Systems Design & Applications (3 cr.)
- ECNG 5230 - Probability and Stochastic Processes with Applications (3 cr.)
- ECNG 5231 - Advanced Digital Communications and Emerging Technologies (3 cr.)
- ECNG 5233 - Wireless Communication Systems (3 cr.)
- ECNG 5234 - Enabling Technologies for High Date Rate Communications (3 cr.)
- ECNG 5236 - Information Theory and Coding (3 cr.)
- ECNG 5238 - Advanced Computer Networks (3 cr.)
- ECNG 5241 - Microwave Circuit Analysis and Design (3 cr.)
- ECNG 5247 - RF and Microwave Systems (3 cr.)
- ECNG 5248 - RF Integrated Circuit Design (3 cr.)
- ECNG 5249 - Antennas Design and Applications (3 cr.)
- ECNG 5930 - Advanced Topics in Electronics and Communications Engineering (3 cr.)

****Note:**

- Up to two PhD ECNG courses (6000-level) to be taken for credit towards the above MS/ME degree are allowed.

- Subject to the approval of the advisor and the graduate director the candidate is permitted to take six credit hours from the following two options:

- One 4000-level or graduate-level course (3 credit hours) from outside the department and within the School of Sciences and Engineering;

- Graduate Independent Study course (ECNG 5910) (1 to 3 credit hours). However, the student may take a maximum of 3 hours of Graduate Independent Study, and a maximum of one course (3 credit hours) from outside the ECNG department.

Thesis (9 credit hours)

Graduate thesis work is a required part of the Master of Science in Electronics and Communications Engineering degree program.

ENGR 5940 - Graduate Thesis Seminar (3 cr.)

Various research topics are discussed in ENGR 5940, which must be completed before registering for thesis credits.

ECNG 5980 - Research Guidance Thesis (3 cr.)

A student must register for ECNG 5980 after the completion of 15 credit hours. Students must register in ECNG 5980 for at least two semesters for a total of six credit hours. After that, ECNG 5980 is taken for one billable credit hour each semester until completion of the program requirements. Students will not be allowed to register for the second time in ECNG 5980 unless they have defended their thesis proposal.

Department of Mathematics and Actuarial Science

Acting Chair: A. El-Kadi

Distinguished University Professor: A. Hadi

Professors: Z. Amin (Associate Provost for Assessment and Accreditation), M. Hebert (Emeritus), W. Lotfallah

Associate Professor: E. Farag

Assistant Professors: Y. Attia, R. Bairakdar, I. Müller, D. Siniora, R. Nabil, N. Youssef

Mathematics is the study of relationships among quantities, magnitudes and properties. It uses logical operations to find order within the appearance of chaos and to identify intrinsic relations and patterns among seemingly disparate questions and problems. The techniques of mathematics may be applied to a wide array of problems, such as the design and analysis of experiments, statistics and data analysis, mathematical modeling and operations research. As the "language" of science, it constitutes the theoretical background for computer science, engineering, and the natural sciences. The Department of Mathematics and Actuarial Science,

recognizing the central position of mathematics in traditional liberal studies, provides a rigorous foundation in pure as well as applied mathematics, equipping students for further study and preparing them to use their mathematical skills in many different employment arenas.

The Actuarial Science program is designed to produce graduates who have analytic, statistical, and computational skills, which allow them to solve industrial problems, predict the financial effects of uncertain future events, and carry out decision-making analyses. This program is appropriate for students who have a strong mathematical ability with an interest in applying their mathematical knowledge to insurance, finance, risk management, investment, and other areas of business.

Data science is the science of generalizable knowledge extraction from data for the purpose of informed or evidence-based decision-making. The role of the data scientist is increasingly important because we have more data available than ever before. The Data Science Program is one of the few four-year programs in the world that lead to a Bachelor of Science degree in data science. It is designed to produce graduates who have analytic, statistical, and computational skills, allowing them to solve problems in many fields of applications in business and government. This program is appropriate for students who have a strong mathematical ability.

The Department of Mathematics and Actuarial Science offers:

1. A Bachelor of Science degree in Actuarial Science
2. A Bachelor of Science degree in Data Science
3. A Bachelor of Science degree in Mathematics
4. A Minor in Applied Probability and Statistics
5. A Minor in Financial Mathematics
6. A Minor in Mathematics
7. A Statistics and Data Analysis Option

Bachelor of Science

Actuarial Science (B.S.)

Bachelor of Science in Actuarial Science

The life of nearly everyone is impacted by the work of actuarial experts. Actuarial experts apply mathematical models to improve financial decision-making by evaluating the financial implications of uncertain future events. See the Actuarial Science's website. for a more detailed description of the work of actuarial experts. The number of certified actuarial experts in Egypt is notoriously low, whereas the demand for actuarial experts is very high. One objective of the

program leading to the Bachelor of Science degree is to reduce the huge gap between supply and demand for actuarial experts in Egypt.

To be able to solve the problems of evaluating and measuring risk, an actuarial expert has to be trained in the disciplines of mathematics, probability, statistics, economics, finance, data science, and accounting. Consequently, the Actuarial Science Program cuts across the School of Sciences and Engineering and the School of Business.

What a major in Actuarial Science offers:

There are many reasons why a student might choose to pursue the B.Sc. program in Actuarial Science. The program prepares students for:

- Many positions within Egypt, where the demand for actuarial experts in insurance and reinsurance companies, actuarial consulting firms, banks, and other financial institutions, as well as government agencies like the Financial Regulatory Authority (FRA), and the Ministry of Finance greatly exceed their supply.
- A wide variety of jobs in Egypt, in multi-national companies, and international institutions abroad, where training in mathematics, probability, statistics, economics, finance, data science, and accounting, are essential.
- Completing the certification examinations offered by the Society of Actuaries (SOA), an important step toward actuarial certification and toward obtaining the actuarial license from the Financial Regulatory Authority (FRA).

The Actuarial Science (B.S.) program is accredited by the Applied and Natural Science Accreditation Commission of ABET, under the commission's General Criteria.

The Actuarial Science (B.S.) program has an equivalence from the Supreme Council of Universities in Egypt.

Declaration of the Actuarial Science Major

Students accepted at AUC may either get admitted into their preferred major at the time of admission to the university (declare their major at the gate) or get admitted to the university as undeclared. Students who get admitted into a major will still have the opportunity to change their major later. Students must declare a major before completing 60 credit hours (before achieving a junior standing). Please check the eligibility criteria for declaring the Actuarial Science major below.

Eligibility Criteria for Actuarial Science Major Declaration at the Gate

The eligibility criteria for students who wish to apply to declare their major from the gate, with the declaration effective in the fall 2027 semester or the spring 2028 semester, can be accessed through the link below. Admission to the major is based on the program's student capacity.

To view the eligibility criteria, Click Here.

Eligibility Criteria for Actuarial Science Major Declaration from Within

The eligibility criteria for undeclared students (or students switching majors) who wish to apply to declare their major, with the declaration effective in the fall 2027 semester or the spring 2028 semester, can be accessed through the link below. Admission to the major is based on the program's student capacity.

To view the eligibility criteria, Click Here.

A total of 130 credits is required for the bachelor's degree in actuarial science. Students may be exempted from the MACT 1121 - Calculus I (3 cr.) requirement based on high school certificate and score in mathematics or by passing a placement examination.

Core Curriculum (34 credits)

The remaining 6 credit hours required to satisfy the core are fulfilled by the concentration Science (3 crs) and the MACT 4980 - Senior Thesis (3 cr.) or MACT 4950 - Practical Internship (3 cr.)

Actuarial Science students must take 1 credit hour of Natural Science lab.

Concentration Requirements (51 credits)

- MACT 1121 - Calculus I (3 cr.)
- MACT 1122 - Calculus II (3 cr.)
- MACT 2123 - Calculus III (3 cr.)
- MACT 2132 - Linear Algebra (3 cr.)
- MACT 3211 - Applied Probability (3 cr.)
- MACT 3223 - Statistical Inference (3 cr.)
- MACT 3311 - Introduction to Financial Mathematics (3 cr.)
- MACT 4212 - Stochastic Processes (3 cr.)
- MACT 4231 - Applied Regression Methods (3 cr.)
- MACT 4232 - Analysis of Time Series Data (3 cr.)
- MACT 4233 - Applied Multivariate Analysis (3 cr.)

- MACT 4314 - Financial Modeling (3 cr.)
- MACT 4321 - Long-Term Actuarial Mathematics I (3 cr.)
- MACT 4322 - Long-Term Actuarial Mathematics II (3 cr.)
- MACT 4323 - Advanced Long Term Actuarial Mathematics (3 cr.)
- MACT 4331 - Short Term Actuarial Mathematics I (3 cr.)
- MACT 4332 - Short Term Actuarial Mathematics II (3 cr.)

Collateral Requirements (33 credits)

- ACCT 2001 - Financial Accounting (3 cr.)
- DSCI 1411 - Fundamentals of Data Science I (3 cr.)
- DSCI 2410 - Fundamentals of Data Science II (3 cr.)
- DSCI 2411 - Data Visualization (3 cr.)
- DSCI 3415 - Fundamentals of Machine Learning (3 cr.)
- ECON 2011 - Introduction to Microeconomics (3 cr.)
- ECON 2021 - Introduction to Macroeconomics (3 cr.)
- ECON 3011 - Intermediate Microeconomic Theory (3 cr.)
- ECON 3021 - Intermediate Macroeconomic Theory (3 cr.)
- FINC 2101 - Business Finance (3 cr.)
- FINC 3201 - Investment Analysis (3 cr.)

Culminating Project/Experience (3 credits)

MACT 4950 - Practical Internship (3 cr.)

or

MACT 4980 - Senior Thesis (3 cr.)

Actuarial Science Electives (9 credits)

Students choose courses from the following list in consultation with their adviser:

- ACCT 2002 - Managerial Accounting (3 cr.)
- BADM 2001 - Introduction to Business (3 cr.)
- CSCE 1001 - Fundamentals of Computing I (3 cr.)
- CSCE 1101 - Fundamentals of Computing II (3 cr.)
- CSCE 2501 - Fundamentals of Database Systems (3 cr.)
- CSCE 4501 - Big Data Systems (3 cr.)
- DSCI 4413 - Analysis of Categorical Data (3 cr.)

- ECON 3041 - Monetary Economics (3 cr.)
- ECON 3081 - Introduction to Econometrics (3 cr.)
- ECON 4031 - International Trade (3 cr.)
- FINC 3401 - Applied Banking (3 cr.) *
- FINC 3501 - International Finance (3 cr.)
- FINC 4204 - Portfolio Management (3 cr.)
- FINC 4301 - Corporate Finance (3 cr.) *
- MACT 2141 - Differential Equations (3 cr.)
- MACT 3143 - Numerical Methods (3 cr.)
- MACT 4910 - Guided Studies in Mathematics (1-3 cr.)
- MACT 4930 - Selected Topics in Mathematics (3 cr.)
- MACT 4931 - Selected Topics in Actuarial Science (3 cr.)
- MACT 4950 - Practical Internship (3 cr.) **
- MACT 4980 - Senior Thesis (3 cr.) **
- MACT 4990 - Enterprise Risk Management (3 cr.)
- MGMT 3201 - Management Fundamentals (3 cr.)
- MGMT 4202 - Managing the Human Capital (3 cr.)
- MKTG 2101 - Principles of Marketing (3 cr.)
- MKTG 3201 - Marketing Research (3 cr.)
- MOIS 2101 - Introduction to Information Systems/Technology (3 cr.)
- MOIS 3201 - Management Information Systems and Database Management (3 cr.)
- MOIS 3601 - Intelligent Decision Support Systems (3 cr.)

** Courses highly recommended as electives for students who wish to pursue a career in banking (commercial or investment)*

*** Courses do not double count towards culminating experience and actuarial electives.*

Data Science (B.Sc.)

The advances in communication and information technologies have given rise to the availability of huge datasets (Big Data). The datasets contain a wealth of knowledge. Data Science is the study of the generalizable extraction of knowledge from data. Being a data scientist requires an integrated skill set spanning mathematics, statistics, machine learning, databases, and programming languages as well as a good understanding of real-world problem formulation and effective solutions.

Data Science is a new interdisciplinary/multidisciplinary field. It is experiencing very rapid growth due to the availability of huge and complex real-world data. The demand for data science education has been increasing at very large rates. Accordingly, we need to move away from the traditional way of teaching statistics to meet the needs of the modern world for data scientists

who can use modern analytic techniques and tools for analyzing data, especially big data.

Data scientists need to be able to deal with the problems associated with the current and future types and amounts of data and to solve the kind of problems associated with them. Data scientists need to know how to use modern computer languages and/or packages such as R and Python.

The Data Science Program introduces students to this rapidly growing field and equip them with its basic principles and tools with the main objective of solving real-world problems. Students will learn concepts, techniques and tools they need to deal with various facets of data science practice, including data collection and integration, data editing, exploratory data analysis, predictive modeling, descriptive modeling, data product creation, evaluation, and effective communication. Working with data requires the mastery of a variety of skills and concepts, including many traditionally associated with the fields of probability, statistics, mathematics, and computational science.

The Data Science Program prepares students for positions within Egypt, where the demand for Data Scientists (for example, in banks, other financial institutions, and communication companies) greatly exceeds their supply. Also, there is a wide variety of jobs in Egypt, in multi-national companies, and international institutions abroad, where training in Data Science (mathematics, probability, statistics, computing science) is essential.

Declaration of the Data Science Major

Students accepted at AUC may either get admitted into their preferred major at the time of admission to the university (declare their major at the gate) or get admitted to the university as undeclared. Students who get admitted into a major will still have the opportunity to change their major later. Students must declare a major before completing 60 credit hours (before achieving a junior standing). Please check the eligibility criteria for declaring the Data Science major below.

Eligibility Criteria for Data Science Major Declaration at the Gate

The eligibility criteria for students who wish to apply to declare their major from the gate, with the declaration effective in the fall 2027 semester or the spring 2028 semester, can be accessed through the link below. Admission to the major is based on the program's student capacity.

To view the eligibility criteria, Click Here.

Eligibility Criteria for Data Science Major Declaration from Within

The eligibility criteria for undeclared students (or students switching majors) who wish to apply to declare their major, with the declaration effective in the fall 2027 semester or the spring 2028 semester, can be accessed through the link below. Admission to the major is based on the program's student capacity.

To view the eligibility criteria, Click Here.

A total of 135 credits is required for the bachelor's degree in Data Science. Students may be exempted from the MACT 1121 - Calculus I (3 cr.) requirement based on high school certificate and score in mathematics or by passing a placement examination.

Core Curriculum Requirements (34 credits)

The remaining 6 credit hours required to satisfy the core are fulfilled by the concentration Science (3 crs) and the DSCI 4416 - Capstone l (Data Science Senior Project l) (1 cr.) and DSCI 4417 - Capstone II (Data Science Project II) (2 cr.). Data Science students must take 1 credit hour of Natural Science lab.

Concentration Requirements (28 credits)

- DSCI 1411 - Fundamentals of Data Science I (3 cr.)
- DSCI 2410 - Fundamentals of Data Science II (3 cr.)
- DSCI 2411 - Data Visualization (3 cr.)
- DSCI 3411 - Fundamentals of Simulation (3 cr.)
- DSCI 3415 - Fundamentals of Machine Learning (3 cr.)
- DSCI 4411 - Fundamentals of Data Mining (3 cr.)
- DSCI 4412 - Introduction to Big Data Technologies (3 cr.)
- DSCI 4413 - Analysis of Categorical Data (3 cr.)
- DSCI 4416 - Capstone l (Data Science Senior Project l) (1 cr.)
- DSCI 4417 - Capstone II (Data Science Project II) (2 cr.)
- DSCI 4950 - Industrial Training (1 cr.)

Collateral Requirements (52 credits)

- CSCE 1001 - Fundamentals of Computing I (3 cr.)
- CSCE 1101 - Fundamentals of Computing II (3 cr.)
- CSCE 1102 - Fundamentals of Computing II Lab (1 cr.)
- CSCE 2200 - Applied Data Structures (3 cr.)
- CSCE 2501 - Fundamentals of Database Systems (3 cr.)

- CSCE 4604 - Advanced Machine Learning (3 cr.)
- MACT 1121 - Calculus I (3 cr.)
- MACT 1122 - Calculus II (3 cr.)
- MACT 2123 - Calculus III (3 cr.)
- MACT 2132 - Linear Algebra (3 cr.)
- MACT 2146 - Optimization I (3 cr.)
- MACT 3146 - Optimization II (3 cr.)
- MACT 3211 - Applied Probability (3 cr.)
- MACT 3223 - Statistical Inference (3 cr.)
- MACT 4212 - Stochastic Processes (3 cr.)
- MACT 4231 - Applied Regression Methods (3 cr.)
- MACT 4232 - Analysis of Time Series Data (3 cr.)
- MACT 4233 - Applied Multivariate Analysis (3 cr.)

Data Science Electives (21 credits)

- ACCT 2001 - Financial Accounting (3 cr.)
- BADM 2001 - Introduction to Business (3 cr.)
- BIOL 1011 - Introductory Biology I (3 cr. + 1 cr. lab)
- BIOL 2150 - Genetics (3 cr.)
- BIOL 3600 - Introduction to Bioinformatics (3 cr.)
- BIOL 3601 - Bioinformatics Tools and Techniques (3 cr.)
- BIOL 3750 - Introduction to Genomics (3 cr.)
- BIOL 4690 - Bioinformatics Capstone Seminar I (1 cr.)
- BIOL 4691 - Bioinformatics Capstone Seminar II (2 cr.)
- CSCE 2202 - Analysis and Design of Algorithms (3 cr.)
- CSCE 3601 - Fundamentals of Artificial Intelligence (3 cr.)
- CSCE 4501 - Big Data Systems (3 cr.)
- CSCE 4602 - Introduction to Artificial Neural Networks (3 cr.)
- CSCE 4603 - Fundamentals of Computer Vision (3 cr.)
- CSCE 4930 - Selected Topics in Computer Science and Engineering (1-3 cr.)
- DSCI 3413 - Biostatistics (3 cr.)
- DSCI 4930 - Selected Topics in Data Science (3 cr.)
- DSCI 4980 - Senior Thesis (3 cr.)
- ENGR 3222 - Engineering Economy (3 cr.)
- FINC 2101 - Business Finance (3 cr.)
- MACT 2131 - Discrete Mathematics (3 cr.)
- MACT 2141 - Differential Equations (3 cr.)

- MACT 3143 - Numerical Methods (3 cr.)
- MACT 3311 - Introduction to Financial Mathematics (3 cr.)
- MACT 4133 - Formal and Mathematical Logic (3 cr.)
- MACT 4135 - Graph Theory (3 cr.)
- MACT 4213 - Mathematical Modeling with Applications (3 cr.)
- MACT 4314 - Financial Modeling (3 cr.)
- MACT 4910 - Guided Studies in Mathematics (1-3 cr.)
- MKTG 2101 - Principles of Marketing (3 cr.)

Mathematics, with an Optional Specialization in Statistics and Data Analysis (B.S.)

Bachelor of Science in Mathematics

The Bachelor of Science degree in Mathematics develops a level of skill that will enable the student to apply his/her knowledge in industry or teaching and prepares the student for advanced study of mathematics and other fields.

Students may either choose to do a "Bachelor of Science in Mathematics", or a "Bachelor of Science in Mathematics, with a specialization in Statistics and Data Analysis". Please see the different requirements in the concentration electives.

More information on Mathematics as a professional activity and on career opportunities is available on the department webpage.

Declaration of the Mathematics Major

Students accepted at AUC may either get admitted into their preferred major at the time of admission to the university (declare their major at the gate) or get admitted to the university as undeclared. Students who get admitted into a major will still have the opportunity to change their major later. Students must declare a major before completing 60 credit hours (before achieving a junior standing). Please check the eligibility criteria for declaring the Mathematics major below.

Eligibility Criteria for Mathematics Major Declaration at the Gate

The eligibility criteria for students who wish to apply to declare their major from the gate, with the declaration effective in the fall 2027 semester or the spring 2028 semester, can be accessed through the link below. Admission to the major is based on the program's student capacity.

To view the eligibility criteria, Click Here.

Eligibility Criteria for Mathematics Major Declaration from Within

The eligibility criteria for undeclared students (or students switching majors) who wish to apply to declare their major, with the declaration effective in the fall 2027 semester or the spring 2028 semester, can be accessed through the link below. Admission to the major is based on the program's student capacity.

To view the eligibility criteria, Click Here.

A total of 130 credits is required for a bachelor's degree in mathematics. Students may be exempted from the MACT 1121 requirement based on high school certificate and score in mathematics or by passing a placement examination.

Students from most other majors in the School of Science and Engineering can complete the Mathematics major requirements with 15 to 25 additional credits. Contact the department for more details.

Core Curriculum (36 credits)

The science/ lab requirements of the core curriculum electives is satisfied by the collateral requirements of the major.

Main Concentration Requirements (33 credits)

Students need to take all of the following eleven 3-credit courses:

- CSCE 1001 - Fundamentals of Computing I (3 cr.)
- MACT 1121 - Calculus I (3 cr.)
- MACT 1122 - Calculus II (3 cr.)
- MACT 2123 - Calculus III (3 cr.)
- MACT 2131 - Discrete Mathematics (3 cr.)
- MACT 2132 - Linear Algebra (3 cr.)
- MACT 2141 - Differential Equations (3 cr.)
- MACT 4125 - Complex-Function Theory (3 cr.)
- MACT 4126 - Real Analysis I (3 cr.)
- MACT 4127 - Real Analysis II (3 cr.)
- MACT 4134 - Modern Algebra (3 cr.)

Collateral Requirements (13 Credits)

Students must take four 3-credit courses in addition to one lab.

- BIOL 1011 - Introductory Biology I (3 cr. + 1 cr. lab)
- BIOL 1012 - Introductory Biology II (3 cr. + 1 cr. lab)
- CHEM 1005 - General Chemistry I (3 cr.)
- CHEM 1006 - General Chemistry II (3 cr.)
- CHEM 1015 - General Chemistry I-Laboratory (1 cr.)
- CHEM 1016 - General Chemistry II-Laboratory (1 cr.)
- CSCE 1101 - Fundamentals of Computing II (3 cr.)
- CSCE 1102 - Fundamentals of Computing II Lab (1 cr.)
- CSCE 2202 - Analysis and Design of Algorithms (3 cr.)
- CSCE 2203 - Analysis and Design of Algorithms Lab (1 cr.)
- DSCI 1411 - Fundamentals of Data Science I (3 cr.)
- DSCI 2410 - Fundamentals of Data Science II (3 cr.)
- ENGR 2412 - General Programming Lab (1 cr.)
- PHYS 1011 - Physics 1: Classical Mechanics, Sound and Heat (3 cr.)
- PHYS 1012 - General Physics Laboratory I (1 cr.)
- PHYS 1021 - Physics 2: Electricity and Magnetism (3 cr.)
- PHYS 1022 - General Physics Laboratory II (1 cr.)

General Electives (18 credits)

Courses to be chosen in consultation with the advisor, excluding MACT 1111 and MACT 1112.

Concentration Electives (30 credits)

Please refer to Groups A, B, and C of courses described below.

Bachelor of Science in Mathematics:

Students must take 6 credits from Group A and a minimum of 12 credits from Group B. For the remaining 12 credits, students may choose to take courses from Groups B, C or any 3000-, 4000-, 51xx-, 52xx-level courses with high relevance to mathematics, in consultation with the advisor and the approval of the department chair, with the following two conditions:

- Due to their overlap, only one of the following courses can count toward the electives: MACT 3143, CENG 3113, ENGR 3202, PHYS 3241.
- Since Group A overlaps with Groups B and C, the 6 credits from Group A cannot double count with the remaining 24 credits.

Bachelor of Science in Mathematics with the Specialization in Statistics and Data Analysis:

Students must take all of the following courses:

- DSCI 4413 - Analysis of Categorical Data (3 cr.)
- MACT 3211 - Applied Probability (3 cr.)
- MACT 3223 - Statistical Inference (3 cr.)
- MACT 4212 - Stochastic Processes (3 cr.)
- MACT 4231 - Applied Regression Methods (3 cr.)
- MACT 4232 - Analysis of Time Series Data (3 cr.)
- MACT 4233 - Applied Multivariate Analysis (3 cr.)
- Three other MACT or DSCI courses (9 cr.) from Groups B or C that are not included in the list above, or any 3000-, 4000-, 51xx-, 52xx-level courses with high relevance to mathematics, in consultation with the advisor and the approval of the department chair, with the following condition:
- Due to their overlap, only one of the following courses can count toward the electives: MACT 3143, CENG 3113, ENGR 3202, PHYS 3241.

Group A (Probability and Statistics)

- MACT 3211 - Applied Probability (3 cr.) and MACT 3223 - Statistical Inference (3 cr.)
or
- MACT 3224 - Probability and Statistics (3 cr.) and one course from the following:
- DSCI 4413 - Analysis of Categorical Data (3 cr.)
- MACT 4212 - Stochastic Processes (3 cr.)
- MACT 4231 - Applied Regression Methods (3 cr.)
- MACT 4233 - Applied Multivariate Analysis (3 cr.)

Group B (Mathematics Electives)

- MACT 2146 - Optimization I (3 cr.)
- MACT 3142 - Introduction to PDE and Boundary-Value Problems (3 cr.)
- MACT 3143 - Numerical Methods (3 cr.)
- MACT 3146 - Optimization II (3 cr.)
- MACT 3311 - Introduction to Financial Mathematics (3 cr.)
- MACT 3940 - Seminar in Mathematics (1 cr.)
- MACT 4133 - Formal and Mathematical Logic (3 cr.)
- MACT 4135 - Graph Theory (3 cr.)
- MACT 4212 - Stochastic Processes (3 cr.)
- MACT 4213 - Mathematical Modeling with Applications (3 cr.)
- MACT 4231 - Applied Regression Methods (3 cr.)
- MACT 4232 - Analysis of Time Series Data (3 cr.)
- MACT 4233 - Applied Multivariate Analysis (3 cr.)

- MACT 4314 - Financial Modeling (3 cr.)
- MACT 4321 - Long-Term Actuarial Mathematics I (3 cr.)
- MACT 4322 - Long-Term Actuarial Mathematics II (3 cr.)
- MACT 4331 - Short Term Actuarial Mathematics I (3 cr.)
- MACT 4332 - Short Term Actuarial Mathematics II (3 cr.)
- MACT 4910 - Guided Studies in Mathematics (1-3 cr.)
- MACT 4930 - Selected Topics in Mathematics (3 cr.)
- MACT 4931 - Selected Topics in Actuarial Science (3 cr.)
- MACT 4950 - Practical Internship (3 cr.)
- MACT 4980 - Senior Thesis (3 cr.)
- MACT 4990 - Enterprise Risk Management (3 cr.)

Group C (Mathematical Sciences Electives)

The following is a list of courses from engineering and the sciences that have the necessary relevant amount of mathematics:

- CENG 3113 - Numerical Methods (3 cr.)
- CSCE 3611 - Digital Signal Processing (3 cr.)
- CSCE 4201 - Theory of Computing (3 cr.)
- CSCE 4602 - Introduction to Artificial Neural Networks (3 cr.)
- CSCE 4604 - Advanced Machine Learning (3 cr.)
- CSCE 5221 - Algorithms and Complexity Theory (3 cr.)
- CSCE 5269 - Pattern Analysis (3 cr.)
- DSCI 3415 - Fundamentals of Machine Learning (3 cr.)
- DSCI 4411 - Fundamentals of Data Mining (3 cr.)
- DSCI 4412 - Introduction to Big Data Technologies (3 cr.)
- DSCI 4413 - Analysis of Categorical Data (3 cr.)
- DSCI 4415 - Advanced Machine Learning (3 cr.)
- ECNG 3201 - Signals and Systems (3 cr.)
- ECNG 3202 - Automatic Control Systems (3 cr.)
- ECNG 3401 - Electromagnetic Theory (3 cr.)
- ECNG 4301 - Fundamentals of Communications I (3 cr.)
- ECNG 4302 - Fundamentals of Communications II (3 cr.)
- ECNG 4402 - Electromagnetic Waves (3 cr.)
- ENGR 3202 - Engineering Analysis and Computation I (3 cr.)
- MENG 3705 - System Dynamics (3 cr.)
- MENG 4440 - Engineering Operations Research (3 cr.)
- MENG 4606 - Heat Transfer (4 cr.)

- MENG 4756 - Automatic Control Systems (3 cr.)
- MENG 4757 - Robotics: Design, Analysis and Control (3 cr.)
- PHYS 3013 - Theoretical Mechanics (3 cr.)
- PHYS 3023 - Electromagnetic Theory (3 cr.)
- PHYS 3241 - Computational Methods in Physics (3 cr. + 1 cr.)
- PHYS 4042 - Quantum Mechanics I (3 cr.)
- PHYS 4071 - General Relativity and Cosmology (3 cr.)
- PHYS 5142 - Computational Physics (3 cr.)

Minors

Applied Probability and Statistics Minor

Applied Probability and Statistics are essential tools for analyzing data in various fields. A minor in Applied Probability and Statistics will prepare students and enhance their abilities to understand and solve problems in their own major fields. The minor in Applied Probability and Statistics is also designed to meet a demand by industry and governmental agencies for personnel who are able to utilize appropriate statistical and other quantitative methods to solve problems as diverse as quality control and population dynamics and to facilitate wise decision making in the face of uncertainty. This minor is not open for Actuarial Science Students.

Requirements (15 credits):

- MACT 2222 - Statistics for Business (3 cr.)
- MACT 4231 - Applied Regression Methods (3 cr.)

and either

- MACT 3211 - Applied Probability (3 cr.)
  and
- MACT 3223 - Statistical Inference (3 cr.)

or

- MACT 3224 - Probability and Statistics (3 cr.)

In addition to 3-6 credits from:

- MACT 4212 - Stochastic Processes (3 cr.)
- MACT 4232 - Analysis of Time Series Data (3 cr.)
- MACT 4233 - Applied Multivariate Analysis (3 cr.)

Financial Mathematics Minor

This interdisciplinary Minor in Financial Mathematics program allows non-mathematics majors to obtain a basic understanding of how modern mathematics is being applied across a wide spectrum of the financial service industry - investment banks, hedge funds, consulting firms, investment firms, insurance companies, commercial banks, brokerage houses and other corporations. This minor is not awarded with the majors in Mathematics or Actuarial Science.

Course Structure

To be awarded a minor in Financial Mathematics, a student must successfully complete 15 credits:

Students are reminded to work out a feasible study plan for the 5 courses in this minor requirement.

- FINC 3201 - Investment Analysis (3 cr.)
- MACT 1122 - Calculus II (3 cr.)
- MACT 2123 - Calculus III (3 cr.)
- MACT 3311 - Introduction to Financial Mathematics (3 cr.)
- MACT 4314 - Financial Modeling (3 cr.)

Mathematics Minor

The minor in Mathematics will acquaint non-mathematics majors with the diversity of the field and enhance the student's ability to formulate and solve problems in other disciplines.

Requirements (15 credits)

Students majoring in the Science & Engineering School need to complete all of the following:

A. MACT 2131 - Discrete Mathematics (3 cr.)

B. MACT 2132 - Linear Algebra (3 cr.)

C.Two courses from the following set of courses:

- MACT 2141 - Differential Equations (3 cr.)
- All 3000 - 4000 level MACT courses

D. One course from the following list of courses:

- MACT 4126 - Real Analysis I (3 cr.)

- MACT 4133 - Formal and Mathematical Logic (3 cr.)
- MACT 4134 - Modern Algebra (3 cr.)
- MACT 4135 - Graph Theory (3 cr.)
- MACT 4930 - Selected Topics in Mathematics (3 cr.)

Students majoring in Economics need to complete all of the following:

- ECON 3061 - Mathematics for Economists II (3 cr.)

- MACT 2132 - Linear Algebra (3 cr.)

- MACT 2222 - Statistics for Business (3 cr.)

- Two courses from the following set of courses:

  - ECON 4061 - Mathematical Economics (3 cr.)
  - All other 3000 - 4000 level MACT courses

All other students need to complete all of the following:

- MACT 1121 - Calculus I (3 cr.)

- MACT 2222 - Statistics for Business (3 cr.)

- Three other MACT courses (excluding MACT 1111, MACT 1112 and MACT 1930)

Department of Mechanical Engineering

Professors: S. Alagha, M. Arafa, K. Elkhodary, M. El Morsi (Chair), A. Esawi, L. Gaafar (SSE Dean), M. Habib, A. Nassef, H. Salem, M. Serry, T. Shawki

Associate Professors: O. Abdelaziz, M. Badran, S. Fahmy, M. Fawzy, M. Youssef

Mechanical Engineering involves the application of scientific knowledge for the design and manufacturing of devices and mechanical systems that use or transfer mechanical and thermal energies. The mechanical engineer should strive both to serve the needs of the society without unduly damaging the environment, and to produce devices and systems that use energy and material resources efficiently.

For additional information, go to: https://sse.aucegypt.edu/academics/departments/mechanical-engineering

Bachelor of Science

Mechanical Engineering, with concentrations in Energy Systems, Design, Industrial, Materials and Manufacturing, and Mechatronics (B.S.)

Bachelor of Science

The educational objectives of the mechanical engineering program are to graduate mechanical engineers who can: practice professionally as team members or leaders in both local and global, multidisciplinary environments; advance their careers in mechanical engineering or other fields through promotions, positions of increasing responsibilities or professional certification; contribute to the welfare of the society, and respond to its needs with consideration of ethical and environmental issues; engage in advanced academic and research careers; and pursue entrepreneurial endeavors.

Students are offered mechanical engineering electives concentrated in five areas: The Energy Systems concentration provides the engineering background for optimum use of energy resources; calculation of energy loads; design, selection and integration of conventional and non-conventional energy systems and components. The Design concentration integrates elements of the mechanical engineering program and utilizes modern computer methods to enable the engineer to model, analyze and design mechanical components and systems. The Industrial concentration enables the engineer to analyze, design, integrate, automate and manage industrial systems. The Materials and Manufacturing concentration focuses on ways of controlling material composition, treatment, and manufacturing in order to meet design requirements, and achieve desired levels of performance. The Mechatronics concentration focuses on computer programming, automatic control, sensor technology and, microcontrollers, robotics, integrated electromechanical design as well as automation techniques.

The Mechanical Engineering (B.S.) program is accredited by the Engineering Accreditation Commission of ABET under the commission's General Criteria and the Program Criteria for the Mechanical and Similarly Named Engineering Programs.

The Mechanical Engineering (B.S.) program has an equivalence from the Supreme Council of Universities in Egypt.

Declaration of the Mechanical Engineering Major

Students accepted at AUC may either get admitted into their preferred major at the time of admission to the university (declare their major at the gate) or get admitted to the university as undeclared. Students who get admitted into a major will still have the opportunity to change their major later. Students must declare a major before completing 60 credit hours (before achieving a junior standing). Please check the eligibility criteria for declaring the Mechanical Engineering major below.

Eligibility Criteria for Mechanical Engineering Major Declaration at the Gate

The eligibility criteria for students who wish to apply to declare their major from the gate, with the declaration effective in the fall 2027 semester or the spring 2028 semester, can be accessed through the link below. Admission to the major is based on the program's student capacity.

To view the eligibility criteria, Click Here.

Eligibility Criteria for Mechanical Engineering Major Declaration from Within

The eligibility criteria for undeclared students (or students switching majors) who wish to apply to declare their major, with the declaration effective in the fall 2027 semester or the spring 2028 semester, can be accessed through the link below. Admission to the major is based on the program's student capacity.

To view the eligibility criteria, Click Here.

A student should declare his/her concentration (s) after completing 77 credit hours and before completing 120 credit hours.

A total of 147 credits is required for the bachelor's degree in mechanical engineering.

Students should consult the course listings and their faculty advisor on a regular basis to ensure that prerequisites for engineering core, concentration and elective courses are met. A model course plan for the Major is provided by the Department.

Core Curriculum (33 credits)

The remaining 7 credit hours required to satisfy the core are fulfilled by the concentration Science/lab (4 cr.) and the capstone projects MENG 4980 and MENG 4981 (3 cr.)

Engineering Core Requirements (45 credits)

- CHEM 1005 - General Chemistry I (3 cr.)
- CHEM 1015 - General Chemistry I-Laboratory (1 cr.)
- ENGR 1005 - Descriptive Geometry and Engineering Drawing (2 cr.)
- ENGR 2102 - Engineering Mechanics I (Statics) (3 cr.)
- ENGR 2104 - Engineering Mechanics II (Dynamics) (3 cr.)
- ENGR 3202 - Engineering Analysis and Computation I (3 cr.)
- ENGR 3212 - General Electrical Engineering (3 cr.)
- ENGR 3222 - Engineering Economy (3 cr.)

- MACT 1122 - Calculus II (3 cr.)
- MACT 2123 - Calculus III (3 cr.)
- MACT 2141 - Differential Equations (3 cr.)
- MACT 3224 - Probability and Statistics (3 cr.)
- MENG 2202 - Introduction to Computational Thinking and Programming for Engineers Lab (1 cr.)
- MENG 2601 - Fluid Mechanics Fundamentals (3 cr.)
- PHYS 1011 - Physics 1: Classical Mechanics, Sound and Heat (3 cr.)
- PHYS 1012 - General Physics Laboratory I (1 cr.)
- PHYS 1021 - Physics 2: Electricity and Magnetism (3 cr.)
- PHYS 1022 - General Physics Laboratory II (1 cr.)

Concentration Requirements (54 credits)

The student is required to spend a minimum of eight weeks in industrial training in Egypt or abroad. A minimum of 67 Credits is required prior to the industrial training.

- MENG 2112 - Strength of Materials (3 cr.)
- MENG 2505 - Mechanical Engineering Drawing (1 cr.)
- MENG 3207 - Engineering Materials (3 cr.)
- MENG 3209 - Fundamentals of Manufacturing Processes (3 cr.)
- MENG 3217 - Mechanical and Structural Behavior of Engineering Materials Lab (1 cr.)
- MENG 3402 - Quality and Process Control (3 cr.)
- MENG 3446 - Engineering and Project Management (2 cr.)
- MENG 3502 - Mechanical Systems (3 cr.)
- MENG 3505 - Mechanics of Materials (3 cr.)
- MENG 3506 - Mechanical Design I (3 cr.)
- MENG 3601 - Fundamentals of Thermodynamics (3 cr.)
- MENG 3602 - Applied Fluid Mechanics (3 cr.)
- MENG 3605 - Applied Thermodynamics (3 cr.)
- MENG 3705 - System Dynamics (3 cr.)
- MENG 4208 - Selection of Materials and Processes for Design (3 cr.)
- MENG 4507 - Mechanical Design II (3 cr.)
- MENG 4606 - Heat Transfer (4 cr.)
- MENG 4950 - Industrial Training (1 cr.)
- MENG 4980 - Senior Project I (1 cr.)
- MENG 4981 - Senior Project II (2 cr.)
- PHYS 2216 - Fundamentals of Circuits and Electronics (2 cr.)
- PHYS 2217 - Fundamentals of Circuits and Electronics Lab (1 cr.)

Concentration Electives (15 credit hours)

Courses must be selected from at least two of the five available concentrations of courses. A minimum of nine credits must be taken from one concentration and at least one course from another concentration as follows:

Energy Systems Concentration

A minimum of six credits from Group A courses, which should include MENG 4663, and either MENG 4662 or MENG 5168. The remaining three credits should be selected from either group A or Group B.

Group A

- MENG 4662 - Power Plant Technology (3 cr.)
- MENG 4663 - Design of Renewable Energy Systems (3 cr.)
- MENG 5168 - Nuclear Power Plant Engineering (3 cr.)

Group B

- MENG 4661 - Turbo-Machinery (3 cr.)
- MENG 4665 - Internal Combustion Engines (3 cr.)
- MENG 4666 - Design of Heating, Ventilation, and Air Conditioning Systems (3 cr.)
- MENG 4667 - Refrigeration and Air-conditioning (3 cr.)
- MENG 4936 - Selected Topics in Power Engineering (3 cr.)

Design Concentration

A minimum of six credits from courses in group A of the Design concentration and the remaining three credits from courses in either group of A or B of the concentration.

Group A

- MENG 4551 - Design for Additive Manufacturing (3 cr.)
- MENG 4553 - Finite Element Method and Applications in Design (3 cr.)
- MENG 4555 - Applied Vibration Measurements, Analysis and Control (3 cr.)
- MENG 4756 - Automatic Control Systems (3 cr.)

Group B

- MENG 4227 - Failure of Mechanical Components (3 cr.)

- MENG 4239 - Advanced Manufacturing Processes (3 cr.)
- MENG 4558 - Integrated Design (3 cr.)
- MENG 4565 - Design of Engineering Systems (3 cr.)
- MENG 4757 - Robotics: Design, Analysis and Control (3 cr.)
- MENG 4931 - Selected Topics in Design (3 cr.)

Industrial Concentration

A minimum of six credits from courses in group A of the Industrial Engineering concentration and the remaining three credits from courses in either group of A or B of the concentration.

Group A

- MENG 4440 - Engineering Operations Research (3 cr.)
- MENG 4444 - Work Analysis and Design (3 cr.)
- MENG 4445 - Production and Inventory Control (3 cr.)

Group B

- MENG 4441 - Decision Support in Engineering Systems (3 cr.)
- MENG 4442 - Reliability Engineering and Risk Analysis (3 cr.)
- MENG 4443 - Systems Simulation (3 cr.)
- MENG 4448 - Facilities Planning (3 cr.)
- MENG 4449 - Maintenance Management Systems (3 cr.)
- MENG 4477 - Manufacturing System Automation (3 cr.)
- MENG 4930 - Selected Topics in Industrial Engineering (3 cr.)

Materials and Manufacturing Concentration

A minimum of six credits from courses in group A of the Materials and Manufacturing concentration and the remaining three credits from courses in either group of A or B of the concentration.

Group A

- MENG 4221 - Composites: Design, Materials, and Manufacturing (3 cr.)
- MENG 4229 - Nanostructured Materials (3 cr.)
- MENG 4551 - Design for Additive Manufacturing (3 cr.)

Group B

- MENG 4226 - Metals, Alloys and Composites (3 cr.)
- MENG 4227 - Failure of Mechanical Components (3 cr.)
- MENG 4232 - Materials, Processing, and Design (3 cr.)
- MENG 4239 - Advanced Manufacturing Processes (3 cr.)
- MENG 4932 - Selected Topics in Materials and Manufacturing (3 cr.)

Mechatronics Concentration

A minimum of six credits from courses in group A of the Mechatronics concentration and the remaining three credits from courses in either group of A or B of the concentration.

Group A

- MENG 4756 - Automatic Control Systems (3 cr.)
- MENG 4778 - Microcontrollers and Mechatronics Systems (3 cr.)
- MENG 4779 - Integrated Design of Electromechanical Systems (3 cr.)

Group B

- MENG 4239 - Advanced Manufacturing Processes (3 cr.)
- MENG 4477 - Manufacturing System Automation (3 cr.)
- MENG 4757 - Robotics: Design, Analysis and Control (3 cr.)
- MENG 4937 - Selected Topics in Mechatronics (3 cr.)

Notes

Pending approval of the department and relevance of the topic, only one of the concentration electives may be substituted for by a MENG 4930, MENG 4931, MENG 4932, MENG 4936 or MENG 4937 courses.

Students opting for more than one concentration will take a minimum of eighteen credits, such that the minimum requirements of each area of concentration are satisfied. Common courses may be double-counted.

Minors

Mechatronics Minor

Coordinator and Minor Advisor: M. Habib

The minor in Mechatronics provides students with broad understanding of the latest developments of synergized interdisciplinary knowledge, design principles, technologies, and practical skills within the growing field of Mechatronics. It serves students in all majors. The Minor in Mechatronics as a unifying interdisciplinary field enables students with such knowledge and practical experience to develop new and innovative solutions across disciplines for highly emerging technical challenges. It is envisaged that the Minor would attract students to be part of the new era of industrialization, widen their views and understanding, develop creative thinking, and to enable students to look forward to a high quality job satisfaction with enhanced career prospects.

The minor in Mechatronics requires to complete (15) credit-hour courses. Students can select their (15) credit-hour from two pools of courses as follow:

I. The first pool of courses is under MENG courses.

It is required to select a minimum of (9) credit-hour from the following list:

Minor core: students must complete the following two courses

- MENG 4757 - Robotics: Design, Analysis and Control (3 cr.)
- MENG 4779 - Integrated Design of Electromechanical Systems (3 cr.)

Minor electives: a minimum of 3 credit-hour must be selected from the minor electives

- MENG 3705 - System Dynamics (3 cr.)
- MENG 4756 - Automatic Control Systems (3 cr.)
- MENG 4778 - Microcontrollers and Mechatronics Systems (3 cr.)
- MENG 4937 - Selected Topics in Mechatronics (3 cr.)

II. The second pool of courses is under other SSE departments.

A maximum of (6) credit-hour to be selected from the following list:

For students from ECNG

- ECNG 3202 - Automatic Control Systems (3 cr.)
- ECNG 3503 - Microcontroller system design (3 cr.)

For Students from CSCE

- CSCE 4602 - Introduction to Artificial Neural Networks (3 cr.)

For students from PHYS

- PHYS 4042 - Quantum Mechanics I (3 cr.)

For students from PENG

- PENG 4223 - Reservoir Simulation and Modeling (2 cr. + 1 cr.)

Master of Engineering

Mechanical Engineering (M.Eng.)

The Master of Engineering in Mechanical Engineering at AUC prepares students for higher level professional practice in local and international markets.

Program Objectives

The objectives of the Master of Engineering Degree are to provide the graduates of the program with:

- A broad knowledge of modern computational and experimental methods in engineering.
- Detailed knowledge in engineering design, materials and manufacturing, industrial engineering, power and mechatronics.
- Awareness of the local and global context in which mechanical engineering is practiced, locally and globally, including economic and business practices, societal needs, and considerations of public health, safety, environment, culture and ethics.
- An ability to solve unstructured engineering problems, think critically, function well in a team, and communicate effectively.
- A high standard of written and oral communication on technical matters.

Admission

Admission requirements are the same as those for the Master of Science Program.

Courses (33 credit hours)

Course work for the Master of Engineering degree requires the completion of a minimum of 33 credit hours as follows:

I- Core Courses (9 Credits)

Students must complete two courses from Group A and one course from Group B:

Group A

- ENGR 5202 - Computational Methods in Engineering (3 cr.)
- ENGR 5204 - Engineering Statistics (3 cr.)
- ENGR 5210 - Experimental Methods in Engineering (3 cr.)

Group B

- MENG 5222 - Materials in Design and Manufacturing (3 cr.)
- MENG 5251 - Engineering Systems Analysis and Design (3 cr.)
- MENG 5266 - Solar Radiation and Energy Conversion (3 cr.)
- MENG 5270 - Applied Control, Vibration and Instrumentations (3 cr.)

II- Mechanical Engineering Technical Elective Courses (9 Credits)

Students should select a minimum of three courses from the following elective courses:

- MENG 5168 - Nuclear Power Plant Engineering (3 cr.)
- MENG 5227 - Composite Materials: Mechanics, Manufacturing, and Design (3 cr.)
- MENG 5228 - Advanced Testing and Characterization Techniques (3 cr.)
- MENG 5229 - Failure Analysis and Prevention (3 cr.)
- MENG 5232 - Simulation and Modeling for Nanoscale Materials and Systems (3 cr.)
- MENG 5234 - Materials for Energy Conversion and Storage (3 cr.)
- MENG 5235 - Biomaterials (3 cr.)
- MENG 5241 - Integrated Manufacturing Systems (3 cr.)
- MENG 5242 - Total Quality Management (3 cr.)
- MENG 5243 - Systems Modeling and Optimization (3 cr.)
- MENG 5245 - Production Systems Design (3 cr.)
- MENG 5253 - Advanced Computer Aided Design (3 cr.)
- MENG 5255 - Analysis and Design of Dynamic Systems (3 cr.)
- MENG 5257 - Engineering Design Methodologies (3 cr.)
- MENG 5258 - Applied Finite Element Analysis for Engineers (3 cr.)
- MENG 5265 - CFD and Turbulence Modeling (3 cr.)
- MENG 5271 - Robotics: Kinematics, Dynamics and Control (3 cr.)
- MENG 5272 - Embedded Real Time Systems (3 cr.)
- MENG 5273 - Modern Control Design (3 cr.)
- MENG 5274 - Autonomous Robotics: Modeling, Navigation and Control (3 cr.)
- MENG 5910 - Independent Study in Engineering (3 cr.)
- MENG 5930 - Advanced Topics in Engineering (3 cr.)
- MENG 6255 - Continuum Mechanics (3 cr.)

III- General Electives Courses (12 credit hours)

Students may elect to take four courses (12 credits). A minimum of two courses must be taken from offerings in the School of Sciences and Engineering, including mechanical engineering or engineering disciplines (ENGR). Out of these four courses, a maximum of two 4000-level courses may be taken for graduate credit. The General Electives course selection requires the approval of the advisor and the department chair.

IV- Capstone project (3 credits)

Students are required to undertake an engineering project approved by the chair of the supervisory committee, which consists of the student advisor and two additional faculty members. A final report that has been reviewed for its technical writing quality is submitted and orally defended in the presence of the supervisory committee.

Master of Science

Mechanical Engineering (M.Sc.)

The Master of Science program in Mechanical Engineering is administered by the Mechanical Engineering Department. The program offers high quality education that prepares students for advanced academic, research and professional careers in one of the following specializations: Design, Industrial Engineering, Materials and Manufacturing Engineering, Mechatronics and Power.

Program Objectives

The objectives of the Master of Science Degree in Mechanical Engineering are to equip graduates with the ability to:

- Advance mechanical engineering by conducting impactful research and developing innovative solutions in emerging and evolving fields.
- Apply advanced theoretical and practical knowledge to analyze, design, and implement solutions for complex, multidisciplinary engineering challenges.
- Engage in interdisciplinary research to integrate mechanical engineering with other fields, fostering innovative solutions to address global challenges.
- Develop expertise in research methodologies and the skills necessary to pursue research-intensive careers or doctoral studies, contributing to the advancement of knowledge in mechanical engineering.
- Demonstrate leadership and collaboration to mentor future engineers and contribute to the growth of the mechanical engineering community.

- Communicate effectively across diverse teams and stakeholders to foster collaboration, ensure clarity, and contribute to professional and research advancements.

Admission

A candidate for the master's program in Mechanical Engineering must have a degree in engineering. Students who have some deficiency in their undergraduate training but are well-qualified in other respects may be admitted provisionally. The Mechanical Engineering Department may prescribe a program of noncredit work to make up for the deficiency.

Courses (24 credit hours)

A minimum of eight courses (24 credit hours) is required. The courses are selected with the help of the advisor and approval of the chair from the following categories:

I- Core Courses (Maximum 9 credit hours)

All students must select two courses from Group A and one course from Group B:

Group A

- ENGR 5202 - Computational Methods in Engineering (3 cr.)
- ENGR 5204 - Engineering Statistics (3 cr.)
- ENGR 5210 - Experimental Methods in Engineering (3 cr.)

Group B

- MENG 5222 - Materials in Design and Manufacturing (3 cr.)
- MENG 5251 - Engineering Systems Analysis and Design (3 cr.)
- MENG 5266 - Solar Radiation and Energy Conversion (3 cr.)
- MENG 5270 - Applied Control, Vibration and Instrumentations (3 cr.)

II- MENG Technical Elective Core Courses (Minimum 9 credit hours)

Students should select a minimum of three courses from the following elective courses:

- MENG 5168 - Nuclear Power Plant Engineering (3 cr.)
- MENG 5227 - Composite Materials: Mechanics, Manufacturing, and Design (3 cr.)
- MENG 5228 - Advanced Testing and Characterization Techniques (3 cr.)
- MENG 5229 - Failure Analysis and Prevention (3 cr.)
- MENG 5231 - Fabrication of Nanomaterials For Films And Devices (3 cr.)
- MENG 5232 - Simulation and Modeling for Nanoscale Materials and Systems (3 cr.)
- MENG 5233 - Additive Manufacturing: Materials, Processes and Applications (3 cr.)
- MENG 5234 - Materials for Energy Conversion and Storage (3 cr.)
- MENG 5235 - Biomaterials (3 cr.)

- MENG 5241 - Integrated Manufacturing Systems (3 cr.)
- MENG 5242 - Total Quality Management (3 cr.)
- MENG 5243 - Systems Modeling and Optimization (3 cr.)
- MENG 5245 - Production Systems Design (3 cr.)
- MENG 5253 - Advanced Computer Aided Design (3 cr.)
- MENG 5255 - Analysis and Design of Dynamic Systems (3 cr.)
- MENG 5257 - Engineering Design Methodologies (3 cr.)
- MENG 5258 - Applied Finite Element Analysis for Engineers (3 cr.)
- MENG 5263 - Cogeneration and Energy Storage (3 cr.)
- MENG 5265 - CFD and Turbulence Modeling (3 cr.)
- MENG 5271 - Robotics: Kinematics, Dynamics and Control (3 cr.)
- MENG 5272 - Embedded Real Time Systems (3 cr.)
- MENG 5273 - Modern Control Design (3 cr.)
- MENG 5274 - Autonomous Robotics: Modeling, Navigation and Control (3 cr.)
- MENG 5930 - Advanced Topics in Engineering (3 cr.)
- MENG 6261 - Sustainability of Thermal Systems (3 cr.)

III- General Elective Courses (Maximum 6 credit hours)

Students can take up to six credit hours selected from a set of graduate or undergraduate courses (4000/5000/6000) in all engineering disciplines, physical sciences, social sciences, management, and other related graduate programs, subject to approval from their academic advisor and chair.

Graduate Thesis Seminar (3 Credits)

Students must complete ENGR 5940, Graduate Thesis Seminar before registering for thesis credits.

Thesis

Graduate thesis work is a required part of the Master of Science in Mechanical Engineering degree program.

ENGR 5940 - Graduate Thesis Seminar (3 cr.)

Various research topics are discussed in ENGR 5940, which must be completed before registering for thesis credits.

MENG 5981 - Research Guidance Thesis (3 cr.)

A student must register for MENG 5981 after the completion of 15 credit hours. Students must register in MENG 5981 for at least two semesters for a total of six credit hours. After that, MENG 5981 is taken for one billable credit hour each semester until completion of the program requirements. Students will not be allowed to register for the second time in MENG 5981 unless they have defended their thesis proposal.

Department of Petroleum and Energy Engineering

Acting Chair: M. El-Morsi

Professors: A. El Banbi, A. Khlaifat

Professor of Practice: M. Oraby

Assistant Professors: S. Fakher

Petroleum and Energy Engineering department offers a B.Sc. in Petroleum Engineering. The Department provides an extremely challenging and exciting career involving the discovery and exploration of the earth's energy resources through knowledge of basic sciences, geosciences and petro-sciences. The discovery and production of the primary energy resources, namely fossil fuel and natural gas, will be the focus of this program; related topics include recent advances in exploration, drilling, production, reservoir development, and management. Although the main focus is Petroleum Engineering and Gas Technology, alternative energy resources such as solar, wind, fuel cell, and nuclear technologies will be adequately covered. Knowledge of related environmental issues and resource management along with excellent communication, language and IT skills will give graduates a competitive edge in this fast growing profession. Our primary goal is to produce highly qualified Engineers with the best possible preparation to compete in local, regional, and global energy related job markets, or to continue their education towards higher degrees.

The Petroleum Engineering (B.S.) program has an equivalence from the Supreme Council of Universities in Egypt.

The Petroleum Engineering (B.S.) program is accredited by the Engineering Accreditation Commission of ABET under the commission's General Criteria and the Program Criteria for the Petroleum and Similarly Named Engineering Programs.

Bachelor of Science

Petroleum Engineering (B.S.)

Bachelor of Science

The petroleum engineer is concerned mainly with the exploration, drilling, reservoir, and production operations. Economic and environmentally safe petroleum production and processing require the application of engineering principles in addition to a wide spectrum of knowledge including chemistry, geology, physics, and mathematics.

The Department of Petroleum and Energy Engineering offers an extremely challenging and exciting career involving the discovery, exploration, and processing of the earth's energy resources through the knowledge of basic sciences, geosciences, and petrosciences. Launched in Fall 2007, The program offers a BS in petroleum engineering and adopts an integrated approach striking a reasonable balance between petroleum engineering and gas technology. The program focuses on strengthening the ties with industry and gives its graduates excellent opportunities in the regional and global job markets.

The Petroleum Engineering (B.S.) program is accredited by the Engineering Accreditation Commission of ABET under the commission's General Criteria and the Program Criteria for the Petroleum and Similarly Named Engineering Programs.

The Petroleum Engineering (B.S.) has an equivalence from the Supreme Council of Universities in Egypt.

Program Educational Objectives

The petroleum engineering program at AUC graduates a petroleum engineer who, within a few years of graduation, meets societal needs in one or more of the following roles:

1. A professional team member to meet local and global petroleum industry demands.
2. A successful member of an academic or research organization or as an entrepreneur.
3. A distinguished member in the petroleum community through promotion or professional development with awareness of ethics and environmental issues.

Students Outcomes

Students will gain the following knowledge and skills:

1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
3. An ability to communicate effectively with a range of audiences.

4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Declaration of the Petroleum Engineering Major

Students accepted at AUC may either get admitted into their preferred major at the time of admission to the university (declare their major at the gate) or get admitted to the university as undeclared. Students who get admitted into a major will still have the opportunity to change their major later. Students must declare a major before completing 60 credit hours (before achieving a junior standing). Please check the eligibility criteria for declaring the Petroleum Engineering major below.

Eligibility Criteria for Petroleum Engineering Major Declaration at the Gate

The eligibility criteria for students who wish to apply to declare their major from the gate, with the declaration effective in the fall 2027 semester or the spring 2028 semester, can be accessed through the link below. Admission to the major is based on the program's student capacity.

To view the eligibility criteria, Click Here.

Eligibility Criteria for Petroleum Engineering Major Declaration from Within

The eligibility criteria for undeclared students (or students switching majors) who wish to apply to declare their major, with the declaration effective in the fall 2027 semester or the spring 2028 semester, can be accessed through the link below. Admission to the major is based on the program's student capacity.

To view the eligibility criteria, Click Here.

A total of 145 credits must be successfully completed to be awarded a Bachelor of Science in Petroleum Engineering.

To provide more depth above that provided by the fundamental petroleum engineering core courses, students are required to select 12 credit hours from among a list of more specialized

elective courses. Students can take maximum of one PENG 5000-level course to replace one of the elective course requirements with the consent of the graduate program director or the department chair.

Core Curriculum Requirements (33 credits)

The remaining 7 credit hours required to satisfy the core are fulfilled by the Science/lab courses (4 credits) and the capstone projects.

PENG 4980 and PENG 4981

Engineering and Science Core Requirements (48 credits)

- CHEM 1005 - General Chemistry I (3 cr.)
- CHEM 1015 - General Chemistry I-Laboratory (1 cr.)
- ENGR 1005 - Descriptive Geometry and Engineering Drawing (2 cr.)
- ENGR 2105 - Engineering Mechanics (3 cr.)
- ENGR 2122 - Fundamentals of Fluid Mechanics (3 cr.)
- ENGR 2412 - General Programming Lab (1 cr.)
- ENGR 3202 - Engineering Analysis and Computation I (3 cr.)
- MACT 1122 - Calculus II (3 cr.)
- MACT 2123 - Calculus III (3 cr.)
- MACT 2141 - Differential Equations (3 cr.)
- MACT 3224 - Probability and Statistics (3 cr.)
- MENG 2112 - Strength of Materials (3 cr.)
- PENG 3411 - Thermodynamics (3 cr.)
- PENG 3430 - Health, Safety, Environment and Sustainability (3 cr.)
- PHYS 1011 - Physics 1: Classical Mechanics, Sound and Heat (3 cr.)
- PHYS 1012 - General Physics Laboratory I (1 cr.)
- PHYS 1021 - Physics 2: Electricity and Magnetism (3 cr.)
- PHYS 1022 - General Physics Laboratory II (1 cr.)
- SCI 2005 - Introduction to Geology (3 cr.)

Petroleum Core Requirements (52 credits)

- PENG 2400 - Energy Industry Overview (1 cr.)
- PENG 3011 - Petroleum Geology and Exploration (3 cr.)
- PENG 3021 - Reservoir Rock Properties (2 cr. + 1 cr.)
- PENG 3111 - Drilling Engineering I (3 cr.)
- PENG 3112 - Drilling Engineering I Lab (1 cr.)

- PENG 3211 - Reservoir Fluids (2 cr. + 1 cr.)
- PENG 3215 - Reservoir Engineering Fundamentals (3 cr.)
- PENG 3227 - Formation Evaluation (3 cr.)
- PENG 3228 - Formation Evaluation Laboratory (1 cr.)
- PENG 3311 - Petroleum Production I (3 cr.)
- PENG 4121 - Drilling Engineering II (3 cr.)
- PENG 4223 - Reservoir Simulation and Modeling (2 cr. + 1 cr.)
- PENG 4224 - Well Testing (2+1 cr.)
- PENG 4225 - Secondary and Tertiary Recovery (3 cr.)
- PENG 4226 - Energy Economics (3 cr.)
- PENG 4227 - Reservoir Description and Characterization (3 cr.)
- PENG 4314 - Petroleum Production II (2+1 cr.)
- PENG 4324 - Surface Facilities (3 cr.)
- PENG 4950 - Industrial Training and Professional Ethics (1cr.)
- PENG 4980 - Senior Project I (1cr.)
- PENG 4981 - Senior Project II (2 cr.)

Electives (12 credits)

Students must select 4 courses (12 credits) out of the following electives.

Students can take maximum of one PENG 5000 level course to replace one of the elective course requirements with the consent of the graduate program director or the department chair.

- PENG 3415 - Principles of Energy Engineering (3 cr.)
- PENG 4015 - Exploration Methods (3 cr.)
- PENG 4125 - Advanced Well Construction (3 cr.)
- PENG 4229 - Unconventional Reservoirs (3 cr.)
- PENG 4313 - Oil and Gas Transmission and Storage (3 cr.)
- PENG 4325 - Well Stimulation (3 cr.)
- PENG 4333 - Energy Efficiency and Management (3 cr.)
- PENG 4421 - Renewable and Alternative Energy (3 cr.)
- PENG 4423 - Energy and Environmental Sustainability (3 cr.)
- PENG 4930 - Selected Topics in Petroleum and Energy Engineering (1-3 cr.)

Minors

Sustainable Energy Minor

The Minor in Sustainable Energy equips students with essential knowledge and skills for careers in areas such as smart grids, renewable energy generation, and energy management systems. This minor enhances and complements the education of students across the different SSE undergraduate programs; however, this minor is not open for students majoring in petroleum engineering.

Minor core courses (7 credits)

Take the following three required courses:

- PENG 2400 - Energy Industry Overview (1 cr.)
- PENG 3415 - Principles of Energy Engineering (3 cr.)
- PENG 4421 - Renewable and Alternative Energy (3 cr.)

Elective courses (9 credits)

Select three courses from the following courses:

- ECON 3054 - Environmental and Natural Resource Economics (3 cr.)
- MENG 4663 - Design of Renewable Energy Systems (3 cr.)
- PENG 4226 - Energy Economics (3 cr.)
- PENG 4333 - Energy Efficiency and Management (3 cr.)
- PENG 4423 - Energy and Environmental Sustainability (3 cr.)
- PENG 4930 - Selected Topics in Petroleum and Energy Engineering (1-3 cr.)

Master of Engineering

Petroleum Engineering (M.Eng.)

The Master Degree in Petroleum Engineering prepares graduate students to provide the industry with a workforce equipped with technical skills and research capabilities with the understanding of business, management practices, safety and environment and ethical work habits.

Program Objectives

The Petroleum Engineering Program Educational Objectives for the Master Programs are:

- Perform an independent petroleum engineering research work that meets the current industry standards and needs

- Provide the students with the optimum design experiences required for graduates to join the industry of petroleum engineering and continue life-long professional development.
- Apply and abide with highest standards of ethics, environmental, and societal requirements in petroleum industry

Admission Requirements

Full admission may be granted to entering students who have met the minimum criteria for the AUC graduate admission in addition to the following requirements:

- A BSc degree in petroleum engineering or closely related field with an overall grade point average (GPA) of at least 2.75 or its equivalent, and 3.0 or its equivalent in the major.
- The department may prescribe a number of prerequisite courses to make up for any deficiency. The prerequisite will depend on the student background, petroleum industry experience and the formal training obtained in the industry.

Core courses

Petroleum Engineering Courses (Minimum 21 credit hours)

Students select a minimum of seven courses from the Petroleum Courses:

- PENG 5111 - Advanced Drilling (3 cr.)
- PENG 5112 - Well Control (3 cr.)
- PENG 5131 - Applied PVT and EOS Modelling (3 cr.)
- PENG 5134 - Reservoir Management (3 cr.)
- PENG 5136 - Advanced Reservoir Simulation (3 cr.)
- PENG 5141 - Advanced formation evaluation (3 cr.)
- PENG 5142 - Cased-hole logging (3 cr.)
- PENG 5143 - Applied Techniques in Unconventional Reservoirs (3 cr.)
- PENG 5144 - Geostatistics (3 cr.)
- PENG 5221 - Advanced Production Engineering (3 cr.)
- PENG 5222 - Petroleum Assets Evaluation (3 cr.)
- PENG 5232 - Advanced Well Testing (3 cr.)
- PENG 5233 - Enhanced Oil Recovery (3 cr.)
- PENG 5235 - Compositional Simulation (3 cr.)
- PENG 5251 - Selected Topics in Fundamentals of Petroleum Engineering (1-3 cr.)
- PENG 5252 - Selected Advanced Topics in Petroleum Engineering (3 cr.)
- PENG 5253 - Independent Study (3 cr.)

- PENG 5980 - Research Guidance Thesis (3 cr.)

General Elective Courses (Maximum 9 credit hours)

Students may elect to take three courses (9 credits). A minimum of two courses must be taken from offerings in petroleum engineering/engineering disciplines (including ENGR). No more than two 4000 level courses may be taken for graduate credit, subject to approval of the advisor and department chair.

Capstone Project (3 credit hours)

PENG 5255 - Capstone Project (3 cr.)

Students are required to attend the library and writing modules of ENGR 5940 and to undertake an engineering project approved by the chair of the supervisory committee, which consists of the student advisor and two additional faculty members. A final report is submitted and orally defended in the presence of the supervisory committee.

Master of Science

Petroleum Engineering (M.Sc.)

The Master Degree in Petroleum Engineering prepares graduate students to provide the industry with a workforce equipped with technical skills and research capabilities with the understanding of business, management practices, safety and environment and ethical work habits.

Program Objectives

The Petroleum Engineering Program Educational Objectives for the Master Programs are:

- Perform an independent petroleum engineering research work that meets the current industry standards and needs.
- Provide the students with the optimum design experiences required for graduates to join the industry of petroleum engineering and continue life-long professional development.
- Apply and abide with highest standards of ethics, environmental, and societal requirements in petroleum industry.

Admission Requirements

Full admission may be granted to entering students who have met the minimum criteria for the AUC graduate admission in addition to the following requirements:

- A BSc degree in petroleum engineering or closely related field with an overall grade point average (GPA) of at least 2.75 or its equivalent, and 3.0 or its equivalent in the major.
- The department may prescribe a number of prerequisite courses to make up for any deficiency. The prerequisite will depend on the student background, petroleum industry experience and the formal training obtained in the industry.

Graduation Requirements

To earn the Master of Science degree, students must complete at least 33 credit hours. These include 24 credit hours of coursework, 3 credit hours of seminar, and a minimum of 6 credit hours dedicated to thesis research. In addition, students are required to successfully defend their MSc thesis.

Courses (24 credit hours)

Students must choose 3 credits of core courses. The remaining 21 credits can be taken from the list of elective courses below, with a maximum of 6 credits taken from any graduate SSE or 4000 level courses subject to the graduate advisor and chair's approval.

Core Courses (3 Credits)

Students must choose 3 credits of core courses.

- ENGR 5202 - Computational Methods in Engineering (3 cr.)
- ENGR 5204 - Engineering Statistics (3 cr.)
- ENGR 5210 - Experimental Methods in Engineering (3 cr.)
- ENGR 5240 - Engineering for a Sustainable Environment (3 cr.)

Petroleum Elective Courses

The remaining 21 credits can be taken from the list of elective courses below, with a maximum of 6 credits taken from any graduate SSE or 4000 level courses subject to the graduate advisor and chair's approval.

- PENG 5111 - Advanced Drilling (3 cr.)
- PENG 5112 - Well Control (3 cr.)
- PENG 5131 - Applied PVT and EOS Modelling (3 cr.)
- PENG 5134 - Reservoir Management (3 cr.)
- PENG 5136 - Advanced Reservoir Simulation (3 cr.)
- PENG 5141 - Advanced formation evaluation (3 cr.)
- PENG 5142 - Cased-hole logging (3 cr.)
- PENG 5143 - Applied Techniques in Unconventional Reservoirs (3 cr.)

- PENG 5144 - Geostatistics (3 cr.)
- PENG 5221 - Advanced Production Engineering (3 cr.)
- PENG 5222 - Petroleum Assets Evaluation (3 cr.)
- PENG 5232 - Advanced Well Testing (3 cr.)
- PENG 5233 - Enhanced Oil Recovery (3 cr.)
- PENG 5235 - Compositional Simulation (3 cr.)
- PENG 5251 - Selected Topics in Fundamentals of Petroleum Engineering (1-3 cr.)
- PENG 5252 - Selected Advanced Topics in Petroleum Engineering (3 cr.)
- PENG 5253 - Independent Study (3 cr.)

Research Guidance Thesis (9 credits)

Graduate thesis work is a required part of the Master of Science in Petroleum Engineering degree program

ENGR 5940 - Graduate Thesis Seminar (3 cr.)

Various research topics are discussed in ENGR 5940, which must be completed before registering for thesis credits.

PENG 5980 - Research Guidance Thesis (3 cr.)

A student must register for PENG 5980 after the completion of 15 credit hours. Students must register in PENG 5980 for at least two semesters for a total of six credit hours. After that, PENG 5980 is taken for one billable credit hour each semester until completion of the program requirements. Students will not be allowed to register for the second time in PENG 5980 unless they have defended their thesis proposal.

Department of Physics

Acting Chair: Y. Ismail

Professors: N. Allam, A. Shaarawi, E. Abdel-Rahman (Provost), E. Soliman, M. Swillam, S. Sedky

Associate Professors: K. Addas, A. El Fiqi, A. Hamed

Assistant Professor: Y. Abdelaziz

Physics is the most fundamental of the Physical Sciences. Physics lead to a deepened understanding of the phenomena in the world around us. The discipline of Physics is a training of the mind, and a methodology for approaching and solving problems. The significance of Physics

is manifested in its accomplishments in the development of the Scientific Method as well as providing an important component of all physical sciences and engineering disciplines.

Physics has always attracted special students, challenged by modern theories that shaped and are still shaping our understanding of the universe like the theory of relativity, quantum mechanics, superconductivity and particle physics; just to name a few. A degree in Physics leaves one poised to enter many professions that include but are not limited to traditional physics. The discipline of Physics teaches skills that are transferable to many other professions, including electronics, computer and oil industries. These transferable skills include: mathematical modeling, problem solving, designing experiments, interpretation of experimental data, reflecting on answers before trusting them, research experience, laboratory techniques and communication skills.

Bachelor of Science

Physics, with a specialization in Solar Energy (B.S.)

Bachelor of Science

The undergraduate program in Physics is designed to provide students with a thorough and flexible training in the fundamental aspects of classical and modern physics. Lecture material is reinforced and complemented by closely integrated laboratory work, and the varied course offerings provide several options from which students may choose according to their interests and abilities.

Physics students can either obtain a bachelor's degree in Physics or a bachelor's degree in Physics with a specialization in Solar Energy.

The Solar Energy specialization is in alignment with both national and international trends that emphasize the importance of renewable energy in general and solar energy in particular. While retaining the fundamentals of the conventional degree in Physics, this specialization provides students with basic and applied knowledge in the solar energy field.

Declaration of the Physics Major

Students accepted at AUC may either get admitted into their preferred major at the time of admission to the university (declare their major at the gate) or get admitted to the university as undeclared. Students who get admitted into a major will still have the opportunity to change their major later. Students must declare a major before completing 60 credit hours (before achieving a junior standing). Please check the eligibility criteria for declaring the Physics major below.

Eligibility Criteria for Physics Major Declaration at the Gate

The eligibility criteria for students who wish to apply to declare their major from the gate, with the declaration effective in the fall 2027 semester or the spring 2028 semester, can be accessed through the link below. Admission to the major is based on the program's student capacity.

To view the eligibility criteria, Click Here.

Eligibility Criteria for Physics Major Declaration from Within

The eligibility criteria for undeclared students (or students switching majors) who wish to apply to declare their major, with the declaration effective in the fall 2027 semester or the spring 2028 semester, can be accessed through the link below. Admission to the major is based on the program's student capacity.

To view the eligibility criteria, Click Here.

A total of 130 credit hours are required for the bachelor's degree in Physics.

Core Curriculum (33 credits)

The remaining 7 credit hours required to satisfy the core are fulfilled by the concentration Science/lab (4 cr.) and the capstone projects PHYS 4980 and PHYS 4981.

Concentration Requirements (46 credits)

- PHYS 1011 - Physics 1: Classical Mechanics, Sound and Heat (3 cr.)
- PHYS 1012 - General Physics Laboratory I (1 cr.)
- PHYS 1021 - Physics 2: Electricity and Magnetism (3 cr.)
- PHYS 1022 - General Physics Laboratory II (1 cr.)
- PHYS 2041 - Foundations of Modern Physics (3 cr.)
- PHYS 2042 - Modern Physics Laboratory (1 cr.)
- PHYS 2211 - Introduction to Electronics (3 cr.)
- PHYS 2213 - Electronics Lab (1 cr.)
- PHYS 2221 - Waves and Optics (3 cr.)
- PHYS 2222 - Optics Laboratory (1 cr.)
- PHYS 3013 - Theoretical Mechanics (3 cr.)
- PHYS 3023 - Electromagnetic Theory (3 cr.)
- PHYS 3031 - Thermodynamics and Statistical Mechanics (3 cr.)
- PHYS 3052 - Nuclear Physics Lab (1 cr.)

- PHYS 3232 - Advanced Physics Lab (2 cr.)
- PHYS 3241 - Computational Methods in Physics (3 cr. + 1 cr.)
- PHYS 4042 - Quantum Mechanics I (3 cr.)
- PHYS 4051 - Nuclear and Particle Physics (3 cr.)
- PHYS 4225 - Photonics and Optical Communication Laboratory (1 cr.)
- PHYS 4231 - Introduction to Solid-State Physics (3 cr.)

Collateral Requirements (16 credits)

- CHEM 1005 - General Chemistry I (3 cr.)
- CHEM 1015 - General Chemistry I-Laboratory (1 cr.)
- MACT 1122 - Calculus II (3 cr.)
- MACT 2123 - Calculus III (3 cr.)
- MACT 2132 - Linear Algebra (3 cr.)
- MACT 2141 - Differential Equations (3 cr.)

Thesis Requirement (3 credits)

- PHYS 4980 - Research Skills (1 cr.)
- PHYS 4981 - Senior Thesis (2 cr.)

General Electives (12 credits)

Concentration Electives (20 credits)

For the BS in Physics with Solar Energy specialization: 6 cr. from group C and 14 cr. from group B.

For the BS in Physics: Students must take at least 8 credits from the following: PHYS 4910, PHYS 4930, groups A, B, C, or any PHYS 51xx or PHYS 52xx* courses. For the remaining credits, students can choose to take a maximum of 6 cr. from any 3000 level or higher SSE courses and a maximum of 6 cr. from group D.

- PHYS 4910 - Independent Study (1-3 cr.)
- PHYS 4930 - Selected Topics in Physics (3 cr.)

*52xx courses are open to graduate students; however, a senior student who has a B average may take two graduate courses, not exceeding six credits, either for graduate credit or for completion of requirements for the bachelor's degree.

Group A

- PHYS 4043 - Quantum Mechanics II (3 cr.)
- PHYS 4071 - General Relativity and Cosmology (3 cr.)

Group B

- PHYS 4233 - Semiconductor Physics (3 cr.)
- PHYS 4234 - Solar Energy Lab (2 cr.)
- PHYS 4241 - Introduction to Solar Energy (3 cr.)
- PHYS 4242 - Introduction to Nanophysics (3 cr.)
- PHYS 4243 - Physics of Solar Energy Conversion Systems (3 cr.)
- PHYS 4244 - Introduction to Nanotechnology (3 cr.)

Group C

- PHYS 3223 - Advanced Optics (3 cr.)
- PHYS 4224 - Photonics (3 cr.)
- PHYS 4227 - Fundamentals of Quantum Computing (3 cr.)
- PHYS 4281 - Experimental Methods in Physics (3 cr.)

Group D

- CENG 3111 - Structural Analysis (4 cr.)
- CENG 3511 - Fundamentals of Hydraulic Engineering (3 cr.)
- CENG 4313 - Soil Mechanics (4 cr.)
- CHEM 3004 - Physical Chemistry I (3 cr.)
- CHEM 4003 - Physical Chemistry II (3 cr.)
- CSCE 3102 - Programming in Java (3 cr.)
- CSCE 3303 - Fundamental Microelectronics (3 cr.)
- CSCE 3304 - Digital Design II (3 cr.)
- CSCE 3601 - Fundamentals of Artificial Intelligence (3 cr.)
- CSCE 3701 - Software Engineering (3 cr.)
- CSCE 4202 - Applied Quantum Computing (3 cr.)
- CSCE 4603 - Fundamentals of Computer Vision (3 cr.)
- DSCI 3411 - Fundamentals of Simulation (3 cr.)
- DSCI 4411 - Fundamentals of Data Mining (3 cr.)
- DSCI 4412 - Introduction to Big Data Technologies (3 cr.)
- ECNG 3106 - Electronics II: Analog Circuits (3 cr.)
- ECNG 4402 - Electromagnetic Waves (3 cr.)
- MACT 2131 - Discrete Mathematics (3 cr.)
- MACT 3143 - Numerical Methods (3 cr.)

- MACT 3211 - Applied Probability (3 cr.)
- MACT 3224 - Probability and Statistics (3 cr.)
- MACT 4125 - Complex-Function Theory (3 cr.)
- MACT 4231 - Applied Regression Methods (3 cr.)
- MACT 4232 - Analysis of Time Series Data (3 cr.)
- MENG 3602 - Applied Fluid Mechanics (3 cr.)
- MENG 3605 - Applied Thermodynamics (3 cr.)
- PENG 3211 - Reservoir Fluids (2 cr. + 1 cr.)
- PENG 3411 - Thermodynamics (3 cr.)

Minors

Physics Minor

The physics minor is designed to enable science, and engineering majors to deepen their knowledge with targeted physics courses. Students can explore topics like quantum computing, solar energy, nanophysics, and electronic device physics by creating a personalized plan with an academic advisor.

Requirements (minimum 16 credits)

Students need to take a minimum of 16 credits to satisfy the requirements of the physics minor.

Required courses (4 credits)

- PHYS 2041 - Foundations of Modern Physics (3 cr.)
- PHYS 2042 - Modern Physics Laboratory (1 cr.)

Elective courses (12 credits)

Students can satisfy the remaining 12 credits from the following list of courses in consultation with the academic advisor.

- PHYS 2211 - Introduction to Electronics (3 cr.)
- PHYS 2213 - Electronics Lab (1 cr.)
- PHYS 2221 - Waves and Optics (3 cr.)
- PHYS 2222 - Optics Laboratory (1 cr.)
- PHYS 3013 - Theoretical Mechanics (3 cr.)
- PHYS 3023 - Electromagnetic Theory (3 cr.)
- PHYS 3031 - Thermodynamics and Statistical Mechanics (3 cr.)

- PHYS 3052 - Nuclear Physics Lab (1 cr.)
- PHYS 3223 - Advanced Optics (3 cr.)
- PHYS 4042 - Quantum Mechanics I (3 cr.)
- PHYS 4051 - Nuclear and Particle Physics (3 cr.)
- PHYS 4071 - General Relativity and Cosmology (3 cr.)
- PHYS 4224 - Photonics (3 cr.)
- PHYS 4227 - Fundamentals of Quantum Computing (3 cr.)
- PHYS 4231 - Introduction to Solid-State Physics (3 cr.)
- PHYS 4233 - Semiconductor Physics (3 cr.)
- PHYS 4234 - Solar Energy Lab (2 cr.)
- PHYS 4241 - Introduction to Solar Energy (3 cr.)
- PHYS 4242 - Introduction to Nanophysics (3 cr.)
- PHYS 4243 - Physics of Solar Energy Conversion Systems (3 cr.)
- PHYS 4244 - Introduction to Nanotechnology (3 cr.)

Master of Science

Physics (M.Sc.)

The Master of Science program in physics provides, along with a deep and solid foundation in basic physics, theoretical and experimental skills that are transferable to many professions besides the traditional physics research careers. These skills, acquired within the main stream of study in theoretical and condensed matter physics, include mathematical modeling, instrumentation and experiment design, and general laboratory and research techniques.

A total of 33 credit hours is required for the Master of Science degree. This consists of 24 credit hours of courses and 9 credit hours of thesis work.

Program Objectives

Within a few years of graduation, graduates of the Master's Program in Physics are expected to:

- Demonstrate Professional Excellence in Physics and Related Fields Graduates will apply advanced knowledge of physics to solve complex scientific and technological problems in academic, industrial, or government settings, showing innovation, analytical rigor, and ethical responsibility.
- Contribute to Scientific Research and Innovation Graduates will engage in or support original research that advances the frontiers of physics or interdisciplinary science, contributing to peer-reviewed publications, patents, or technological developments.

- Pursue Lifelong Learning and Advanced Studies Graduates will continue to expand their expertise through doctoral studies, professional development, certifications, or self-directed learning, adapting to evolving scientific challenges and opportunities.
- Promote Societal Impact through Science and Technology Graduates will use their physics training to contribute meaningfully to societal needs, including education, sustainable development, health, or energy, in alignment with ethical standards and public interest.

Admission

A Bachelor's degree in physics or a related field, with a minimum GPA of 3.0 out of 4.0, is required for admission into the physics master's program. Admission is also subject to the general university requirements for the graduate program. For those students whose grade records indicate promising ability, but who otherwise did not have an adequate preparation in physics, admission may be granted under the requirement that remedial courses will be taken.

Courses (24 credit hours)

The program of study is planned with the faculty advisor; and should include 15 credit hours of core courses, 3-6 credit hours of core elective courses, and 3-6 credit hours of Physics electives.

Core Courses (15 credit hours)

- PHYS 5113 - Classical Mechanics (3 cr.)
- PHYS 5142 - Computational Physics (3 cr.)
- PHYS 5161 - Mathematical Physics (3 cr.)
- PHYS 5223 - Classical Electrodynamics I (3 cr.)
- PHYS 5243 - Advanced Quantum Mechanics (3 cr.)

Core Elective Courses (3-6 credit hours)

Choice of courses with consultation of advisor.

- PHYS 5132 - Advanced Thermodynamics and Statistical Mechanics (3 cr.)
- PHYS 5207 - Advanced Nanophysics (3 cr.)
- PHYS 5225 - Classical Electrodynamics II (3 cr.)
- PHYS 5235 - Solid State Physics I (3 cr.)
- PHYS 5238 - Quantum Computation (3 cr.)
- PHYS 5282 - Advanced Experimental Techniques (3 cr.)

Physics Electives (3-6 credit hours)

A maximum of 3 credit hours of the physics electives can be taken from graduate level courses in other related programs and a maximum of 6 credit hours can be taken from 4000 level physics courses, both subject to the advisors' and chairs' approval.

- PHYS 5124 - Fundamentals of Microwaves (3 cr.)
- PHYS 5125 - Integrated Photonics (3 cr.)
- PHYS 5236 - Advanced Semiconductor Physics (3 cr.)
- PHYS 5237 - Solid State Physics II (3 cr.)
- PHYS 5239 - Computational Electromagnetics (3 cr.)
- PHYS 5277 - MEMS/NEMS Technology and Devices (3 cr.)
- PHYS 5910 - Independent Studies (1-3 cr.)
- PHYS 5930 - Selected topics in Physics (3 cr.)
- PHYS 6121 - Nanophotonics (3 cr.)

Thesis (9 credit hours)

Graduate thesis work is a required part of the Master of Science in Physics

SCI 5940 - Graduate Thesis Seminar (3 cr.)

Various research topics are discussed in SCI 5940, which must be completed before registering for thesis credits.

PHYS 5980 - Research Guidance Thesis (3 cr.)

A student must register for PHYS 5980 after the completion of 15 credit hours. Students must register in PHYS 5980 for at least two semesters for a total of six credit hours. After that, PHYS 5980 is taken for one billable credit hour each semester until completion of the program requirements. Students will not be allowed to register for the second time in PHYS 5980 unless they have defended their thesis proposal.

Graduate Diploma

Physics (Graduate Diploma)

The graduate diploma in physics is directed at providing the student with advanced background in areas such as computational physics, mathematical modeling, laboratory techniques, instrumentation, experiment design, and research techniques. A total of 18 credit hours (6 courses) is required for the diploma.

Admission

Admission requirements are the same as those for the M. Sc. program.

Courses (18 credits)

The courses may be selected from the 5000-level physics courses. No more than two 4000-level courses, not previously taken, may be considered for credit. Successfully completed 5000-level courses in the diploma program will fulfill master's degree requirements should the student subsequently be admitted into the master's degree program. The diploma program may be completed in one academic year, and no thesis or qualifying examination is required.

Doctorate of Philosophy (Ph.D.) Program

Director: K. Seddik

Steering Committee:

Professors: A. El-Kadi, M. El-Morsi, W. Mamdouh, M. Swillam, E. Yazeed

Associate Professors: S. Fahmy, N. Mohareb

Doctorate of Philosophy (Ph.D.)

Applied Sciences, with specializations in Biotechnology, Chemistry, Computer Science, Global Public Health and Nanotechnology (Ph.D.)

Doctor of Philosophy in Applied Sciences

The Ph.D. in Applied Sciences is an interdisciplinary program that applies modern approaches from the experimental, natural and life sciences in conjunction with theoretical and computational methods from the disciplines of engineering, mathematics, and computer science to the solution of advanced problems of fundamental importance. The Ph.D. program in Applied Sciences emphasizes the application of research methods and procedures to advanced areas of importance in the sciences and technology. The program builds on the premise that advancing the applied sciences and technology must be based on fundamental comprehension of the various disciplines, while continually being responsive to the needs of new technologies, and the interdisciplinary nature of the modern scientific enterprise. This program is administered by a committee that has a representation of faculty from various graduate programs in the School of Sciences and Engineering.
This program offers a Ph.D. degree in Applied Sciences with specializations in:

- Biotechnology,

- Chemistry,
- Computer Science,
- Global Public Health, (It should be noted that the requirements for the Global Public Health specialization are different and can be found on the specialization page.)
- Nanotechnology.

Admission Requirements

- M.Sc. in an Engineering or Science discipline
- Demonstrated proficiency in the English language as determined by AUC graduate admissions

Program Objectives

The mission of the Ph.D. program in Applied Sciences is to provide in-depth training to students in the natural sciences and computer science and in the conduct of original research leading to a doctoral dissertation. The program caters to the demands of academic, industry, and research institutes and place a strong emphasis on originality, professional practice, and ethical behavior.

The program's primary goal is to provide students with an opportunity to contribute to the advancement of knowledge in the field of applied sciences. The Ph.D. graduates fulfill societal needs with consideration for ethical and environmental issues and an appreciation of lifelong learning. The program's specific objectives are to enable graduates to:

1. Conduct and lead independent, original research that contributes to advancing the knowledge base and practice in their applied sciences specialization.
2. Assume leadership roles in academia, research organizations, or industry, demonstrating professional, ethical, and interdisciplinary expertise, and the capacity to address global, environmental, and societal challenges.
3. Collaborate effectively within multidisciplinary teams in academic and professional contexts, both locally and internationally.
4. Pursue lifelong learning and continuous professional development in applied sciences and related fields, maintaining adaptability to evolving technology, research trends, and industry needs.

Program Outcomes

Upon completing the degree requirements for the Ph.D. Program in Applied Science, graduating students should be able to:

1. Identify, formulate, and solve complex research problems by applying advanced principles of science and mathematics, with innovation and originality.
2. Apply research methodologies to produce solutions that meet specified needs.
3. Communicate research findings, theories, and technical concepts clearly and effectively to varied audiences in written, oral, and digital formats.
4. Demonstrate ethical and professional responsibility in science research and practice.
5. Develop, conduct, and assess appropriate experimental and computational investigations; analyze and interpret complex data.
6. Evaluate and ensure the quality and impact of scholarly work, meeting clearly defined standards and benchmarks for publication, research productivity, and academic integrity.

Doctoral of Philosophy Degree Requirements

Students going through this program are expected to successfully complete the following requirements:

1. **Pass the required course work with a GPA of 3.0 or higher:** This ensures the breadth of knowledge of the Ph.D. student.
2. **Pass a Qualifying Examination:** This signifies that course work is completed and that the student has sufficient background knowledge in her/his field of specialization.
3. **Present and defend a proposal of the intended research work:** This demonstrates that the candidate has defined her/his research problem and is capable of identifying the research methodology that she/he will adopt.
4. **Submit a written Dissertation and defend it in a final Oral Defense:** This marks the completion of the requirements for the Ph.D. degree.

Doctoral Coursework

As part of the process of achieving candidacy, a doctoral student must complete a set of courses known as the doctoral candidacy coursework. It includes at least thirty-six (36) credit hours of relevant graduate coursework beyond the bachelor's degree, of which at least eighteen (18) credit hours must be earned at AUC.

Because of the interdisciplinary nature of the program, and in order to ensure sufficient breadth of study, the program is designed to include required core coursework in areas outside the student's main specialization. In addition, the student must complete 3 credit hours of a Seminar course and register for thirty-three (33) credit hours of Dissertation research work.

Courses for each specialization will be listed at the 5000 and 6000 levels in addition to remedial courses to be taken at the 4000 level whenever deemed necessary.

The Academic Advisor and the Research Advisory Committee

The academic advisor is determined by the specialization of the student and is particularly important for assistance in the preliminary course planning of a student's Ph.D. program. Each specialization has at least one faculty member advisor (usually the Graduate Program Director of the discipline). The academic advisor will be available to the student to help in her/his preliminary choice of the courses. As the student progresses in the program she/he chooses the members of the Research Advisory Committee, which consists of the Chair of the Committee (Dissertation supervisor) and at least two other members. This committee plays a greater role in finalizing the courses for the student's Plan of Study and in advising her/his research work. It is the responsibility of the student to find an AUC faculty member willing to serve as the Chair of the Research Advisory Committee and to choose in consultation with her/him the other members.

Ph.D. Plan of Study for Qualification and Candidacy

The Ph.D. Plan of Study is intended to help the student select courses and will ensure that she/he has an academic program that meets the Ph.D. coursework requirements. The Plan of Study will also allow the students to identify a sequence of courses that meets her/his professional objectives. A preliminary Plan of Study will be drafted in consultation with the student's academic advisor and should be submitted before the student signs up to take the Ph.D. Qualifying Examination.

As the student advances in the program, she/he should choose the members of her/his Research Advisory Committee.The final plan of Study will be drafted in consultation with the Research Advisory Committee. A final up-to-date copy must be submitted before the student applies to take the qualifying exam.

The Plan of Study must contain a listing of the courses the student has taken or intends to take to satisfy the qualification coursework requirements and must constitute a coherent program within the scope of the chosen specialization. It is the student's responsibility to make sure that all requirements are met. Any departure from the requirements must be requested by a written petition, which should normally flow starting from the supervisor, to the director of the specialization area, then the Associate Dean for Graduate Studies and Research for final approval.

Doctoral Qualifying Examination

The purpose of the Ph.D. Qualifying Examination is to evaluate the student's ability to analyze problems and to synthesize solutions. It should demonstrate the ability of the student to interrelate basic concepts and ideas in her/his field of study. The Ph.D. Qualifying Examination

will be administrated by an Examining Committee in each specialization. Following the examination, the Examining Committee will submit an evaluation of the student's performance to the Office of the Associate Dean for Graduate Studies and Research. The qualifying examination is typically taken in the semester immediately following the completion of the coursework credit hours, but no later than during the fourth semester since admission into the program. Any deviation from this schedule must be made by written petition and subsequent approval as indicated earlier.

Students who wish to sit for the Qualifying Examination in a given semester are required to register for PHDS 6888 during the add/drop period of that semester.

The Proposal Defense

Typically, in the semester immediately after the successful completion of the qualifying examination, the student has to write a research proposal under the guidance of the Dissertation supervisor and will give a Proposal Presentation in front of the Research Advisory Committee. Upon the acceptance of the proposal by the Research Advisory Committee, the student makes an oral presentation of the research proposal, including relevant background material. During and after the presentation, the committee will explore the research project with the student in order to provide guidance and make an evaluation of its suitability. They will report their recommendation to the Office of the Associate Dean for Graduate Studies and Research. In case the student does not present an acceptable proposal, the student must take immediate steps to refine the proposal in consultation with the dissertation supervisor. The Proposal Presentation requirements are completed when the Research Advisory Committee Chair reports a successful proposal presentation to the office of the associate dean for graduate studies and research at the School of Sciences and Engineering.

Following acceptance of the proposal, the Dissertation Defense Committee is finalized. This consists of the three members of the Research Advisory Committee in addition to two external examiners. The external examiners should be well-qualified and highly-established experts in the candidate's field of study. The external examiners will be selected in consultation with the supervisor, the Research Advisory Committee and the director of the specialization area and approved by the PhD program director and the associate dean for graduate studies and research at the School of Sciences and Engineering.

Publications Requirement

The candidate is required to have at least two accepted peer-reviewed international research publications before the dissertation defense, one of which must be a journal publication in a

reputable international journal (as assessed by the student's specialization). The publications must be originating from the PhD (not from a previous MSc).

The Dissertation and Its Defense - Final Oral Defense

Upon completion, the dissertation will be sent to the external examiners for evaluation. The examiners will be contacted by the PhD program director two months before the final oral defense and will be asked to provide detailed written evaluations of the dissertation. The examiners' recommendations will inform the decision of the PhD program director and the associate dean for graduate studies and research on whether the student proceeds to final oral defense or whether major revisions - including additional work - are needed. Copies of the external examiners' reports will be shared with the student before the defense in order to have them addressed. The student will defend the dissertation in an open examination before the committee. The remote attendance of an international external examiner residing abroad in the final oral defense is permitted. Each member of the Dissertation Defense Committee will submit a written evaluation of the dissertation after the Oral Defense. Following the successful oral defense, the student must consult with the dissertation supervisor about any changes required by the committee, and must address these changes before the final submission of the dissertation to the school dean.

Course and Research Requirements

Minimum number of credit hours beyond the B.Sc. degree: 72

Dissertation hours 33 (BIOT 6980, CHEM 6980, CSCE 6980, GHHE 6980, NANO 6980)

Seminar hours 3 (SCI 5940)

Course hours 36 (See below)

The required number of semester credit hours of coursework to be taken for the Ph.D. degree is dependent upon the M.Sc. degree and is determined by the academic advisor or program director of the student at the time of admission.

Case 1: M.Sc. in the same Applied Sciences discipline

A candidate may receive up to 24 credit hours to be counted towards the Ph.D. degree**.**

Case 2: M.Sc. in a different Applied Sciences or Engineering discipline.

A candidate may receive up to 18 credit hours to be counted towards the Ph.D. degree.

A plan of study will be developed under the guidance of the academic advisor of the student at the time of admission and may be modified later on by her/his Research Advisory Committee. Courses are to be selected from the following, noting that at least eighteen credit hours of course work must be earned at AUC as earlier indicated:

I- Core Courses (3-6 credits)

Core courses are selected from an area outside of the specialization of the student.
Admission Case 1: at least 3 credit hours.
Admission Case 2: at least 6 credit hours.

- BIOT 5201 - Biochemistry (3 cr.)
- BIOT 5206 - Fundamentals of Bioinformatics (3 cr.)
- CHEM 5203 - Advanced Organic Chemistry (3 cr.)
- CHEM 5204 - Methods of Structure Determination (3 cr.)
- CSCE 5261 - Advanced Artificial Intelligence (3 cr.)
- CSCE 5262 - Computational Machine Learning (3 cr.)
- CSCE 5263 - Knowledge Engineering (3 cr.)
- ENGR 5202 - Computational Methods in Engineering (3 cr.)
- ENGR 5204 - Engineering Statistics (3 cr.)
- ENGR 5210 - Experimental Methods in Engineering (3 cr.)
- GHHE 5110 - Biostatistics (3 cr.)
- NANO 5202 - Simulation and Modeling for Nanoscale Materials and Systems (3 cr.)
- NANO 5203 - Advanced Testing and Characterization Techniques (3 cr.)
- NANO 5204 - Fabrication of Nanomaterials For Films And Devices (3 cr.)
- PHYS 5223 - Classical Electrodynamics I (3 cr.)

II- Specialization Courses (6-9 credits)

Dependent on the admission status, the student will take the following number of credit hours in their relevant area of specialization:

Admission case 1: at least 6 credit hours.

Admission case 2: at least 9 credit hours.

5200-level master's courses offered by the graduate programs of Biotechnology (BIOT), Chemistry (CHEM), Computer Science (CSCE), Nanotechnology (NANO), and Physics (PHYS) are considered specialization courses.

At least one of the courses taken in the specialization must be a 6000-level course relevant to the student's specialization from the following list:

- BIOT 6204 - Model Systems in Cancer Research (2 cr. + 1 cr. lab)
- BIOT 6206 - Computational Genomics and Transcriptomics (3 cr.)
- BIOT 6930 - Current Topics in Biotechnology (3 cr.)
- BIOT 6931 - Reading and Conference Course (3 cr.)
- CHEM 6103 - Bioseparation Processes for Food and Pharmaceutical Industries (3 cr.)
- CHEM 6105 - Principles and Applications of Mass Spectrometry (3 cr.)
- CHEM 6107 - Chemistry of Natural and Synthetic Polymers (3 cr.)
- CHEM 6910 - Independent Study in Chemistry (3 cr. max.)
- CHEM 6930 - Advanced Selected Topics in Chemistry (3 cr.)
- CSCE 6222 - Advanced Data-Driven Optimization (3 cr.)
- CSCE 6231 - Mobile and Pervasive Computing (3 cr.)
- CSCE 6930 - Advanced Selected Topics in Computer Science (3 cr.)
- NANO 5205 - Nanochemistry (3 cr.)
- NANO 6121 - Nanophotonics (3 cr.)
- NANO 6230 - Biomaterials (3 cr.)
- NANO 6240 - Nanoporous Materials (3 cr.)
- NANO 6242 - Nanocatalysis (3 cr.)
- NANO 6910 - Independent Studies (1-3 cr.)
- PHYS 6930 - Advanced Selected Topics in Physics (3 cr.)

III- General Elective Course (3 credits)

Any SSE graduate-level course (5200-level or 6000-level course) may be taken, with the approval of the program director if the course is outside the student's specialization.

For students who do not receive the maximum number of waived credits for their admission case, any additional courses needed to meet the required number of course credit hours must be planned and approved by the academic advisor.

IV- Dissertation and Seminars (Minimum of 36 credit hours)

Dissertation work includes completion of:

- SCI 5940 - Graduate Thesis Seminar (3 cr.)
  The requirement of the Graduate Thesis Seminar is waived for students earning their master's degree at AUC.

- Research Dissertation Guidance, a minimum of 33 cr. (BIOT 6980, CHEM 6980, CSCE 6980, GHHE 6980 or NANO 6980)

  After completing 33 credit hours of dissertation, the course may be taken for one billable credit hour each semester until completion of the program requirements.

A student may register for up to 12 research dissertation guidance credits while conducting research at an entity outside AUC. Conducting research outside AUC is subject to recommendation from the dissertation supervisor of the student, and approval of the PhD program director, as per the latest PhD guidelines. The dissertation supervisor must be fully involved in any such research. Additionally, evidence of demonstrable collaboration between the dissertation supervisor and the entity outside AUC where this research is to be conducted, as well as the contribution of this external entity to this research, must be provided by the dissertation supervisor to the PhD program director prior to the proposal defense.

Students will not be allowed to register beyond 12 dissertation hours unless defending their PhD proposals.

The PhD guidelines manual details the guidelines for advising, the qualifying examination, the proposal defense, and the dissertation defense.

Engineering, with specializations in Construction Engineering, Electronics and Communications Engineering, Environmental Engineering, Mechanical Engineering and Robotics, Control & Smart Systems (Ph.D.)

Doctor of Philosophy in Engineering

The Ph.D. in Engineering is an interdisciplinary program that applies modern approaches from the experimental, natural and life sciences in conjunction with theoretical and computational methods from the disciplines of engineering, mathematics, and computer science to the solution of advanced problems of fundamental importance. The Ph.D. program in Engineering emphasizes the application of research methods and procedures to advanced areas of importance in the sciences and technology. The program builds on the premise that advancing the applied sciences and technology must be based on fundamental comprehension of the various disciplines, while continually being responsive to the needs of new technologies, and the interdisciplinary nature of the modern scientific enterprise. This program is administered by a committee that has a representation of faculty from various graduate programs in the School of Sciences and Engineering.

This program offers a Ph.D. degree in Engineering with specializations in:

- Construction Engineering,
- Electronics and Communications Engineering,
- Environmental Engineering,
- Mechanical Engineering,
- Robotics, Control and Smart Systems.

Admission Requirements

- M.Sc. in an Engineering discipline.
- Demonstrated proficiency in the English language as determined by AUC graduate admissions.

Program Objectives

The mission of the Ph.D. program in Engineering is to provide in-depth training to students in the natural sciences, engineering, and computer science and in the conduct of original research leading to a doctoral dissertation. The program caters to the demands of academic, industry, and research institutes and place a strong emphasis on originality, professional practice, and ethical behavior.

The program's primary goal is to provide students with an opportunity to contribute to the advancement of knowledge in the field of engineering. The Ph.D. graduates fulfill societal needs with consideration for ethical and environmental issues and an appreciation of lifelong learning. The program's specific objectives are to enable graduates to:

1. Conduct and lead independent, original research that contributes to advancing the knowledge base and practice in their engineering specialization.
2. Assume leadership roles in academia, research organizations, or industry, demonstrating professional, ethical, and interdisciplinary expertise, and the capacity to address global, environmental, and societal challenges.
3. Collaborate effectively within multidisciplinary teams in academic and professional engineering contexts, both locally and internationally.
4. Pursue lifelong learning and continuous professional development in engineering and related fields, maintaining adaptability to evolving technology, research trends, and industry needs.

Program Outcomes

Upon completing the degree requirements for the Ph.D. Program in Engineering, graduating students should be able to:

1. Identify, formulate, and solve complex engineering problems by applying advanced principles of engineering, science, and mathematics, with innovation and originality.
2. Apply engineering design and research methodologies to produce solutions that meet specified needs.
3. Communicate research findings, theories, and technical concepts clearly and effectively to varied audiences in written, oral, and digital formats.
4. Demonstrate ethical and professional responsibility in engineering research and practice.
5. Develop, conduct, and assess appropriate experimental and computational investigations; analyze and interpret complex data using appropriate engineering judgment.
6. Evaluate and ensure the quality and impact of scholarly work, meeting clearly defined standards and benchmarks for publication, research productivity, and academic integrity.

Doctoral of Philosophy Degree Requirements

Students going through this program are expected to successfully complete the following requirements:

1. **Pass the required coursework with a GPA of 3.0 or higher:** This ensures the breadth of knowledge of the Ph.D. student.
2. **Pass a Qualifying Examination:** This signifies that coursework is completed and that the student has sufficient background knowledge in her/his field of specialization.
3. **Present and defend a proposal of the intended research work:** This demonstrates that the candidate has defined her/his research problem and is capable of identifying the research methodology that she/he will adopt.
4. **Submit a written Dissertation and defend it in a final Oral Defense:** This marks the completion of the requirements for the Ph.D. degree.

Doctoral Coursework

As part of the process of achieving candidacy, a doctoral student must complete a set of courses known as the doctoral candidacy coursework. It includes at least thirty-six (36) credit hours of relevant graduate coursework beyond the bachelor's degree, of which at least eighteen (18) credit hours must be earned at AUC.

Because of the interdisciplinary nature of the program, and in order to ensure sufficient breadth of study, the program is designed to include required coursework in areas outside the student's main specialization. In addition, the student must complete 3 credit hours of a Seminar course and register for thirty-three (33) credit hours of Dissertation research work.

Courses for each specialization will be listed at the 5000 and 6000 levels in addition to remedial courses to be taken at the 4000 level whenever deemed necessary.

The Academic Advisor and the Research Advisory Committee

The academic advisor is determined by the specialization of the student and is particularly important for assistance in the preliminary course planning of a student's Ph.D. program. Each specialization has at least one faculty member advisor (usually the Graduate Program Director of the discipline). The academic advisor will be available to the student to help in her/his preliminary choice of the courses. As the student progresses in the program she/he chooses the members of the Research Advisory Committee, which consists of the Chair of the Committee (Dissertation supervisor) and at least two other members. This committee plays a greater role in finalizing the courses for the student's Plan of Study and in advising her/his research work. It is the responsibility of the student to find an AUC faculty member willing to serve as the Chair of the Research Advisory Committee and to choose, in consultation with her/him, the other members.

Ph.D. Plan of Study for Qualification and Candidacy

The Ph.D. Plan of Study is intended to help the student select courses and will ensure that she/he has an academic program that meets the Ph.D. coursework requirements. The Plan of Study will also allow the student to identify a sequence of courses that meets her/his professional objectives. A preliminary Plan of Study will be drafted in consultation with the student's academic advisor and should be submitted before the student signs up to take the Ph.D. Qualifying Examination.

As the student advances in the program, she/he should choose the members of her/his Research Advisory Committee. The final Plan of Study will be drafted in consultation with the Research Advisory Committee. A final up-to-date copy must be submitted before the student applies to take the qualifying exam.

The Plan of Study must contain a listing of the courses the student has taken or intends to take to satisfy the qualification coursework requirements and must constitute a coherent program within the scope of the chosen specialization. It is the student's responsibility to make sure that all requirements are met. Any departure from the requirements must be requested by a written petition, which should normally flow starting from the supervisor, to the director of the specialization area, then the Associate Dean for Graduate Studies and Research for final approval.

Doctoral Qualifying Examination

The purpose of the Ph.D. Qualifying Examination is to evaluate the student's ability to analyze problems and to synthesize solutions. It should demonstrate the ability of the student to interrelate basic concepts and ideas in her/his field of study. The Ph.D. Qualifying Examination will be administrated by an Examining Committee in each specialization. Following the examination, the Examining Committee will submit an evaluation of the student's performance to the Office of the Associate Dean for Graduate Studies and Research. The qualifying examination is typically taken in the semester immediately following the completion of the coursework credit hours, but no later than during the fourth semester since admission into the program. Any deviation from this schedule must be made by written petition and subsequent approval as indicated earlier.

Students who wish to sit for the Qualifying Examination in a given semester are required to register for PHDE 6888 during the add/drop period of that semester.

The Proposal Defense

Typically, in the semester immediately after the successful completion of the qualifying examination, the student has to write a research proposal under the guidance of the Dissertation supervisor and will give a Proposal Presentation in front of the Research Advisory Committee. Upon the acceptance of the proposal by the Research Advisory Committee, the student makes an oral presentation of the research proposal, including relevant background material. During and after the presentation, the committee will explore the research project with the student in order to provide guidance and make an evaluation of its suitability. They will report their recommendation to the Office of the Associate Dean for Graduate Studies and Research. In case the student does not present an acceptable proposal, the student must take immediate steps to refine the proposal in consultation with the dissertation supervisor. The Proposal Presentation requirements are completed when the Research Advisory Committee Chair reports a successful proposal presentation to the office of the associate dean for graduate studies and research at the School of Sciences and Engineering.

Following acceptance of the proposal, the Dissertation Defense Committee is finalized. This consists of the three members of the Research Advisory Committee, in addition to two external examiners. The external examiners should be well-qualified and highly-established experts in the candidate's field of study. The external examiners will be selected in consultation with the supervisor, the Research Advisory Committee and the director of the specialization area and approved by the PhD program director and the associate dean for graduate studies and research at the School of Sciences and Engineering.

Publications Requirement

The candidate is required to have at least two accepted peer-reviewed international research publications before the dissertation defense, one of which must be a journal publication in a reputable international journal (as assessed by the student's specialization). The publications must be originating from the PhD (not from a previous MSc).

The Dissertation and Its Defense - Final Oral Defense

Upon completion, the dissertation will be sent to the external examiners for evaluation. The examiners will be contacted by the PhD program director two months before the final oral defense and will be asked to provide a detailed written evaluation of the dissertation. The examiners' recommendations will inform the decision of the PhD program director and the associate dean for graduate studies and research on whether the student proceeds to final oral defense or whether major revisions - including additional work - are needed. Copies of the external examiners' reports will be shared with the student before the defense in order to have them addressed. The student will defend the dissertation in an open examination before the committee. The remote attendance of an international external examiner residing abroad in the final oral defense is permitted. Each member of the Dissertation Defense Committee will submit a written evaluation of the dissertation after the Oral Defense. Following the successful oral defense, the student must consult with the dissertation supervisor about any changes required by the committee, and must address these changes before the final submission of the dissertation to the school dean.

Course and Research Requirements

Minimum number of credit hours beyond the B.Sc. degree: 72

Dissertation hours 33 (CENG 6980, ECNG 6980, ENVE 6980, MENG 6980, RCSS 6980).

Seminar hours 3 (ENGR 5940)

Course hours 36 (See below)

The required number of semester credit hours of coursework to be taken for the PhD degree is dependent upon the M.Sc. degree and is determined by the academic advisor or program director of the student at the time of admission.

Case 1: M.Sc. in the same Engineering discipline.

A candidate may receive up to 24 credit hours to be counted towards the Ph.D. degree

Case 2: M.Sc. in a different Engineering discipline.

A candidate may receive up to 18 credit hours to be counted towards the Ph.D. degree

A plan of study will be developed under the guidance of the academic advisor of the student at the time of admission and may be modified later on by her/his Research Advisory Committee. Courses are to be selected from the following, noting that at least eighteen credit hours of coursework must be earned at AUC as earlier indicated:

I- Core Courses (3-6 credits)

Core courses are selected from an area outside of the specialization of the student.
Admission Case 1: at least 3 credit hours.
Admission Case 2: at least 6 credit hours.

- BIOT 5206 - Fundamentals of Bioinformatics (3 cr.)
- CSCE 5261 - Advanced Artificial Intelligence (3 cr.)
- CSCE 5262 - Computational Machine Learning (3 cr.)
- CSCE 5263 - Knowledge Engineering (3 cr.)
- ECNG 5210 - Advanced Solid-State Devices (3 cr.)
- ECNG 5230 - Probability and Stochastic Processes with Applications (3 cr.)
- ENGR 5202 - Computational Methods in Engineering (3 cr.)
- ENGR 5204 - Engineering Statistics (3 cr.)
- ENGR 5210 - Experimental Methods in Engineering (3 cr.)
- ENVE 5251 - Unit Operations in Environmental Engineering (3 cr.)
- MENG 5243 - Systems Modeling and Optimization (3 cr.)
- NANO 5202 - Simulation and Modeling for Nanoscale Materials and Systems (3 cr.)
- NANO 5203 - Advanced Testing and Characterization Techniques (3 cr.)
- NANO 5204 - Fabrication of Nanomaterials For Films And Devices (3 cr.)
- PHYS 5223 - Classical Electrodynamics I (3 cr.)
- RCSS 5204 - Applied Estimation (3 cr.)
- RCSS 5241 - Smart Systems and Computational Intelligence (3 cr.)

II- Specialization Courses (6-9 credits)

Dependent on the admission status, the student will take the following number of credit hours in their relevant area of specialization:

Admission Case 1: at least 6 credit hours.
Admission Case 2: at least 9 credit hours.

5200-level master's courses offered by the graduate programs of Construction Engineering (CENG), Environmental Engineering (ENVE), Electronics and Communications Engineering (ECNG), Mechanical Engineering (MENG), and Robotics, Control and Smart Systems (RCSS) are considered specialization courses.

At least one of the courses taken in the specialization must be a 6000-level course relevant to the student's specialization from the following list:

- CENG 6211 - Structural Stability (3 cr.)
- CENG 6212 - Structural Dynamics (3 cr.)
- CENG 6213 - Earthquake Engineering and Seismic Design (3 cr.)
- CENG 6222 - Specialty Materials for Construction (3 cr.)
- CENG 6223 - Preserving, Repair and Sustainability of Structures (3 cr.)
- CENG 6231 - Highways Pavement Systems and Design (3 cr.)
- CENG 6291 - Independent Study in Structural and Material Engineering (3 cr. max.)
- CENG 6292 - Advanced Selected Topics in Construction Engineering (3 cr.)
- ECNG 6211 - Nanoscale CMOS (3 cr.)
- ECNG 6219 - Design and Analysis of High-Performance Integrated Circuits (3 cr.)
- ECNG 6235 - Detection, Classification, and Estimation Theory (3 cr.)
- ECNG 6930 - Advanced Selected Topics in Electronics and Communications Engineering (3 cr.)
- ENVE 6250 - Advanced Treatment Processes (3 cr.)
- ENVE 6910 - Independent Study in Environmental Engineering (3 cr. max.)
- ENVE 6930 - Advanced Selected Topics in Environmental Engineering (3 cr.)
- MENG 6255 - Continuum Mechanics (3 cr.)
- MENG 6261 - Sustainability of Thermal Systems (3 cr.)
- MENG 6262 - Advanced Transport Phenomena (3 cr.)
- MENG 6263 - Advanced Measurements in Thermofluids (3 cr.)
- MENG 6270 - Nonlinear and Adaptive Control (3 cr.)
- MENG 6930 - Advanced Selected Topics in Mechanical Engineering (3 cr.)
- RCSS 6930 - Advanced Selected Topics in Robotics, Control and Smart Systems (RCSS) (3 cr.)

III- General Elective Course (3 credits)

Any SSE graduate-level course (5200-level or 6000-level course) may be taken, with the approval of the program director if the course is outside the student's specialization.

For students who do not receive the maximum number of waived credits for their admission case, any additional courses needed to meet the required number of course credit hours must be planned and approved by the academic advisor.

IV- Dissertation and Seminars (Minimum of 36 credits)

Dissertation work includes completion of:

- ENGR 5940 - Graduate Thesis Seminar (3 cr.)
  The requirement of the Graduate Thesis Seminar is waived for students earning their master's degree at AUC.

- Research Dissertation Guidance, a minimum of 33 cr. (CENG 6980, ECNG 6980, ENVE 6980, MENG 6980 or RCSS 6980)
  After completing 33 credit hours of dissertation, the course may be taken for one billable credit hour each semester until completion of the program requirements.

A student may register for up to 12 research dissertation guidance credits while conducting research at an entity outside AUC. Conducting research outside AUC is subject to recommendation from the dissertation supervisor of the student, and approval of the PhD program director, as per the latest PhD guidelines. The dissertation supervisor must be fully involved in any such research. Additionally, evidence of demonstrable collaboration between the dissertation supervisor and the entity outside AUC where this research is to be conducted, as well as the contribution of this external entity to this research, must be provided by the dissertation supervisor to the PhD program director prior to the proposal defense.

Students will not be allowed to register beyond 12 dissertation hours unless defending their PhD proposals.

The PhD guidelines online manual details the guidelines for advising, the qualifying examination, the proposal defense, and the dissertation defense.

Environmental Engineering Program

Director: E. Yazeed

Steering Committee:

Professor: A. El Gendy

Associate Professor: M. Abdallah

Master of Engineering

Environmental Systems Design (M.Eng.)

The Master of Engineering Degree in Environmental Systems Design prepares students for higher-level professional practice in local and international markets, whether in private consulting practice, industry, or government and regulatory activities.

Program Objectives

The objectives of the Master of Engineering Degree in Environmental Systems Design are to:

- Enable graduates of the program to conduct analytical and experimental studies in water quality analysis and modeling, water and wastewater treatment designs, solid and hazardous waste management, and air quality engineering and modeling.
- Prepare graduates of the program for successful careers in environmental engineering to fulfill the market needs in the field.
- Prepare high-quality graduates who can advance their existing career in Environmental Engineering to become leaders in the job market.

Admission

Admission requirements are the same as those for the Master of Science Program.

Courses (33 credit hours)

Course work for the Master of Engineering degree requires the completion of 33 credit hours as follows:

I- Engineering core (6 credits)

- ENGR 5240 - Engineering for a Sustainable Environment (3 cr.)

One course (3 cr.) is selected out of

- ENGR 5202 - Computational Methods in Engineering (3 cr.)
- ENGR 5204 - Engineering Statistics (3 cr.)
- ENGR 5210 - Experimental Methods in Engineering (3 cr.)

II- Environmental Engineering core (15 credits)

- ENVE 5250 - Water Quality Control (3 cr.)
- ENVE 5251 - Unit Operations in Environmental Engineering (3 cr.)
- ENVE 5252 - Air Pollution Control Engineering (3 cr.)
- ENVE 5254 - Solid and Hazardous Wastes Engineering (3 cr.)
- ENVE 5255 - Environmental Chemistry (3 cr.)
- ENVE 5258 - Groundwater Hydrology and Contamination (3 cr.)

III- Elective Courses (12 credit hours)

Four courses (12 cr.) are to be selected from a set of graduate courses in engineering, physical sciences, social sciences, management and other related graduate-level courses subject to advisor and director's approval. No more than one 4000-level course in engineering, computer science and other related areas, not in the student's undergraduate major, may be taken for graduate credit subject to advisor and director's approval.

Master of Science

Environmental Engineering (M.Sc.)

The Master of Science program in Environmental Engineering is an interdisciplinary engineering degree program that is administered by a director and a steering committee from the engineering departments. Other faculty members from the School of Sciences and Engineering participate in the program. It provides a broad program of study in preparation for careers in advanced engineering areas in addition to in depth knowledge in Environmental Engineering with a strong research component. Graduates will be prepared for Ph.D. studies or for research and leadership in government, industry and international consulting companies.

Program Objectives

The objectives of the Master of Science in Environmental Engineering graduate program are to:

- Enable graduates of the program to conduct analytical and experimental studies in water quality analysis and modeling, water and wastewater treatments, solid and hazardous waste management, and air quality engineering and modeling.
- Prepare environmental engineers to advance their academic careers and excel in their research capabilities to peruse further studies in doctoral programs in local and international universities.
- Prepare high-quality graduates who can advance their existing career in Environmental Engineering to become leaders in the job market.

- Prepare graduates of the program for successful careers in environmental engineering at the local, regional and global levels.

Admission

A candidate for the master's program in environmental engineering must have a Bachelor's degree in engineering. Admission is also subject to the general university requirements for graduate study, including English language proficiency. A minimum GPA of 3.0 out of 4.0 is required for full admission into the master's program. Students who have some deficiency in their undergraduate training but are well-qualified in other aspects may be admitted provisionally. The program director may prescribe a program of noncredit work to make up for the deficiency.

Courses (24 credit hours)

A minimum of eight courses (24 credit hours) is required. The courses are selected from the following categories:

I- Core Courses (12 credit hours)

All students must take the following four core courses:

- ENGR 5210 - Experimental Methods in Engineering (3 cr.)
- ENGR 5240 - Engineering for a Sustainable Environment (3 cr.)
- ENVE 5251 - Unit Operations in Environmental Engineering (3 cr.)
- ENVE 5254 - Solid and Hazardous Wastes Engineering (3 cr.)

II- Concentration Courses (12 credit hours)

Students should select four courses from the following list of courses:

- ENGR 5202 - Computational Methods in Engineering (3 cr.)
- ENGR 5204 - Engineering Statistics (3 cr.)
- ENVE 5250 - Water Quality Control (3 cr.)
- ENVE 5252 - Air Pollution Control Engineering (3 cr.)
- ENVE 5255 - Environmental Chemistry (3 cr.)
- ENVE 5258 - Groundwater Hydrology and Contamination (3 cr.)
- ENVE 5930 - Advanced Topics in Engineering (3 cr.)
- ENVE 6250 - Advanced Treatment Processes (3 cr.)

Thesis (9 credit hours)

Graduate thesis work is a required part of the Master of Science in Environmental Engineering degree program.

ENGR 5940 - Graduate Thesis Seminar (3 cr.)

Various research topics are discussed in ENGR 5940, which must be completed before registering for thesis credits.

ENVE 5980 - Research Guidance Thesis (3 cr.)

A student must register for ENVE 5980 after the completion of 15 credit hours. Students must register in ENVE 5980 for at least two semesters for a total of six credit hours. After that, ENVE 5980 is taken for one billable credit hour each semester until completion of the program requirements. Students will not be allowed to register for the second time in ENVE 5980 unless they have defended their thesis proposal.

Nanotechnology Program

Director: M. Swillam

Steering Committee:

Professors: N. Allam, A. Amleh, M. Anis, O. Hosny, Y. Ismail, W. Mamdouh, and H. Salem.

Master of Science

Nanotechnology (M.Sc.)

Masters of Science in Nanotechnology

The Masters of Science in Nanotechnology provides academic excellence in advanced sciences and technologies through an interdisciplinary education in the fields of materials science, physics, chemistry, and engineering preparing students for careers in industry, education, and research, with the capacity necessary to compete and excel in the ever-expanding world of nanotechnology.

This program is facilitated by the available state-of-the-art equipment at the Yousef Jamil Science and Technology Research Center (YJSTRC).

A minimum of 33 credit hours are required for the Masters of Science degree. This consists of 24 credit hours of courses, 6 credit hours of thesis work, and 3 credit hours of seminar.

Program Objectives

Graduates of the Masters of Science in Nanotechnology Program will be:

1. Professionals excelling in nanomaterials, nanofabrication, and nanoscale phenomena, advancing both academic and industrial applications.
2. Researchers who develop innovative solutions to complex challenges in healthcare, energy, and electronics.
3. Leaders or key members of teams, applying nanotechnology across various scientific and engineering domains to solve real-world problems.
4. Professionals and researchers committed to responsible research and innovation, considering environmental and societal impacts while contributing to global technological advancements.

Admissions

A bachelor's degree in sciences or engineering, with a minimum GPA of 3.0 out of 4.0 is required for admission into the nanotechnology master's program. Admission is also subject to the general university requirements for graduate programs. For those students whose grade records indicate promising ability, but who otherwise do not have adequate preparation in sciences or engineering, admission may be granted under the requirement that remedial courses will be taken.

Courses (24 credit hours):

The program of study is planned with the faculty advisor, and should include 12 hours of core courses, a minimum of 6 credit hours of electives, and a maximum of 6 credit hours of general electives.

I. Core Courses (12 credit hours)

- NANO 5203 - Advanced Testing and Characterization Techniques (3 cr.)
- NANO 5205 - Nanochemistry (3 cr.)
- NANO 5206 - Management and Economics of Nanotechnology (3 cr.)
- NANO 5207 - Advanced Nanophysics (3 cr.)

II. Nanotechnology Elective courses (at least 6 credit hours)

A minimum of 6 credit hours are required from this list of courses.

- NANO 5200 - Nanomaterials, Synthesis, Processing and Applications (3 cr.)
- NANO 5202 - Simulation and Modeling for Nanoscale Materials and Systems (3 cr.)
- NANO 5204 - Fabrication of Nanomaterials For Films And Devices (3 cr.)
- NANO 5210 - Advanced Quantum Mechanics (3 cr.)

- NANO 5221 - MEMS/NEMS Technology and Devices (3 cr.)
- NANO 5222 - Advanced Semiconductor Physics (3 cr.)
- NANO 5232 - Nanocomposite Science and Technology (3 cr.)
- NANO 5233 - Materials for Energy Conversion and Storage (3 cr.)
- NANO 5241 - The Chemistry of Nanostructures (3 cr.)
- NANO 5242 - Nanoelectrochemistry (3 cr.)
- NANO 5251 - Nanotechnology Applications in Construction Materials (3 cr.)
- NANO 5252 - Nanotechnology in Studying Damage and Failure in Structures (3 cr.)
- NANO 5261 - Advanced Solid-State Devices (3 cr.)
- NANO 5262 - Advanced Integrated Circuit Design (3 cr.)
- NANO 5271 - Bionanotechnology (3 cr.)
- NANO 5910 - Independent Studies (1-3 cr.)
- NANO 5930 - Selected Topics in Nanotechnology (3 cr.)

III. General Elective Courses (Maximum 6 credit hours)

A maximum of two courses are selected as electives. The courses are selected from a set of graduate courses in all engineering disciplines, physical sciences, social sciences, management and other related graduate or 4000-level courses subject to advisor's and program director's approval.

Thesis (9 credit hours)

Graduate thesis work is a required part of the Master of Science in Nanotechnology degree program.

SCI 5940 - Graduate Thesis Seminar (3 cr.)

Various research topics are discussed in SCI 5940, which must be completed before registering for thesis credits.

NANO 5980 - Research Guidance Thesis (3 cr.)

A student must register for NANO 5980 after the completion of 15 credit hours. Students must register in NANO 5980 for at least two semesters for a total of six credit hours. After that, NANO 5980 is taken for one billable credit hour each semester until completion of the program requirements. Students will not be allowed to register for the second time in NANO 5980 unless they have defended their thesis proposal.

Robotics, Control and Smart Systems Program

Director: A. El-Kadi

Steering Committee:

Professors: K. Seddik

Associate Professors: M. Badran, A. Elmougy, C. Salama

Master of Engineering

Robotics, Control and Smart Systems (M.Eng.)

Master of Engineering in Robotics, Control and Smart Systems (RCSS)

The Master of Engineering in Robotics, Control and Smart Systems provides academic excellence through an interdisciplinary education in the fields with the aim to prepare graduate students for careers in industry, education and research (local, regional and global).

Program Objectives

The Master of Engineering in Robotics, Control and Smart Systems graduates engineers who :

1. Have a broad foundation in both the theoretical and the practical skills of RCSS interdisciplinary knowledge space.
2. Integrate fundamental and advanced knowledge to solve complex interdisciplinary problems in the field of RCSS.
3. Work independently as well as collaboratively within interdisciplinary teams and prepared to be team leaders.
4. Synergize technology, professional advancement, and work strategies through projects to solve problems of professional interest and to demonstrate professional skills.

Admissions

A bachelor's degree in engineering, with minimum GPA of 3.0 out of 4.0 in major area is required as a basic requirement or admissions into the RCSS master's program. Admission is also subject to the general university requirements for graduate programs. For those students whose grade records indicate promising ability, but who otherwise are not have adequate preparation in sciences or engineering, admission may be granted under the requirement that remedial courses will be taken.

Program Structure

A total of 33 credit hours are required for the Master of Engineering in RCSS. The program of study should include 33 credit hours of courses.

Courses (33 credit hours):

I. Group I (6 credit hours)

A minimum of 6 credit hours are required from this list of courses:

- RCSS 5201 - Robotics: Kinematics, Dynamics and Control (3 cr.)
- RCSS 5202 - Embedded Real Time Systems (3 cr.)
- RCSS 5203 - Modern Control Design (3 cr.)
- RCSS 5204 - Applied Estimation (3 cr.)

II. Group II (18 credit hours)

A minimum of 18 credit hours are required from this list of courses:

- RCSS 5221 - Intelligent and Autonomous Robotic Systems (3 cr.)
- RCSS 5222 - Mechatronics Innovations and Experimental Robotics (3 cr.)
- RCSS 5223 - Bioinspired Robotics and Multi Robotic Systems (3 cr.)
- RCSS 5224 - Robotics and Intelligent Automated Manufacturing (3 cr.)
- RCSS 5231 - Teleoperation, Haptic Systems and Collaborative Control (3 cr.)
- RCSS 5232 - Robust and Optimal Control (3 cr.)
- RCSS 5233 - Nonlinear and Adaptive Control (3 cr.)
- RCSS 5234 - Networked Control Systems: Design and Applications (3 cr.)
- RCSS 5241 - Smart Systems and Computational Intelligence (3 cr.)
- RCSS 5242 - MEMS/NEMS Technology and Devices (3 cr.)
- RCSS 5243 - Image Analysis and Computer Vision (3 cr.)
- RCSS 5244 - Sensors, Perception and Smart Systems (3 cr.)
- RCSS 5245 - Advanced Artificial Intelligence (3 cr.)
- RCSS 5930 - Selected Topics in RCSS (3 cr.)

III. Group III (3 credit hours)

- RCSS 5980 - Capstone Project (3 cr.)

IV. Group IV (6 credit hours)

Select (6 credits) from the above two groups or from other graduate courses in engineering, physical sciences, or management subject to advisor and director's approval. No more than one 4000-level course in engineering or other related areas, not in the student's undergraduate major, may be taken for graduate credit subject to advisor and director's approval.

Master of Science

Robotics, Control and Smart Systems (M.Sc.)

Master of Science in Robotics, Control and Smart Systems (RCSS)

The specialized master program in Robotics, Control and Smart Systems (RCSS) provides interdisciplinary academic and educational excellence in advanced sciences and technologies with a unique educational, learning, and research environment that advances scientific understanding enabling students to develop innovative and intelligent ideas for autonomous and smart products and systems to meet today's most pressing challenges and prepare them for careers in industry, academia, and research.

The Master of Science in Robotics, Control and Smart Systems, provides academic excellence through an interdisciplinary education in the fields with the aim to prepare graduate students for careers in industry, academia, and research (local, regional and global).

This program is facilitated by the available state of the art equipment at two Mechatronics Laboratories (Mechatronics Design Lab., Mechatronics and Intelligent Systems Lab.) in the Mechanical Engineering department and MEM/NEM facilities at Yousef Jameel Science and Technology Research Center (YJSTRC).

Program Objectives

The Master of Science in Robotics, Control and Smart Systems graduates scientists and engineers who:

1. Apply Integrated Knowledge: Graduates of the program will apply integrated knowledge of robotics, control systems, and smart technologies to develop innovative solutions for complex interdisciplinary problems. They will showcase their ability to merge concepts to solve real-world challenges.
2. Lead and Engage in Interdisciplinary Research: Graduates will lead and contribute to groundbreaking research in the fields of robotics, control, and smart systems. They will produce new insights and effectively communicate their findings to both technical and non-technical audiences.
3. Function as Independent and Collaborative Professionals: Graduates will function as independent professionals and collaborative team members in diverse, interdisciplinary teams. They will take on leadership roles in projects involving integration, automation, and design, driving these projects to successful completion through their expertise.
4. Pursue Professional and Academic Excellence: Graduates will achieve significant professional advancements and pursue further academic qualifications, contributing to

advancements in robotics, smart systems, and control technologies. They will actively engage in research initiatives within industry, research institutions, and academia on both local and global scales, helping shape the future of the field.

Admissions

A bachelor's degree in engineering, with a minimum GPA of 3.0 out of 4.0 in the major area is required as a basic requirement or admission into the RCSS master's program. Admission is also subject to the general university requirements for graduate programs. For those students whose grade records indicate promising ability, but who otherwise do not have adequate preparation in sciences or engineering, admission may be granted under the requirement that remedial courses will be taken.

Program Structure

A total of 33 credit hours are required for the Master of Science in RCSS. The program of study should include 24 credit hours of courses, 9 credit hours of thesis work.

Courses (24 credit hours)

I. Group I (6 credit hours)

A minimum of 6 credit hours are required from this list of courses:

- RCSS 5201 - Robotics: Kinematics, Dynamics and Control (3 cr.)
- RCSS 5202 - Embedded Real Time Systems (3 cr.)
- RCSS 5203 - Modern Control Design (3 cr.)
- RCSS 5204 - Applied Estimation (3 cr.)

II. Group II (12 credit hours)

A minimum of 12 credit hours are required from this list of courses:

- RCSS 5221 - Intelligent and Autonomous Robotic Systems (3 cr.)
- RCSS 5222 - Mechatronics Innovations and Experimental Robotics (3 cr.)
- RCSS 5223 - Bioinspired Robotics and Multi Robotic Systems (3 cr.)
- RCSS 5224 - Robotics and Intelligent Automated Manufacturing (3 cr.)
- RCSS 5231 - Teleoperation, Haptic Systems and Collaborative Control (3 cr.)
- RCSS 5232 - Robust and Optimal Control (3 cr.)
- RCSS 5233 - Nonlinear and Adaptive Control (3 cr.)
- RCSS 5234 - Networked Control Systems: Design and Applications (3 cr.)
- RCSS 5241 - Smart Systems and Computational Intelligence (3 cr.)

- RCSS 5242 - MEMS/NEMS Technology and Devices (3 cr.)
- RCSS 5243 - Image Analysis and Computer Vision (3 cr.)
- RCSS 5244 - Sensors, Perception and Smart Systems (3 cr.)
- RCSS 5245 - Advanced Artificial Intelligence (3 cr.)
- RCSS 5910 - Independent Study in Robotics, Control and Smart Systems (RCSS) (1-3 cr.)
- RCSS 5930 - Selected Topics in RCSS (3 cr.)

III. Group III (6 credit hours)

Select (6 credits) from the above two groups or from other graduate courses in engineering, physical sciences, or management subject to advisor and director's approval. No more than one 4000-level course in engineering or other related areas, not in the student's undergraduate major, may be taken for graduate credit subject to advisor and director's approval.

Thesis (9 credit hours)

Graduate thesis work is a required part of the Master of Science in the RCSS degree program.

ENGR 5940 - Graduate Thesis Seminar (3 cr.)

Various research topics are discussed in ENGR 5940, which must be completed before registering for thesis credits.

RCSS 5981 - Research Guidance Thesis (3 cr.)

A student must register for RCSS 5981 after the completion of 15 credit hours. Students must register in RCSS 5981 for at least two semesters for a total of six credit hours. After that, RCSS 5981 is taken for one billable credit hour each semester until completion of the program requirements. Students will not be allowed to register for the second time in RCSS 5981 unless they have defended their thesis proposal.

Office of the Associate Dean for Graduate Studies and Research - SSE

The Engineering core and ENGR and SCI seminar courses are administered by the Office of the Associate Dean for Graduate Studies and Research, School of Sciences and Engineering. All admitted graduate students pursuing their master's degrees in the different Engineering departments/programs (ARCH, CENG, ECNG, ENVE, MENG, PENG, and RCSS) are required to select from those ENGR core courses which provide students with research fundamentals and methodology. The seminar course (ENGR 5940) is also a requirement of the thesis and research

component that has to be fulfilled by all graduate engineering students. All admitted graduate students pursuing their master's degrees in the different Science departments/programs (BIOT, CHEM, CS, GHHE, PHYS, NANO, and SSDV) are required to take the seminar course (SCI 5940) for the thesis and research component that has to be fulfilled by all graduate science students.

Refer to respective departments for information on graduate programs and degrees offered.

Office of the Associate Dean for Undergraduate Studies - SSE

All science and engineering students are required to take a set of common science and/or engineering courses (SCI and/or ENGR). The objective of these courses is to introduce the fundamentals of science and engineering majors, and prepare the students for the more specialized courses. The common science and engineering courses are administered by the Office of the Associate Dean for Undergraduate Studies, School of Sciences and Engineering, and taught by faculty (subject matter experts) from SSE departments.

Refer to the respective department for the required SCI and/or ENGR courses.

Course Prefix Identification and Coding Rationale

Courses are identified by a prefix, which refers to the department offering the course, a four-digit number, a decimal point, and a two-digit number indicating the section number. Not all departmental prefixes represent fields in which a degree is offered; some represent minors and others only courses. This system is consistent across the university.

• 1000-level courses are intended for Freshmen (full-time, credit-earning students in their first year of coursework at AUC).
• 2000-level courses are intended primarily for Sophomore students.
• 3000-level courses are normally designed for Juniors.
• 4000-level courses are designated for Seniors, although superior students of Sophomore or Junior standing may be admitted with permission of the department offering the course.
• 5000 and 6000-level courses are designed and intended for graduate and post-graduate students.

However, when the 5000-level courses have 1 as the second digit, (i.e. 51XX) this indicates that the course may be taken by advanced (Senior and, in exceptional cases approved by the instructor,

Junior level) undergraduate students as well. The same applies to 6000-level courses, which are generally intended for PhD level students. When 6000-level courses have 1 as the second digit (i.e. 61XX), this indicates that the course may be taken by advanced Masters-level students as well.

The second, third, and fourth digits are used by individual departments and programs to indicate the subarea, concentration or specialization within a degree offered, or proper sequence of courses within a particular subarea.

Courses ranging from 52XX-59XX are open to graduate students; however, a senior student who has a B average may take two graduate courses, not exceeding six credits, either for graduate credit or for completion of requirements for the bachelor's degree. In this case the chair of the department concerned must notify the registrar's office.

The departmental prefixes used in labeling courses are given below:

Schools/Departments	**PREFIX**	**Description**
Core Curriculum	CORE	Core Curriculum
	SEMR	Seminar
The Academy of Liberal Arts		
Department of Arabic Language Instruction	ALNG	Arabic Language Cr
	ALIN	Arabic Language Int
	ALIS	Arabic Language Int
	ALWT	Arabic Writing Cour
	AIAS	Center for Advance
Department of English Language Instruction	ELIN	Intensive English
	ENGL	English
Department of Rhetoric and Composition	RHET	Rhetoric and Comp
Office of the Associate Dean for Undergraduate Studies	FLNG	Foreign Languages
Onsi Sawiris School of Business		
Youssef Nabih Department of Accounting	ACCT	Accounting

Mohamed Shafik Gabr Department of Economics	ECON	Economics
Heikal Department of Management	BADM	Business Administra
	ENTR	Entrepreneurship
	FINC	Finance
	MGMT	Management
	MKTG	Marketing
	MOIS	Management of Inf
	OPMG	Operations Manage
Office of the Associate Dean for Graduate Studies and Research	EMBA	Executive Master in
	CEMS	International Mana
Office of the Associate Dean for Undergraduate Studies and Administration	BUSC	School of Business
School of Global Affairs and Public Policy		
Department of Journalism & Mass Communication	JRMC	Journalism and Mas
Department of Law	LAW	Law
Department of Public Policy and Administration	PPAD	Public Policy and Ad
Center for Migration and Refugee Studies	MRS	Migration and Refu
Kamal Adham Center for Television and Digital Journalism	TVDJ	Television and Digit
Prince Alwaleed Bin Talal Bin Abdulaziz Alsaud Center for American Studies and Research	AMST	American Studies
School of Humanities and Social Sciences		
Department of Applied Linguistics and Educational Studies	APLN	Applied Linguistics
	EDUC	Education
	LING	Linguistics
The Sheikh Hassan Abbas Sharbatly Department of Arab and Islamic Civilizations	ARIC	Arab and Islamic Civ

	MEST	Middle East Studies
Department of English & Comparative Literature	ECLT	English and Compar
Sultan Al-Qasimi Department of History	CREL	Comparative Religio
	HIST	History
Department of Philosophy	PHIL	Philosophy
Department of Political Science	POLS	Political Science
Department of Psychology	PSYC	Psychology
Department of Sociology, Egyptology and Anthropology	ANTH	Anthropology
	EGPT	Egyptology
	SOC	Sociology
	SOC/ANTH	Anthropology/Socio
Department of the Arts	ARTV	Visual Arts
	DSGN	Graphic Design
	FILM	Film
	MUSC	Music
	THTR	Theatre
The Cynthia Nelson Institute for Gender and Women's Studies	GWST	Gender and Women

School of Sciences and Engineering

Department of Architecture	ARCH	Architecture
Department of Biological, Chemical and Global Health Sciences	BIOL	Biology
	BIOT	Biotechnology
	CHEM	Chemistry
	GHHE	Global Public Health
	GREN	Sustainable Develop

Department of Computer Science and Engineering	CSCE	Computer Science a
Department of Construction Engineering	CENG	Construction Engine
Department of Electronics and Communications Engineering	ECNG	Electronics and Com
Department of Mathematics and Actuarial Science	DSCI	Data Science
	MACT	Mathematics, Actua
Department of Mechanical Engineering	MENG	Mechanical Enginee
Department of Petroleum and Energy Engineering	PENG	Petroleum Engineer
Department of Physics	PHYS	Physics
Doctorate of Philosophy (Ph.D.) Program	All 6000 level courses in:	Biotechnology
	BIOT	Construction Engine
	CENG	Chemistry
	CHEM	Computer Science a
	CSCE	Electronics and Com
	ECNG	Environmental Engi
	ENVE	Mathematics and A
	MACT	Mechanical Enginee
	MENG	Nanotechnology
	NANO	Ph.D. in Engineering
	PHDE	Ph.D. in Applied Sci
	PHDS	Ph.D. in Applied Sci
	PHDS/PHDE	Engineering
Environmental Engineering Program	ENVE	Environmental Engi
Nanotechnology Program	NANO	Nanotechnology
Robotics, Control and Smart Systems Program	RCSS	Robotics, Control ar
Office of the Associate Dean for Graduate Studies and Research	ENGR	Graduate ENGR cou
	SCI	Graduate Science co

Office of the Associate Dean for Undergraduate Studies	ENGR SCI	Undergraduate ENG Undergraduate Scie
Libraries and Learning Technologies	LALT	Libraries and Learni

Note Concerning Course Schedules
Most course descriptions indicate the semester that each course is usually offered, but this information is subject to change and some courses are not taught every year. The registrar's office publishes a detailed schedule of courses offered at the beginning of each semester which contains accurate information on which courses are offered, at what time and by whom they are taught. Please check the Registrar's Schedule of Classes webpage.

For long-term planning, students should consult their advisers and/or individual departments for help designing their programs of study. Students coming from the United States, especially year-abroad students, should contact the university's office in New York for current information about specific course offerings.

Courses

Accounting

ACCT 2001 - Financial Accounting (3 cr.)

Description
The course introduces accounting as a discipline and the various uses of accounting information. It covers the accumulation, processing, and communication of accounting information. The measurement of assets, liabilities, equities and income are emphasized.

When Offered
Offered in fall and spring.
Notes
Enrollment in is limited, and priority is given to students seeking the Bachelor of Business Administration degree or the Bachelor of Accounting degree, students enrolling in specified as collateral requirements in other majors, and students who have declared business administration as a minor.

ACCT 2002 - Managerial Accounting (3 cr.)

Prerequisites
ACCT 2001

Description
Introduction to management accounting in terms of modern cost accounting and budgetary systems. The course emphasizes management uses of accounting information in the planning and controlling of business operations in the manufacturing and services sectors.

When Offered
Offered in fall and spring.
Notes
Enrollment in is limited, and priority is given to students seeking the Bachelor of Business Administration degree or the Bachelor of Accounting degree, students enrolling in specified as collateral requirements in other majors, and students who have declared business administration as a minor.

ACCT 3001 - Intermediate Accounting I (3 cr.)

Prerequisites
ACCT 2001

Description
An in-depth coverage of accounting valuation processes, accounting income measurement, and disclosure issues in financial reports.

When Offered
Offered in fall and spring.
Notes
Enrollment in is limited, and priority is given to students seeking the Bachelor of Business Administration degree or the Bachelor of Accounting degree, students enrolling in specified as collateral requirements in other majors, and students who have declared business administration as a minor.

ACCT 3002 - Intermediate Accounting II (3 cr.)

Prerequisites
ACCT 3001

Description
A continuation of Intermediate Accounting I (ACCT 3002), focusing on the liabilities and equity sections in various types of ownership.

When Offered
Offered in fall and spring.
Notes
Enrollment in is limited, and priority is given to students seeking the Bachelor of Business Administration degree or the Bachelor of Accounting degree, students enrolling in specified as collateral requirements in other majors, and students who have declared business administration as a minor.

ACCT 3003 - Advanced Accounting (3 cr.)

Prerequisites
ACCT 3002

Description
This course focuses on accounting aspects of equity investments, mergers and acquisitions, and intercompany transactions. Topics include the preparation and analysis of consolidated financial statements and other advanced accounting issues such as special purpose entities (SPEs) and foreign currency transactions and translations.

When Offered
Offered in fall and spring.
Notes
Enrollment in is limited, and priority is given to students seeking the Bachelor of Business Administration degree or the Bachelor of Accounting degree, students enrolling in specified as collateral requirements in other majors, and students who have declared business administration as a minor.

ACCT 3004 - Cost Accounting (3 cr.)

Prerequisites
ACCT 2002

Description
Analysis of management accounting reports for decision making purposes. Cost analysis techniques, budgeting and performance evaluation and cost data for quantitative models and control systems.

When Offered
Offered in fall and spring.
Notes
Enrollment in is limited, and priority is given to students seeking the Bachelor of Business Administration degree or the Bachelor of Accounting degree, students enrolling in specified as collateral requirements in other majors, and students who have declared business administration as a minor.

ACCT 3005 - Auditing (3 cr.)

Prerequisites
ACCT 3002

Description
The course introduces the basics of assurance and attestation services and the role of auditing in enhancing the credibility of financial statements. Topics covered will include factors affecting the auditing profession, auditor's characteristics, types of audit evidence, the audit process and the auditor's report.

When Offered
Offered in fall and spring.
Notes
Enrollment in is limited, and priority is given to students seeking the Bachelor of Business Administration degree or the Bachelor of Accounting degree, students enrolling in specified as collateral requirements in other majors, and students who have declared business administration as a minor.

ACCT 3006 - Principles of Taxation (3 cr.)

Prerequisites
ACCT 3002 - Intermediate Accounting II (3 cr.)

Description
The main objective of this course is to present an in-depth analysis of how tax laws and regulations affect a business enterprise. The course introduces theoretical tax concepts that support the understanding of taxation in general and the Egyptian tax system in particular. Tax implications on both individuals and businesses are examined.

When Offered
Offered in fall and spring.
Notes
Enrollment in is limited, and priority is given to students seeking the Bachelor of Business Administration degree or the Bachelor of Accounting degree, students enrolling in specified as collateral requirements in other majors, and students who have declared business administration as a minor.

ACCT 3007 - Accounting Analytics (3 cr.)

Prerequisites

ACCT 2001, ACCT 2002, MACT 2222

Description
Data analytics is an analytical process by which data, information technology and statistical analysis are used to help managers gain improved insight about their operations and make better data driven decisions. Given the dramatic effect that data analytics is having on financial reporting, managerial accounting, auditing and taxation, accounting professionals are expected to know how data is created, collected, cleaned and analyzed. This course is designed to help students gain sufficient understanding of the analytical mindset. Additionally, this course offers both theoretical and hands-on learning experience on data collection, exploration, preparation and analysis as pre-requisites to formulate and solve business problems in general and accounting problems in particular.

This course offers the students the necessary background and hands-on experience to work with datasets that showcase how analytics could be applied to different areas of accounting that have been covered in other accounting courses like financial accounting, managerial accounting, fraud detection, auditing and taxation.

When Offered
Offered in Fall and Spring.

ACCT 4000 - Automated Financial Accounting (3 cr.)

Prerequisites
MOIS 2101 and ACCT 3002

Description
This course focuses on the application of financial accounting in businesses using Enterprise Resource Planning (ERP) systems as a platform to manage the financial resources and controls of a business entity. It starts with the conceptual foundations of accounting information systems, internal controls and auditing with a focus on the computerization of core accounting cycles. The course requires students to utilize their knowledge in accounting to analyze and use ERP systems through a complete cycle of transaction processing and reporting. The course emphasizes the application of information technology in financial accounting.

ACCT 4001 - Contemporary Issues in Auditing and Forensic Accounting (3 cr.)

Prerequisites
ACCT 3005

Description
This course highlights the practical and governance aspects of the auditing function and its role in promoting financial transparency. Topics covered will include professional ethics, materiality and risk, fraud auditing, sampling techniques, auditing in IT environment, auditing some operational cycles and forensic accounting techniques.

When Offered
Offered in fall and spring.

ACCT 4002 - Special Topics in Tax Accounting (3 cr.)

Prerequisites
ACCT 3006

Description
This course builds on its prerequisite Principles of Taxation (ACCT 3006). The course focuses on advanced topics such as the effects of taxation on investment, business planning and decision-making within an Egyptian corporate setting. International taxation concepts and applications are also introduced.

When Offered
Offered in fall and spring.

ACCT 4004 - Financial Statement Analysis and Sustainability Reporting (3 cr.)

Prerequisites
ACCT 3002 and FINC 3201

Description
This interdisciplinary course introduces accounting measures for the three dimensions of corporate performance; economic, social, and environmental. On the economic front, various financial statement analysis techniques are covered with a focus on ratio analysis. Methods of earnings management are also presented. On the social and environmental fronts, the course covers sustainability accounting analysis methods such as the life-cycle assessment (LCA), the social return on investment (SROI), and the concept of carbon accounting. This course combines lecturing and hands-on teaching methods to provide a comprehensive overview of existing knowledge in corporate sustainability performance.

ACCT 4005 - Contemporary Issues in Financial Reporting (3 cr.)

Prerequisites
Graduating Senior.

Description
This is a capstone course that will engage students in analysis of a wide range of contemporary issues in financial accounting and reporting by expanding and integrating students' knowledge of the Egyptian Accounting Standards and International Financial Reporting Standards (IFRS) in a

rigorous study of the current and advanced financial reporting issues that relate to Assets, Liabilities, Equity, Income and Disclosures.

When Offered
Offered in fall and spring.

ACCT 4070 - Special Topics in Accounting (3 cr.)

Prerequisites
Prerequisite: Consent of Instructor.

Description
Considers selected topics of current relevance in Accounting.

When Offered
Offered occasionally.
Notes
Enrollment in is limited, and priority is given to students seeking the Bachelor of Business Administration degree or the Bachelor of Accounting degree, students enrolling in specified as collateral requirements in other majors, and students who have declared business administration as a minor.

ACCT 4075 - Independent Study in Accounting (1-3 cr.)

Prerequisites
Prerequisites: Senior standing and consent of ACCT unit head and chair.

Description
Guided readings, research, and discussions on specific selected topic in Accounting.

When Offered
Offered occasionally.
Notes
Enrollment in is limited, and priority is given to students seeking the Bachelor of Business Administration degree or the Bachelor of Accounting degree, students enrolling in specified as collateral requirements in other majors, and students who have declared business administration as a minor.

ACCT 5201 - Financial Reporting and Analysis (3 cr.)

Description
This is a basic course in financial accounting covering financial reporting by business entities. It develops the framework for the analysis, classification, reporting, and disclosure of business transactions. The preparation and interpretation of financial statements and reports, and ethical issues are emphasized.

When Offered
Offered in fall and spring.

ACCT 5211 - Accounting for Managers (1.5 cr.)

Prerequisites
Co-requisite: ENTR 5211

Description
This foundational course provides a working knowledge of accounting as an information system used by managers. The course primarily focuses on financial reporting by business entities covering the analysis of transactions, the different elements of financial statements, and the interpretation of financial information with its accompanying disclosures. Other areas also introduced include auditing, corporate governance, and basic managerial and cost accounting concepts. The course serves as a financial toolbox to be used in managerial decision making.

ACCT 5301 - Managerial Accounting for Decision Making (3 cr.)

Prerequisites
BADM 5310

Description
This course focuses on corporate decision-making skills for managers by concentrating on the concepts and practices of managerial accounting. The emphasis is on building a general framework for choosing among alternative cost systems for operational control and product cost and profitability measurement. The course covers recent conceptual and analytical developments in the area of management accounting, including study of modern and relevant

planning, control techniques and their underlying concepts as applied to various functional areas within the firm, and performance evaluation.

When Offered
Offered in fall and spring

ACCT 5370 - Selected Topics in Accounting (3 cr.)

Prerequisites
BADM 5310

Description
It considers offering contemporary topics of current relevance in Accounting.

When Offered
Offered occasionally.

ACCT 5375 - Independent Study in Accounting (1-3 cr.)

Prerequisites
Consent of the Instructor and Director of the program.

Description
Guided readings, research, and discussions on specific selected topic in Accounting.

When Offered
Offered occasionally.

American Studies

AMST 1090 - What is America? (3 cr.)

Description

The course examines key themes and major issues in American history and society that gives freshmen students an insight and a deeper understanding of the United States of America. The course also examines a number of themes in American history, including isolationism versus interventionism, conflicts over slavery, consumerism, the end of the cold war and the U.S. rise to a sole superpower.

AMST 1091 - Exploring Feminist Perspectives in Egypt and the US (3 cr.)

Description

The course introduces the core concepts underlying the interdisciplinary field-formation of feminist studies within multiple geopolitical contexts. Explores how feminist inquiry rethinks disciplinary assumptions and categories, and animates our engagement with culture, history, and society in Egypt and the United States. Topics include: the social construction of gender; the gendered division of labor and production; political constructs; reproduction; intersections of gender, race, class, and religion.

AMST 1099 - Selected Topics for Core Curriculum (3 cr.)

Description
Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

AMST 2096 - Selected Topics for Core Curriculum (3 cr.)

Prerequisites
RHET 1010

Description
Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

AMST 2190 - Is America Still a Superpower? (3 cr.)

Description
Is the U.S. still a superpower? This course examines the rise of the U.S. to become the sole

superpower in less than 250 years. Students will study some of the most important documents in American history: The Declaration of Independence, the Constitution and the Bill of Rights. But also understand the US voting system, some of the main presidential doctrines that reflect the evolution of U.S. foreign policy. Students will also investigate how today's economic system is of the U.S. making.

AMST 3000 - Selected Topics in American Studies (3 cr.)

Prerequisites
RHET 1010

Description
Course addressing broad intellectual concerns in American studies and accessible to all students, irrespective of major.

AMST 3010 - American Literature to 1900 (3 cr.)

Description
Selected readings of literary works beginning with pre-Columbian oral traditions and moving from the colonial era to the early national period through to the late nineteenth century.

Cross-listed
Same as ECLT 3010 .

AMST 3011 - Modern American Literature (3 cr.)

Description
Works of twentieth-century American writers. The reading list may be chosen to reflect changing ethnic and cultural phenomena and will vary from year to year.

Cross-listed
Same as ECLT 3011 .

AMST 3016 - American Philosophy (3 cr.)

Description
The course examines philosophy in North America, focusing on the central themes of democracy and pragmatism. A guiding question of the course will be: How is the democratic process embedded in the philosophic enterprise? The views of major thinkers such as Peirce, James, Royce, Santayana, Dewey, Quine, and Hartshorne will be examined.

Cross-listed
Same as PHIL 3016 .

AMST 3100 - The US and the World Economy (3 cr.)

Prerequisites
Sophomore Standing or Higher

Description
The course will look at the relationship between the U.S. and the global monetary, financial and trading systems. From a historical perspective, the course will examine how the U.S. power has evolved in the post-World War Two as well as the emergence of the Bretton Woods institutions (IMF and World Bank) and the World Trading Organization (WTO). Current issues include but not restricted to the role and weight of the newly emerging industrialized countries. (BRICS: Brazil, Russia, India, China, and South Africa), the continued reliance on the U.S. dollar as the predominant reserve currency, and the impact of the growing American indebtedness on the world economy.

AMST 4001 - Selected Topics for Core Curriculum (3 cr.)

Description
Examination of specific topics and themes related to the field of American Studies. May be repeated for credit if content changes.

AMST 4444 - Media Law and Policy (3 cr.)

Prerequisites
JRMC 2203, Junior standing

Description

An explanation of communication law and regulation with its major segments libel, privacy and news-gathering together with journalists' rights and defenses against libel suits. Issues of national and international topics are covered together with media law cases.

Cross-listed
Same as JRMC 4444

Anthropology

ANTH 1005 - Why You Matter: Debt, Labor, and Value from Anthropological Perspectives (3 cr.)

Description
This course explores the social lives of value in different perspectives. We will explore international loans and colonial extractions, gifting systems and occult and racial economies in order to better understand how certain lives are made to matter differently, and what we can do about it.

ANTH 1099 - Selected Topics for Core Curriculum (3 cr.)

Description
Course addressing broad intellectual concerns and accessible to students as part of the Freshman Level of the Core Curriculum.

ANTH 2005 - Arab Society (3 cr.)

Prerequisites
RHET 1020 or concurrent.

Description

This course examines the social and cultural characteristics of contemporary Arab Societies, from anthropological and sociological perspectives.

When Offered

Offered in fall and spring.

ANTH 2006 - Youth Cultures: Anthropologies of Politics and Style (3 cr.)

Description

This course explores the conceptual and methodological approaches to the study of youth cultures over the last one hundred years in order to be able to interpret and understand youth cultures in the Arab world. The course covers literature on youth cultures , subcultures and countercultures in the 20th and 21st centuries, covering domains such as music, arts, ideas and politics of young people from a range of cultural settings. The course also examines generational conflict, social inequality and authoritarianism, a globalizing economy and mass media, and continuity and change in the way young people experience self, group and social structures.

ANTH 2007 - Anthropology of the Occupied (3 cr.)

Description

What do Northeastern Syria and Gaza have to do with Ferguson Missouri and Black Mesa Arizona? Taking examples from ongoing occupations globally, this course will build on a comparative approach, treating occupation as a strategy forged in exchanges of instruments and techniques between occupying powers, and tracing the way resistance and refusal give rise to unlikely (and unplanned) solidarities from occupied Palestine to the inner cities of the US, from native reservations in North America to the mining towns of Southern Africa.

ANTH 2096 - Selected Topics for Core Curriculum (3 cr.)

Description

ANTH 2096 offers students the ability to complete global studies credit through electives that are grounded in anthropological debates and approaches.

Hours

2.5

When Offered

One section will be offered each semester.

ANTH 2098 - Selected Topics in Egypt (3 cr.)

Description
Areas to be chosen according to specific interest and faculty expertise. Examples of possible classes are: Everyday politics in Egypt.

When Offered
Every semester.
Repeatable
May be taken for credit more than once if content changes.

ANTH 2099 - Selected Topics for Core Curriculum (3 cr.)

Description
Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

When Offered
Offered occasionally.

ANTH 2101 - Cultural Anthropology (3 cr.)

Description
Cultural anthropology is an exploration of human diversity and what we have in common. It is a journey of questioning, understanding, and respecting the rich and complex tapestry of human practices, beliefs, and expressions we call “culture.” In this course we will encounter a wide variety of practices and beliefs, including our own, and we will examine how these are related to global power relations; also, we will explore how anthropologists, with their own particular ideological and theoretical perspectives, attempt to understand these matters.

When Offered
Offered in fall and spring.

ANTH 3015 - Global Families: Kinship and Relatedness (3 cr.)

Prerequisites
Three hours of Social Sciences.

Description

Transformation of family and kin structures and relations in present-day globalization. Impacts of urbanization, international migration, consumerism, economic and other factors on families and kin groups. Why and how people legitimize their kin relationships in the eyes of their community, their state, and their religion, and how different family structures are tied to naturalizing certain forms of power. Comparative perspectives from the Middle East and other world areas.

When Offered

Offered in alternate years.

ANTH 3075 - Language in Culture (3 cr.)

Prerequisites

Three hours of Social Sciences.

Description

The role played by language in humankind's symbolic relation to the world. Emphasis on linguistic analysis, ethnosemantics, sociolinguistics, expressive speech and language and socialization as these elucidate patterns of cognitive orientation.

Cross-listed

Same as LING 3075 .

When Offered

Offered occasionally.

ANTH 3080 - Gender, Sexuality and Social Change (3 cr.)

Prerequisites

Three hours of Social Sciences.

Description

An introduction to the study of gender ideologies, including a cross-cultural comparison of how genders are constructed to create different norms of masculine, feminine, and other categories linked to various forms of sexuality. Focus on analyzing how inequalities are maintained and contested over time through gendered discourses and practices at home, at work, and at local,

national and international levels. Special emphasis on the uses of gender in justifying and challenging development agendas in the Global South.

When Offered
Offered in alternate years.

ANTH 3090 - Public Anthropology (3 cr.)

Prerequisites
Three hours of Social Sciences.

Description
Cultural dynamics involved in social and economic change with special reference to Egypt and the Middle East. Community development, cooperatives, population studies, resettlement, health and education are some of the problems that may be discussed. Case studies and fieldwork.

When Offered
Offered in alternate years.

ANTH 3095 - Death, Immortality and the Afterlife (3 cr.)

Prerequisites
Three hours of social sciences.

Description

"What makes us human?" We may think that it is our ability to use language, or our capacity for abstract thinking, making history, crafting art, and developing religions, or is it our cognitive facility to conceptualize 'death' and ultimately seek immortality? This course aims to answer these questions by exploring the 'deep history' of death from prehistory to the present. Realizing that this question goes beyond the capacity of any single academic discipline, we turn to history, cultural anthropology, archaeology, palaeontology, developmental psychology, and comparative religions to explore the universal human search for the meaning of death and seeking immortality.

When Offered
Offered occasionally.

ANTH 3096 - Selected Topics in Global Studies (3 cr.)

Prerequisites
Three hours of social sciences.

Description
Areas to be chosen according to specific interest and faculty expertise. Examples of possible areas are: Humans and Animals in Anthropology.

Repeatable
May be taken for credit more than once if content changes.

ANTH 3098 - Selected Topics in Anthropology (3 cr.)

Description

This course offers students the opportunity to study major and emerging areas of Anthropological scholarship while focusing on Egypt as a cultural setting. Activities and assessment are designed to apply anthropological concepts to engage students with diverse Egypt-focused themes.

ANTH 3099 - Selected Topics in Anthropology (3 cr.)

Description

This course offers students the opportunity to study major and emerging areas of Anthropological scholarship at their intersection with other disciplines in the Humanities and Social Sciences. The course involves ethnographic insights from a range of cultural settings making them transdisciplinary and cross-cultural.

ANTH 3104 - Contemporary Social Theory (3 cr.)

Prerequisites
SOC 3102

Description
Introduces students to major theories in contemporary social thought in Anthropology and

Sociology.

When Offered
Offered in spring.

ANTH 3105 - Fieldwork Methods (3 cr.)

Prerequisites
ANTH 2101 and 6 credit hours of social sciences or consent of instructor.

Description

Logic and philosophy of qualitative methodology in anthropology and other social sciences. The process of research design, data collection, analysis and interpretation of results and final write-up is elaborated with specific reference to research conducted in Egypt, the wider Arab and Middle Eastern worlds and elsewhere. Discussion of the politics and ethics of fieldwork, including protection of the rights of human participants in research projects.

When Offered
Offered in fall.

ANTH 3301 - Anthropologies of Middle East and North Africa (3 cr.)

Prerequisites
3 hours of Social Sciences.

Description
Analysis of contemporary debates in anthropological engagements with and in the Middle East and North Africa. The course explores the histories of ethnographic research in the Middle East and North Africa, colonialism and post-independence experiences, power and representation, performance and the arts, religious sensibilities, gender and kinship networks.

When Offered
Offered occasionally

ANTH 3302 - Anthropologies of Africa (3 cr.)

Prerequisites
Three hours of Social Sciences.

Description
Analysis of contemporary debates in anthropological engagements with and in Africa. The course explores the histories of ethnographic research in Africa, colonialism and post-independence experiences, power and representation, performance and the arts, religious sensibilities and kinship networks.

When Offered
Offered occasionally

ANTH 3305 - Selected Topics in Arab World Studies (3 cr.)

Prerequisites
Three hours of Social Sciences.

Description
Areas to be chosen according to specific interest and faculty expertise. Examples of possible areas are: Anthropology of Food.

When Offered
Every semester.
Repeatable
May be taken for credit more than once if content changes.

ANTH 4020 - Anthropology of Violence (3 cr.)

Prerequisites
9 hours of social science

Description
This course examines the analytical object "violence" in its differentiated dimensions. What we think of as violence encompasses multiple phenomena that cannot only be understood as forces of destruction: violence must be grasped as also generative of life-worlds. The course

inquires into the nature of violence, explores its epistemological and existential, sensual and structural, exceptional and ordinary dimensions, and forms.

ANTH 4025 - Religion in a Global World (3 cr.)

Prerequisites
Nine hours of social sciences and junior or senior standing.

Description

This course explores anthropological and sociological approaches to religion and how these intersect with other socio-cultural, political and economic practices globally.

When Offered
Offered occasionally.

ANTH 4030 - Women, Islam and the State (3 cr.)

Prerequisites
9 hours of Social Sciences and Junior or Senior standing.

Description
An anthropological perspective on the politics of gender in Muslim societies, with an emphasis on the Middle East. The relationship between religion and society, especially the cultural construction of gender hierarchies within the discourses of Islam and the realities of Muslim women's lives. The articulation of the impact of modern states on gender hierarchies.

When Offered
Offered annually.

ANTH 4065 - Culture, Economy and the Everyday (3 cr.)

Prerequisites
9 hours of social sciences and junior or senior standing.

Description
Examination of how anthropology has approached the study of economic practices, ideas and

institutions in different cultural contexts. By following the main theoretical paradigms in economic anthropology, the course will address the cultural assumptions and power dynamics in defining what an economy is and how people go about producing, consuming and exchanging goods, commodities, gifts, services, as well as social relationships. Ethnographic case studies will explicate the power relations underlying the pursuit of economic lives, the centrality of gender, class, race, kinship and ethnic relations in shaping production, consumption and exchange, and the ramifications of global markets on peoples' livelihoods and identities.

When Offered
Offered in alternate years.

ANTH 4070 - Political Anthropology (3 cr.)

Prerequisites
9 hours of Social Sciences and Junior or Senior standing.

Description
This course examines the contribution of anthropology to the comparative study of political organization and the exercise of power. It reviews classical anthropological approaches to politics in non-state and non-Western state societies. The course also examines political organization in postcolonial and global contexts, including such topics as nationalism, migration, transnational mobilization, ethnic identity and flexible citizenship, and the use of media technologies in developing political subjectivities. There is an emphasis on theoretical perspectives.

When Offered
Offered in alternate years.

ANTH 4075 - Migrants and Transnationals (3 cr.)

Prerequisites
9 hours of Social Sciences and Junior or Senior standing.

Description
The course examines the experiences and relationships of people who move across states and national boundaries and whose identifying labels range from migrants, transnationals, guest-

workers, exiles, refugees, and diaspora, among others. One underlying thread is that of dislocation and movement, while maintaining connections - real, symbolic and imagined - between disparate places and peoples.

ANTH 4085 - Discourse Analysis: Working with language in use (3 cr.)

Description

Many researchers work with textual material in the form of interview transcripts, ethnographic field notes and other types of semiotic material like archives, social media, newspapers, film and images. Yet a persistent challenge for young scholars is establishing a systematic and well evidenced approach to analyzing their research material.

Discourse analysis is a broad approach to language in use. It helps us to to unravel the form and functions of particular discursive constructions to chart their implication in particular social contexts. Importantly DA provides a step by step process to analysis and encourages researchers to think carefully about their material, how it can be analyzed in a well evidenced manner and how to be transparent about your claims.

Textual material cannot be understood as unproblematic representation of behavior, social relations and cognition. Discourse analysis approaches problematise texts, suggesting that they may have performative or rhetorical functions like mitigating blame, justifying or reflecting power relations, creating consensus, regimes of truth and so on.

In this course we will read about the various ways in which textual material can be analyzed and we will invest considerable time in the practice of conducting discourse analysis. We will cover five main approaches to discourse analysis:

1. Working with interviews and transcripts
2. Foucauldian discourse analysis
3. Critical discourse analysis
4. Multi-sensory multimodal and social semiotics
5. Doing Discourse Analysis

When Offered

According to program needs

ANTH 4099 - Selected Topics in Anthropology (3 cr.)

Prerequisites
Prerequisites: 9 hours of social sciences, and junior or senior standing.

Description
.Topics to be chosen according to specific interest, such as: agrarian transformation, desert development, sex roles, cognitive anthropology, anthropology and education; nationalism, colonialism and postcolonialism; tourism in social science; and anthropology of the city.

When Offered
Offered occasionally
Repeatable
May be taken for credit more than once if content changes.

ANTH 4107 - Senior Thesis (3 cr.)

Prerequisites
Senior standing and SOC 3105 or ANTH 3105 or 12 hours of Social Sciences.

Description

Emphasis on current methodological trends in anthropology and sociology reflecting the research interests of the faculty and students, and drawing on the experience of the undergraduate career.

When Offered
Offered in spring.
Notes
Content may therefore vary from year to year. The student will be required to write a methodologically sound senior paper, preferably based on field research.

ANTH 4203 - Practicum in Community Development (3 cr.)

Prerequisites
Six hours of social sciences or consent of the instructor.

Description

One semester, field experience in an approved international development agency, local NGO or other professional setting approved by faculty supervisor. Supervised by a faculty member.

Cross-listed
Same as PSYC 4203
When Offered
Offered in spring.

ANTH 4405 - Independent Study (1-3 cr.)

Prerequisites
Prerequisites: a minimum B average, consent of the instructor, and approval by the unit head and the department chair.

Description
In exceptional circumstances some senior majors with departmental approval may arrange to study beyond the regular course offerings.

When Offered
Offered in fall and spring.
Repeatable
May be repeated for credit more than once if content changes.

Applied Linguistics

APLN 5100 - Methods of TESOL I (3 cr.)

Description
This course provides a survey of learning theories, individual learning styles and strategies as they relate to the teaching and learning processes. It also offers a critical analysis of major approaches and methods of teaching foreign languages. The course includes classroom observations and limited practice teaching.

APLN 5101 - The Phonetics of Arabic (3 cr.)

Description

Phonetics of Arabic as it is spoken at various levels in Egypt, studied in light of modern phonetic theory. Reference is made to the phonetics of both Egyptian colloquial Arabic and the Arabic of the early Islamic era as described by the early Arab phoneticians. Taught in Arabic and/or English.

When Offered
Offered in the fall.

APLN 5102 - The Linguistics of Arabic (3 cr.)

Description
History and development of the Arabic Language and Linguistics. Particular attention will be given to topics such as: Major events that shaped Arabic throughout History, the codification of the language, Arab linguistics theory and its contributions to the study of syntax. Morphology, and lexicography, the various schools of thought among Arab philologists in the light of modern linguistic theory and language situation in Arabic society. Taught in Arabic and/or English.

When Offered
Offered in alternate years.

APLN 5103 - Advanced Arabic Grammar (3 cr.)

Description
An examination of the basic concepts in traditional Arabic grammar using modern linguistic theories with the aim of suggesting alternative methods of analysis and formalization. Taught in Arabic.

When Offered
Offered in fall and spring.

APLN 5104 - Second Language Acquisition (3 cr.)

Description
This course investigates the relationship between first and second language acquisition. Topics addressed include aspects of acquisition from a psycholinguistic perspective and cognitive,

linguistic, personality and classroom factors influencing SLA. The course also provides a wide range of Implications for language teaching and learning.

APLN 5105 - English Grammar (3 cr.)

Description
This course provides a descriptive overview of the structure of English and a detailed analysis of major grammatical constructions. It also offers a wide range of implications for language teaching and learning.

APLN 5111 - Language Variation and Change (3 cr.)

Description
This course investigates Arabic language variation and change within the framework of variation theories and with respect to the particularities of Arabic as a multiglossic language. Both written and spoken discourse is analysed with special attention to formal spoken or educated spoken Arabic. The course provides a practical approach to dealing with Arabic language corpora and trains students to analyse linguistic data.

APLN 5124 - Introduction to Computational Linguistics (3 cr.)

Prerequisites
APLN 5021

Description
An introduction to the fundamental concepts of computational linguistics, which is an interdisciplinary field at the nexus of linguistics and computer science. Topics include: publicly available language processing tools and resources, finite state automata, probability theory and frequency distributions, classification, clustering, and semi-supervised machine learning. Hands-on experience with using and developing regular expressions, morphological analyzers, part-of-speech taggers, syntactic parsers, and semantic interpreters.

APLN 5132 - Language and Politics (3 cr.)

Prerequisites

APLN 5301 - Principles of Linguistic Analysis (3 cr.)

Description
This course explores how language reflects and makes political thought and ideologies. It will also shed light on issues of language and national identity.
By drawing on linguistic theories, the course will cover areas as diverse as education and politics, discourses related to racism and exclusion in political contexts, and colonial history and its impact on language ideologies and linguistic choices.

APLN 5202 - Second Language Acquisition (3 cr.)

Prerequisites
Permission of the department. Recommended prerequisite: APLN 5302

Description
Relationship between first and second language acquisition. Aspects of acquisition from a psycholinguistic perspective. Cognitive, linguistic, personality and classroom factors influencing SLA. Applications for teaching.

When Offered
Offered in fall and spring.

APLN 5203 - Methods of Teaching a Foreign Language I (3 cr.)

Description
Survey of learning theories, individual learning styles and strategies as they relate to the teaching and learning processes. Examination and critical analysis of major approaches and methods of teaching foreign languages. The course includes classroom observations and limited practice teaching.

When Offered
Offered consecutively with APLN 5204

APLN 5204 - Methods of Teaching Arabic to Non-native Speakers II (3 cr.)

Prerequisites

APLN 5203

Description
Survey of teaching practices and pedagogical concerns pertaining to teaching of Arabic to non-native speakers with focus on how the language system and its diglossic nature affect the process of teaching the various language skills. The teaching practicum includes observation of classrooms, material development and supervised teaching of Arabic to speakers of other languages.

APLN 5205 - Introduction to Arabic Sociolinguistics (3 cr.)

Description
The effect of social phenomena on linguistic form. Languages, dialects, and speech communities. Multilingual societies, diglossia, code choice. Regional, social and linguistic variation. Terms of address. Language attitudes. Language and ethnicity. Language maintenance and shift. Language and gender. Language planning and standardization. Sociolinguistic aspects of education.

When Offered
Offered once a year.

APLN 5206 - Seminar on Challenges Facing AFL Teachers (3 cr.)

Prerequisites
APLN 5205

Description
The course provides the intellectual basis, as distinct from methods of teaching, for the design of curriculum and the teaching of the different language skills of Arabic to speakers of other languages. Special attention is given to four areas: The Alphabet's historical development and variation; vocabulary scope, the root system and Arabic derivational system; syntax, historical development and recent attempts for simplifications; language levels, diglossia, multiglossia and language continuum in Egypt.

APLN 5212 - Designing, Selecting, and Evaluating Teaching Material for Foreign language Classes (3 cr.)

Description
This course surveys approaches to selection, evaluation, adaptation, and design of teaching material to help student-teachers develop principled frameworks for carrying out the mentioned activities. The course also highlights the various aspects that affect the process of developing successful teaching material for language classes (learning styles, learning contexts, available sources etc.).

When Offered
Offered in fall and spring.

APLN 5270 - Selected Topics in Applied Linguistics (3 cr.)

Description
Special topics and current issues in linguistics and language teaching.

Repeatable
May be taken more than once if content changes.

APLN 5271 - Supervised Study in TAFL (3 cr.)

Prerequisites
Prerequisite: consent of instructor.

Description
Individual research on specific area of interest to the student.

When Offered
Offered in fall and spring.
Repeatable
May be taken a second time if content changes.

APLN 5299 - Research Guidance and Thesis (no cr.)

Description
Consultation for students on matters related to their thesis.

When Offered
Offered in fall and spring.

APLN 5301 - Principles of Linguistic Analysis (3 cr.)

Description
Concepts fundamental to linguistic analysis in the areas of syntax, semantics, phonology, historical linguistics, sociolinguistics, and language acquisition.

When Offered
Offered in fall.

APLN 5302 - Research Methods in Applied Linguistics (3 cr.)

Description
Provides TESOL/TAFL MA candidates with the knowledge and skills to read and understand various types of research in applied linguistics, to have a basic grasp of the issues currently being studied in the field, and be able to critically distinguish between good and poor research. Ability to write in appropriate technical fashion is emphasized.

APLN 5305 - Assessment in Language Learning (3 cr.)

Description
A practical course that will enable the student to develop valid and reliable assessment procedures, analyze results, and evaluate the procedures.

APLN 5311 - Thesis Proposal Writing (3 cr.)

Prerequisites
APLN 5302

Description
A seminar specially designed for thesis track candidates and others who wish to pursue research in TESOL. Students will explore their specific research interests and are expected to share their ideas and constructive criticism with other members of the class. The aim of this course is to guide the student towards the production of a proposal for a possible thesis or future research.

APLN 5313 - Second Language Listening and Speaking: Theory and Practice (3 cr.)

Prerequisites
APLN 5100.

Description
Drawing on previous research in second language acquisition, this course will examine pedagogical applications of various theories of language learning to the teaching of ESL listening and speaking. The main topics emphasized in the course are the following: designing and constructing listening and speaking tasks at different levels of difficulty while achieving a balance between accuracy and fluency, criteria for selecting authentic vs. pedagogically-designed listening tasks, teaching macro- and micro- listening strategies, analyzing the linguistic and pragmatic skills required for spoken interaction, and developing assessment criteria and contexts for the language classroom. Ways to integrate listening and speaking activities into other language classes and learning contexts will also be considered.

APLN 5314 - Second Language Writing: Theory and Practice (3 cr.)

Description

This course provides a comprehensive overview of current research and practices in the field of second language writing. The first part of the course focuses on basic issues concerning theoretical frameworks and approaches in the context of writing instruction. Then, the second section taps into a wide range of topics related to L2 writing and writers, including: effects of culture and L1 background, ownership, voice and identity, feedback in writing classes, writing features across various proficiency levels, and writing assessment. The final part delves into issues of writing teacher education and directing a language program. The course should be of interest to those interested in pursuing a career either as a writing researcher, instructor, or writing program administrator. Students in this class will be involved in a wide range of activities and also in collecting and analysing classroom writing data.

The main objective of this course is to provide students with main concepts in the field of second language writing. The course employs a number of teaching methods including lecturing, classroom discussions, and hands-on experiences. Students have to participate in class discussions and read assigned materials before coming to class. Students are also required to complete a number of assignments in this course.

APLN 5317 - Integrating Technology into Language Pedagogy (3 cr.)

Description

Technology has the potential to significantly enhance language teaching and learning when integrated effectively. However, many language educators may find the implementation process challenging. This course is designed for current and future language educators who aim to effectively integrate technology into their teaching practice. We will begin by exploring past and present approaches, methods, and techniques for foreign language teaching, reflecting on how various technologies have been incorporated. Next, we will delve into the use of established and emerging digital tools to support the development of communicative competence as learners engage in language acquisition. We will explore how to use these tools to create interactive and collaborative activities that foster language learning. Finally, we will focus on specific emerging technologies for communicative and task-based language teaching, including digital game-based and mobile-assisted language learning.

APLN 5321 - Corpus Linguistics (3 cr.)

Prerequisites
APLN 5301

Description
An introduction to the analysis of large collections of computer-readable texts (corpora) using concordance software. Focus on analytic techniques at the levels of morphology, lexicography, grammar, pragmatics and discourse. Pedagogical applications for English for academic purposes and in data-driven learning.

APLN 5322 - Language Pragmatics (3 cr.)

Prerequisites
APLN 5301

Description
Definition of pragmatics. Relation of pragmatics to semantics, syntax and sociolinguistics. Speech act theory. Directness and indirectness. The Cooperative Principle, principles of politeness, Relevance Theory. Cross-linguistic/cultural application. Relevance to language teaching.

APLN 5323 - Discourse of Analysis for Language Teachers (3 cr.)

Prerequisites
APLN 5301

Description
Discourse analysis is typically thought of as studying language use above the sentence level. The central focus is on "how real people use real language, as opposed to studying artificially created sentences" (McCarthy, 1991, p.1). This course will provide an overview of the theories and methods of discourse analysis. We will explore various approaches to the analysis of both spoken and written texts and examine practical implications for language teachers and students. The course will be beneficial for students who are interested in conducting discourse based research and who would like to know how to use discourse analysis methods in their language classes.

APLN 5331 - Sociolinguistics (3 cr.)

Description
The effect of social phenomena on linguistic form. Languages, dialects, and speech communities. Multilingual societies, diglossia, code choice. Regional, social, and linguistic variation. Terms of address. Language attitudes. Language and ethnicity. Language maintenance and shift. Language and gender. Language planning and standardization. Sociolinguistic aspects of education.

APLN 5332 - Intercultural Communication (3 cr.)

Prerequisites
APLN 5100.

Description
This course will raise language professionals' awareness of their own cultural assumptions, sensitize them to the multiplicity of other world views, and equip them with the means to assess and respond to their students' cultural orientation. The course includes theoretical readings, analysis of critical incidents, values clarification, and experiential intercultural activities and field observations leading to an ethnography of communication which analyzes a given speech community's communicative norms. The course has four main areas of concentration: a theoretically-grounded conceptualization of intercultural communication, an overview of variations in pedagogical traditions across cultures and ways these can affect language learning effectiveness, a practical component focusing on developing teachers' own intercultural communicative competence, and a methodological component which explores ways of promoting intercultural communicative competence among language learners.
Among the concepts covered are macro-level cultural dimensions, cultures within cultures, cross-cultural variability in relationships, transmitting and interpreting verbal and non-verbal messages, managing conflict and face threats, intergroup attitudes, identity negotiation, acculturation, assimilation and ethical considerations in intercultural communication.

APLN 5371 - Supervised Study in TESOL (3 cr.)

Prerequisites
Consent of instructor.

Description
Individual research on a specific area of interest to the student in consultation with the instructor.

Repeatable
May be taken a second time if content changes.

APLN 5397 - Methods of TESOL II (3 cr.)

Prerequisites
APLN 5100

Description
Survey of approaches to the design and implementation of foreign language curricula and teaching materials. This teaching practicum is a capstone course and as such must be taken

during a student's final semester in the program. It includes foreign language classroom observations, supervised practice teaching, and materials development, selection, and adaptation.

APLN 5398 - Comprehensives (no cr.)

Description
Students who need to complete a comprehensive exam as part of the requirements of their program must enroll in APLN 588/5398 - Comprehensives (no cr.). This course provides a forum for independent review of the main concepts of the program core subject areas in preparation for the comprehensive examination. The student will take a written examination at the conclusion of the course and must receive a passing grade to be successful. An oral examination is required in addition to the written examination. The comprehensive examination may be repeated once. A student who fails the comprehensive examination a second time would be dismissed from the degree program at the end of the semester in which the examination was retaken.

Arab and Islamic Civilizations

ARIC 1099 - Selected Topics for Core Curriculum (3 cr.)

Description
Selected topic in Arab and Islamic Civilizations for the core curriculum.

ARIC 1101 - Children's Literature and Cultural Representations (3 cr.)

Description
There is more to children's literature than fairy tales. These stories reveal what society thinks about children and the lessons they want children to learn. In this class, students will explore the words and images that make up children's literature to understand what they can tell us about ideologies of identity, religion, gender, and nation.

ARIC 1102 - Passionate Love in Arabic and World Literatures (3 cr.)

Description
Passionate Love, a subject of interest to all human societies, is the subject of this course.

Passionate Love is distinct from other forms of romantic love in that it can cause harm to the lover and beloved, as well as those around them. From Majnun Layla to Romeo and Juliet, passionate love has long been a subject of literary interest and social anxiety. In this class, we will read theories and depictions of passionate love in classical Arabic literature to understand how pre-modern Arabo-Islamic societies understood love as a phenomenon, what role romantic love played in society, and what types of texts dealt with the subject. We will also read depictions of passionate love from other world literary traditions including: modern Arabic, English, Italian, Persian, Indian, Turkish, etc.

ARIC 1300 - Arabs and Muslims Encountering the Other (3 cr.)

Description
Our identities are forged in relation to others. This class examines Arab-Islamic encounters with peoples of other cultures to understand how inter-cultural and inter-confessional exchanges lead to identity formation.

ARIC 2001 - Religion and Politics in Islam (3 cr.)

Description
This course provides an introductory survey of religion and politics in Islam, from its inception to the modern period. It introduces students to basic concepts and topics in Islamic Studies and societies, such as Islamic law, theology, governance, and politics.

When Offered
Fall or Spring

ARIC 2096 - Selected Topics for the Core Curriculum in Global Studies (3 cr.)

Prerequisites
RHET 1010

Description
Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

When Offered
Offered occasionally.

ARIC 2097 - Selected Topics for the Core Curriculum in Arab World Studies (3 cr.)

Prerequisites
RHET 1010

Description
Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

When Offered
Offered occasionally.

ARIC 2098 - Selected Topics in Egypt Studies (3 cr.)

Description

Topics in the study of Egyptian history and heritage, including its built, material, literary, and religious cultures. Possible topics include: Museums, Historical Memory, and Politics in Egypt.

When Offered
Offered occasionally.
Repeatable
May be taken for credit more than once if content changes.

ARIC 2099 - Selected Topics for the Core Curriculum in Humanities and Social Sciences (3 cr.)

Prerequisites
RHET 1010

Description
Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

When Offered
Offered occasionally.

ARIC 2101 - Classical Arabic Literature (3 cr.)

Description
From pre-Islamic poetry to the Maqamah, Arabic produced a range of popular and creative literary genres that are unique in world history. This course is a tour through the Arabic literary tradition and its many highlights.

When Offered
Offered in fall and spring.
Notes
This class is taught in Arabic.

ARIC 2102 - Modern Arabic Literature (3 cr.)

Description
An overview of the major works and genres that have shaped Arabic literature from the late 19th century to the present.

When Offered
Offered in fall and spring
Notes
This class is taught in Arabic.

ARIC 2103 - Classical Arabic Literature in Translation (3 cr.)

Description
From pre-Islamic poetry to the Maqamah, Arabic produced a range of popular and creative literary genres that are unique in world history. This course is a tour through the Arabic literary tradition and its many highlights in English translation.

When Offered
Offered in fall and spring.
Notes

This class is taught in English. Students who have completed or are enrolled in ARIC 2101 are not eligible to enroll in this class.

ARIC 2104 - Modern Arabic Literature in Translation (3 cr.)

Description
An English-language overview of the major works and genres that have shaped Arabic literature from the late 19th century to the present.

When Offered
Offered in fall and spring.
Notes
This class is taught in English. Students who have completed or are enrolled in ARIC 2102 are not eligible to enroll in this class.

ARIC 2205 - The World of Islamic Architecture (3 cr.)

Description
This course offers a one-semester overview of Islamic architecture, examining visual culture and its functions in the broader context of Islamic societies from Spain to India, ranging in date from the 7th century to present. It surveys major examples of architectural typologies including mosques, madrasas, palaces, and caravanserais.

When Offered
Offered in fall and spring.
Notes
Classwork is supplemented by field trips, usually scheduled on Friday or Saturday mornings.

ARIC 2206 - The City of Cairo (3 cr.)

Description
This course introduces students to the unparalleled architectural and urban heritage of the city of Cairo, while delving into broader themes in urban studies and cultural preservation. It is enriched by several field trips to different neighborhoods of historic Cairo throughout the semester in addition to classroom sessions.

When Offered
Offered in fall and spring.
Notes
Classwork is supplemented by field trips, usually scheduled on Friday or Saturday mornings.

ARIC 2270 - Islamic Art And Architecture (650-1250) (3 cr.)

Description

This survey course immerses students in the architecture and material culture of Islamicate societies across a vast territory spanning from North Africa to the Indus Valley and beyond. Stretching from the rise of Islam in the 7th century to the Mongol conquest of Baghdad in the mid-13th century, it focuses on the most iconic monuments and objects of these societies, primarily works commissioned in major urban centers by the ruling classes and those emulating them.

Notes
Classwork is supplemented by field trips usually scheduled on Friday or Saturday mornings.

ARIC 2271 - Islamic Art And Architecture (1250-1800) (3 cr.)

Description

This survey course immerses students in the architecture and material culture of Islamicate societies and their global reception, from the mid-13th century up to the 19th century. Focusing on the most iconic monuments and objects produced in these societies, students analyze pre-modern developments in visual arts and their impact on modern and contemporary theory and practice.

Notes
Classwork is supplemented by field trips, usually scheduled on Friday or Saturday mornings.

ARIC 2346 - Survey of Arab History (3 cr.)

Description
How did the Arab World become the Arab World? This course presents the most important political, economic, social, religious, and cultural developments in the Arabic-speaking Middle

East in the period 600-1800 CE.

Cross-listed
Same as HIST 2203.
When Offered
Offered in fall and spring.

ARIC 3020 - Introduction to Sufism (3 cr.)

Description
Beginning with a look at mystical experiences in Islam, this course studies the development of Sufism from a set of practices and beliefs to a set of diverse and influential institutions across Africa and Asia.

ARIC 3097 - Selected Themes and Topics in Arabic Literature (3 cr.)

Description
Focuses on one theme in the classical and/or modern period such as love, satire and humor, regional literature, wisdom literature, Sufi literature, tradition and modernity, self and other, alienation and exile. See class schedule for specific theme or topic offered..

When Offered
Offered occasionally.
Repeatable
May be repeated once for credit if content changes
Notes
Taught in Arabic.

ARIC 3098 - Selected Topics in Islamic Studies (3 cr.)

Prerequisites
RHET 1020

Description
This course will focus on selected areas of Islamic Studies, such as theology, jurisprudence, and

issues relating to women and gender. A range of different Muslim and Western approaches and opinions relevant to the chosen topic will be considered, as will as broader social dimensions.

ARIC 3104 - Arabic Literature and Gender (3 cr.)

Description
Investigates the construction of gender, both masculine and feminine, through readings in a variety of Arabic discourses.

When Offered
Offered in fall or spring.
Notes
Taught in Arabic.

ARIC 3106 - Arabic Literature and Film (3 cr.)

Description
Looks at the intersection between literature and film as two modes of representation. Readings of Arabic literary texts, and in class screenings of films.

When Offered
Offered in fall or spring.
Notes
Taught in Arabic.

ARIC 3107 - The Writer and the State (3 cr.)

Description
Explores the nature of the relationship between writers and authority, in allegiance or in opposition.

When Offered
Offered in fall or spring.
Notes
Taught in Arabic

ARIC 3108 - Colloquial and Folk Literature (3 cr.)

Description
Arabic colloquial and folk literature through the study of various genres.

When Offered
Offered in fall or spring.
Notes
Taught in Arabic.

ARIC 3109 - The World of Mahfouz (3 cr.)

Description
An introduction to the work of Naguib Mahfouz (1911-2006) that combines the study of literature, film, and history. Students will learn about the multiple facets of Mahfouz's career, including his work as a screenwriter, the historical events he lived through, and how these experiences shaped his writings.

Notes
This class is taught in English.

ARIC 3114 - The Arabic Novel (3 cr.)

Description
Study of different trends in the Arabic novel. In-depth reading of major modern Arab novelists.

When Offered
Offered in fall or spring.
Notes
Taught in Arabic.

ARIC 3115 - Arabic Drama (3 cr.)

Description
Study of Arabic drama through readings of major texts.

When Offered
Offered in fall or spring.
Notes
Taught in Arabic.

ARIC 3116 - The Arabic Short Story (3 cr.)

Description
Study of the short story as a genre in modern Arabic literature. In-depth reading of major short story writers.

When Offered
Offered in fall or spring.
Notes
Taught in Arabic.

ARIC 3197 - Selected Themes and Topics in Arabic Literature in Translation (3 cr.)

Description
Focuses on one theme or topic in the classical and/or modern period such as political poetry, village and city, literature of place, Arab women writing. See class schedule for specific theme or topic offered.

When Offered
Offered in fall or spring.
Repeatable
May be repeated once for credit if content changes
Notes
Taught in English, with assigned texts in English translation.

ARIC 3267 - Arts of the Loom: Carpets and Textiles of the Islamic World (3 cr.)

Description
This course serves as an introduction to the world of Islamic art, through the lens of the arts of the loom. Classroom sessions are complemented by field trips to local museums.

When Offered
Offered occasionally.
Notes
Classwork is supplemented by field trips, usually scheduled on Friday or Saturday mornings.

ARIC 3268 - The Art of the Book in the Islamic World (3 cr.)

Description

While focusing on Persian book painting from the Mongols to the Safavids, the course will also briefly consider Arab, Turkish and Mughal arts of the book. In addition to the history of painting it explores matters related to patronage, book production, calligraphy and illumination.

When Offered
Offered annually.
Notes
Classwork is supplemented by field trips, usually scheduled on Friday or Saturday mornings.

ARIC 3269 - The Arts of Fire: Ceramics and Glass of the Islamic World (3 cr.)

Description
This course surveys ceramics and glass of the Islamic world from the 7th to the 18th centuries, tracing the technical and artistic innovations of the medium. Visits to local museums will enhance the student's appreciation of the subject.

When Offered
Offered occasionally.
Notes
Classwork is supplemented by field trips, usually scheduled on Friday or Saturday mornings.

ARIC 3271 - Building for Islam: Architecture of the Early Caliphates in Egypt and Syria (3 cr.)

Description
This course examines developments in the Islamic architecture and decorative styles in Egypt and Syria through the late 12th century, under the Umayyad, Abbasid and Fatimid dynasties,

and features field trips to Cairo monuments.

When Offered
Offered occasionally.
Notes
Classwork is supplemented by field trips, usually scheduled on Friday or Saturday mornings.

ARIC 3272 - Building the Sultanate: Architecture under the Ayyubids and Mamluks in Egypt and Syria (3 cr.)

Description
This course examines developments in the Islamic architecture and decorative styles in Egypt and Syria under the Ayyubid and Mamluk dynaties (late 12th - early 16th centuries), and features field trips to Cairo monuments.

When Offered
Offered occasionally.
Notes
Classwork is supplemented by field trips, usually scheduled on Friday or Saturday mornings.

ARIC 3273 - Building Under Empire: Ottoman-Period Architecture in Egypt and Syria (3 cr.)

Description
This course examines developments in the Islamic architecture and decorative styles in Egypt and Syria during the period of Ottoman rule.

When Offered
Offered occasionally.
Notes
Classwork is supplemented by field trips, usually scheduled on Friday or Saturday mornings.

ARIC 3319 - Islamic Spain and North Africa (711-1492 A.D.) (3 cr.)

Description
This course is an introduction to the political, economic, social, and cultural history of Muslim

Spain and North Africa. Its emphasis is on explaining how interactions among different ethnic groups (Arabs, Berbers, and Iberian natives) and different confessional communities (Jews, Christians, and Muslims) created social situations that made the Western Muslim lands unique in Islamic history.

Cross-listed
Same as HIST 3205.

ARIC 3321 - Zawiyas, Harems, Coffee shops, Everyday Life in the Pre-Modern Mideast (3 cr.)

Description
Examination of major trends in social and cultural trends, movements, and institutions in the medieval and early modern Middle East. Includes the interpretation of cultural identity, the transmission of knowledge and culture, the construction of social status, and the integration or marginalization of specific social groups in family, social and state structures.

Cross-listed
Same as HIST 3215
When Offered
Offered in alternate years.

ARIC 3323 - Marriage and the Family in the Medieval and Early Modern Middle East (3 cr.)

Description
Examination of the perspectives and approaches which define marriage, the family, the household and private life in the Middle East; the study of these questions in relation to larger issues such as Islamic law and changing social, political and economic structures, and how these are interlinked with family structure, sexual segregation, definitions of private and public. Sources include travellers' accounts, legal works, architecture, deeds of pious foundations, and court records.

When Offered
Offered in alternate years.

ARIC 3324 - Non-Muslim Communities in the Muslim World (3 cr.)

Description
Examination of the history of non-Muslim communities in the Muslim world, with special focus on Egypt. Study of legal status, issues of identity and assimilation, contribution to the cultural life and social life of societies, participation in Mediterranean trade, and interaction and relations between non-Muslim communities and Muslims as well as the non-Muslim world.

When Offered
Offered in alternate years

ARIC 3325 - Beggars, Madmen, Prostitutes: the Marginalized in Pre-Modern Mideast History. (3 cr.)

Description
The course will examine the place of marginals both in the sense of those people who are socially marginalized like beggars, people suffering from poverty, insane persons, or people who for any reason are not socially integrated. It may include those who do not have a place in history because they do not make use of the written word, such as peasants or rural communities.

When Offered
Offered in fall.

ARIC 3337 - Shi'i Muslims in History (3 cr.)

Description
This course focuses on the historical roles of Shi'i Muslims from the seventh century to the present. The aim of the course is to familiarize the student with the major Shi'i discourses as they evolved in specific historical contexts. While emphasis will be on the historical development of Twelver Shi'ism, other important groups such as the Ismai'liyya and the Zaydiyya will also receive due consideration.

Cross-listed
Same as CREL 3216

ARIC 3343 - Early Islamic History (3 cr.)

Description
In the space of a few centuries, Islam went from being a local Arabian religion to a global religion led by a continent spanning empire. This course examines Islam's emergence and the rapid expansion of the Arab-Islamic communities under the Umayyad and Abbasid dynasties covering the period from the seventh to the mid-tenth centuries.

Cross-listed
Same as HIST 3210.
When Offered
Offered in fall.

ARIC 3344 - Caliphs and Sultans in the Age of Crusades and Mongols (3 cr.)

Description
Squeezed by invasions from the west (Crusades) and the east (Mongols), the late Abbasid period saw the rise of Shiism and the Sunni Revival as well as the emergence of new dynasties like the Fatimids of Egypt and North Africa, the Seljuk Empire across the Middle East, and the post-Seljuk regimes based in Egypt such as the Ayyubids and the Mamluks.

Cross-listed
Same as HIST 3211.

ARIC 3345 - Gunpowder Empires: Ottomans, Safavids and Mughals (3 cr.)

Description
After the fall of the Mamluk Sultans of Cairo, the balance of power in West Asia shifted east, and Safavid Iran found itself squeezed between the two most powerful and wealthiest Muslim dynasties in history: the Ottomans and the Mughals. In the age of gunpowder, these empires competed among one another, but it was the rising threat of Europe that spelled danger for them all.

Cross-listed
Same as HIST 3212.
When Offered
Offered in fall.

ARIC 3346 - Egypt since the Arab Conquest (3 cr.)

Description
ARIC 3346 offers an overview of the history of Egypt from the Arab conquests of the seventh century to the beginnings of the modern period. It aims to familiarize students with major developments in the history of Egypt within the Arabic speaking world. It also aims to introduce them to history as a discipline and to encourage and develop their critical reading and critical thinking abilities.

ARIC 3353 - Islamic Political Thought (3 cr.)

Description
Muslim societies and thinkers have been debating the principles of power and governance since the rise of Islam. This class examines the history and meaning of key concepts like Ummah and Caliph, ideas of ideal societies and rulers, and their impact on contemporary political thought.

When Offered
Offered occasionally.

ARIC 3355 - State and Society in the Middle East, 1699-1914 (3 cr.)

Description

The Ottoman Empire and Iran: continuities and transformations. Imperial administration and relations with Europe. Challenges to the premodern order: regional and global economies; social and cultural trends.

When Offered
Offered once a year.

ARIC 3356 - State and Society in the Middle East, 1906-present (3 cr.)

Description

Beginning with the Young Turk and Iran's Constitutional revolutions, this course follows the fate of Middle Eastern societies and states during the twentieth century, with a special focus on

colonialism and nationalism; independence movements and decolonization; the Arab-Israeli conflict; society, politics, and culture.

When Offered
Offered in fall and spring.

ARIC 3397 - Selected Topics in Middle East History (3 cr.)

Description
Focuses on theme or topic in the history of the Middle East. May be repeated for credit when topic changes.

Cross-listed
Same as HIST 3288
When Offered
Offered occasionally.

ARIC 3405 - Islamic Philosophy (3 cr.)

Description

A thematic study of how perennial questions about creation, mind, science, ethics, history and politics arose amid and were influenced by the unique cultural context of the Arab world in dialogue with major monotheistic religious traditions. Discussions may include not only classical, but also post-classical and contemporary developments in philosophy in the Arab world.

Cross-listed
Same as PHIL 3015
When Offered
Offered occasionally.

ARIC 3435 - Introduction to the Study of Islam (3 cr.)

Description
A survey of Islam and its history from the formative period to its manifestations in modern times, with a discussion of sectarian movements such as Kharijism, Shi'ism and Sunnism, various schools of thought in law, theology, philosophy and mysticism, as well as modern

interpretations of Islam, especially with regard to political, social and gender issues.

When Offered
Offered in spring.

ARIC 5100 - Independent Study (1-3 cr.)

Prerequisites
Consent of instructor and chair required.

Description
In exceptional circumstances, some senior majors may, with department approval, arrange to study beyond the regular course offerings.

Repeatable
May be repeated for credit if content changes
Notes
Open only to senior Arabic and Islamic Studies majors with a GPA of 3.0 or above.

ARIC 5101 - Selected Topics in the History of Islamic Thought and Institutions (3 cr.)

Prerequisites
Consent of instructor.

Cross-listed
Same as HIST 4221.
When Offered
Offered in spring.
Repeatable
May be repeated for credit when content changes.

ARIC 5102 - Cairo in the Cultural Imaginary (3 cr.)

Description

In this interdisciplinary capstone course, students re-experience Cairo by analyzing its cultural history and urban formation in order to look beyond their usual orbit. The course is organized

around a series of modules, which are each focused on a specific aspect of Cairo's urban and cultural history. The class is taught through a variety of formats, including classroom sessions, field trips, walking tours, films and performances, etc. when possible.

ARIC 5103 - Source - Criticism and Classical Arabic Literature (3 cr.)

Prerequisites
ARIC 2101 or instructor's approval

Description
Source - Criticism is one of the most important philological skills at a scholar's disposal and it is fundamental to the discipline of history. It is also a critic skill for the student of pre-modern literature as it is a key source of paratextual information and not only an exercise in positivism. This course applies the idea of taphonomy (the study of fossilization processes) to literary and histological works in Classical Arabic recorded in the tadwin period. Rather than seek to legitimize or delegitimize a given text based on its historical authenticity or provenance, this course demonstrates how to integrate the dimensions of a text's transmission and its context into the study of literary material. Students will be introduced to the university's manuscript holdings and will each present an unedited literary text of their choosing to the class. Students will edit a portion of these MSS and analyze these texts in their final paper.

ARIC 5110 - Senior Seminar in Arabic Texts (3 cr.)

Description
A selected theme or topic in classical or modern Arabic texts such as regional literatures of the Arab World, cross-cultural encounters in the Mediterranean, Arabic cultural criticism, avant-garde movements in Arabic literature.

When Offered
Offered in fall or spring.
Repeatable
May be repeated once for credit if content changes
Notes
Taught in Arabic

ARIC 5111 - Senior Seminar in Arabic Literature in Translation (3 cr.)

Description
A selected theme or topic in Arabic literature, classical or modern, such as francophone and anglophone Arab writers, Andalusian literature, writers and the nation..

When Offered
Offered in fall or spring.
Repeatable
May be repeated once for credit if content changes
Notes
Taught in English, with assigned texts in English translation.

ARIC 5112 - Arabic Literary Criticism (3 cr.)

Description
Arabic critical theory from the classical to the modern period.

When Offered
Offered in alternate years.
Notes
Taught in Arabic.

ARIC 5113 - Sira and Hadith (3 cr.)

Description
The growth of the biographical literature on the Prophet and its relation to the literature of Hadith.

When Offered
Offered in fall.
Notes
Taught in Arabic unless otherwise stated

ARIC 5114 - Special Studies in Arabic Texts (3 cr.)

Description

Special readings in Arabic texts for those majors in Arabic Studies who are attending a course taught in English and who must read the assigned texts in Arabic to fulfil the requirements of their specialization.

Repeatable
May be repeated once for credit if content changes.

ARIC 5117 - Translation: Theory and Practice (3 cr.)

Description

This course focuses on the developments in the field of Translation Studies since the 1970s when translation became increasingly conceptualized as cultural transfer rather than a linguistic operation. It introduces students to the interdisciplinary approaches in the field including the impact of deconstruction, gender studies and post-colonial theory. Students will explore the cultural and political agendas of translation through selected theoretical texts. The course will also introduce students to various translation practices (adaptation, e-writing, etc)and will look at a translator's role in society, and translation as an agent social change. Students will read a selection of texts in literary theory that will inform their practice in translation. Students will situate their own work in translation not only in relation to contemporary cultural forms and practices, but also in relation to the traditions that inform current translating practices. Selected texts and translation exercises will be in English and in Arabic.

ARIC 5118 - Translation and The Arab "Renaissance" (3 cr.)

Description

Students will read pioneering works of the nineteenth and the twentieth century in the Arab region that dealt with issues of translation and its centrality to modern nation-building. What exactly is the role of the translator? What is the function of translation in society? The course situates at the act of translation within colonial/postcolonial contexts in which questions of power surround the relationship between the original text and its translation. It also explores questions of visibility and invisibility of the translator, translation vs, adaptation, original text and target cultural context. Taught in English. Readings and translation exercises in English and Arabic.

ARIC 5121 - Islamic Art and Architecture in India and Pakistan (3 cr.)

Prerequisites
ARIC 5122-5123 or consent of instructor.

Description
Religious and secular architecture and decoration of Islam in the Indian subcontinent; discussion of the formative impulses from pre-Islamic traditions of India and Pakistan and Islamic influences from Persia, Afghanistan and Central Asia.

When Offered
Offered occasionally.

ARIC 5122-5123 - Islamic Architecture in Turkey, Persia and Central Asia (3 cr.)

Prerequisites
ARIC 2270 or consent of instructor.

Description
First semester: Ghaznavids, Seljuks, and Mongols. Second semester: Timurids, Safavids, and Ottomans.

When Offered
Offered in alternate years.

ARIC 5124 - Islamic Architecture in Spain and North Africa (3 cr.)

Prerequisites
ARIC 2270 or consent of instructor.

Description
Religious and secular architecture and decoration of Islamic Spain and North Africa; discussion of formative impulses from Byzantium and Umayyad Syria.

When Offered
Offered occasionally.

ARIC 5125 - Decorative Arts of the Islamic World: Metalwork, Woodwork, and Ivory (3 cr.)

Description
This course surveys Islamic metalwork, woodwork and/or ivory objects, exploring developments of ornamental elements, material questions and aspects of design. It features field trips to local museums.

When Offered
Offered occasionally.
Repeatable
May be repeated for credit when content changes.
Notes
Classwork is supplemented by field trips, usually scheduled on Friday or Saturday mornings.

ARIC 5127 - Selected Topics in Islamic Art and Architecture (3 cr.)

Prerequisites
Appropriate course(s) from ARIC 3268-3271 series or consent of instructor

Description
Focuses on a theme or topic in Islamic Art and Architecture.

Repeatable
May be repeated for credit when topic changes.

ARIC 5130 - Poetry for Historians (3 cr.)

Prerequisites
ARIC 2101 or instructor's approval

Description
This course is deigned to give historians the tools and background they need in order to use classical Arabic poetic material for their research. To the uninitiated, classical Arabic poetry can seem recondite, vague, or inconsequential and accordingly some students of pre-modern Arabo-Islamic history often prefer to bypass the poetic material they encounter in their

research. By doing so, however, researchers risk ignoring a valuable source of historical information, especially regarding the affective dimensions of cultural, social, and political history. This course will train students to read classical Arabic poetry, to decipher its occasionally difficult syntax and figurative codes, and to relate poems to the contexts in which they appear. We will pay special attention to how poetry is deployed in historiographical works and how it relates to the context in which it is presented. The course will cover subjects that should be of interest to historians:politics, war, death, memory, elites and non-elites, gender and sexuality, and modernity.

ARIC 5131 - Arabic Historical Literature (3 cr.)

Description
Study of the inception and development of the idea of history in Arabic literature. Examines issues in the transmission of information, historical memory, and the role of historical writing in mediating social, political and religious views.

When Offered
Offered in alternate years.

ARIC 5132 - Selected Topics in Coptic Studies (3 cr.)

Description
This course allows instructors to offer a topic in Coptic Studies. The topic will be chosen from year to year in coordination with the departments concerned and the dean of the School of HUSS, and according to the individual interests and areas of expertise of the instructors. Topics chosen may include various aspects of Coptic art and history, monasticism, folklore, or other subjects. The course may be taken more than once if the topic changes.

Cross-listed
Same as EGPT 5160
When Offered
Offered in fall.
Notes
Students in these majors may petition preferably before registration to have the course included in their major requirements.

ARIC 5133 - Islamic Institutions (3 cr.)

Prerequisites
ARIC 3343 or ARIC 2346 or consent of instructor.

Description
Examination of the principal social, legal, and political institutions in medieval Islam, especially those subsumed under shari'a.

When Offered
Offered in fall.

ARIC 5134 - Modern Movements in Islam (3 cr.)

Description

Trends of thought and activism that developed throughout the Muslim world from the eighteenth century onward and identified themselves as Islamic. This course looks at intellectual roots, affiliations, and differences. It investigates modernity, reform, statehood, and social change as addressed by state and non-state actors, in theory and in practice.

Cross-listed
Same as HIST 4219.
When Offered
Offered once a year.

ARIC 5135 - Selected Topics in Middle Eastern History, 600-1800 AD (3 cr.)

Prerequisites
Prerequisite: appropriate course(s) from ARIC 3343-3345 series or consent of instructor

Cross-listed
Same as HIST 4220.
When Offered
Offered in fall and spring.
Repeatable
May be repeated for credit when content changes

ARIC 5136 - Selected Topics in the History of the Modern Middle East (3 cr.)

Prerequisites
ARIC 3355 or ARIC 3356 , whichever is appropriate or consent of instructor.

Cross-listed
Same as HIST 4288.
When Offered
Offered occasionally
Repeatable
May be repeated for credit when content changes

ARIC 5137 - International Trade 1000 - 1700: Egypt and the Mediterranean - Red Sea Trade (3 cr.)

Description
This course will examine the development of trade between East and West from the 11th to the 18th century, with special focus on trade routes as well as the commodities exchanged between the world of Islam and the main centers of commerce. Special attention is given to the role of merchants, their place within their societies and their religious, cultural, and social influence on the main centers of commerce they visited. The course also focuses on the overall political developments taking place along the Mediterranean and Indian ocean trade routes, as well as the Silk Road, the factors that affected the rise and fall of certain trading centers such as the East India Company.

ARIC 5141 - Studies in the Qur'an (3 cr.)

Prerequisites
Prerequisite: consent of instructor.

Description
The greatest work in Arabic and its influence on Arabic literature and Islamic institutions, with emphasis on methods of interpretation and their development.

When Offered
Offered in fall.

ARIC 5142 - Islamic Law (3 cr.)

Prerequisites
Prerequisite: consent of instructor.

Description
A survey of the origins of Jurisprudence in Islam and its development up to the founding of the four schools. The course covers the main sources of fiqh, Qur'an and Sunna, together with ijma' and qiyas, and the study of the growth of the Maliki, Hanafi, Shafi'i and Hanbali schools.

When Offered
Offered in fall and spring.

ARIC 5150 - On Display: Collecting and Exhibiting Art of the Islamic World (3 cr.)

Description
This seminar will investigate the history of collecting and exhibiting Islamic art and analyze the relationship of this history to contemporary practices.

When Offered
Offered occasionally.
Notes
Classwork is supplemented by field trips, usually scheduled on Friday or Saturday mornings.

ARIC 5151 - Heritage Management and Architectural Conservation in Cairo: Theory and Practice (3 cr.)

Description
Using historic Cairo as its focus, this course examines the history of the conservation and management of built heritage and its relationship to the study of Islamic architectural history. Starting with a review of theories of architectural conservation, the course survey methods of restoring and conserving the city's architecture from the medieval period to the present. A key component of the course will involve site visits to monuments and guest lectures from leading conservation experts active in Cairo over the course of the last twenty years.

When Offered

Offered occasionally.

Notes

Classwork is supplemented by field trips, usually scheduled on Friday or Saturday mornings.

ARIC 5200 - Independent Study and Readings (3 cr.)

Prerequisites

Consent of department chair.

Description

Guided readings in selected topics in Islamic Art and Architecture, Middle Eastern History, Arabic Literature and Language or Islamic Studies given on an individual basis.

When Offered

Offered occasionally.

ARIC 5201 - Bibliography and Manuscript Study (3 cr.)

Description

Techniques of working with Arabic manuscripts and scripts, editing, bibliographical study.

When Offered

Offered occasionally.

ARIC 5202 - Selected Themes in Arabic and Islamic Studies (3 cr.)

Prerequisites

Consent of instructor and department chair.

Description

This course offers additional tutorial sessions, readings, and assignments on a topic in Islamic Studies, Islamic Art and Architecture, Arabic Language and Literature, or Middle Eastern History for a graduate student who will also be required to attend the regular sessions of an undergraduate lecture course; given on an individual basis.

When Offered

Offered occasionally.

Repeatable

May be repeated for credit when content changes.

ARIC 5210 - Seminar on a Selected Work or Author in Classical Arabic Literature (3 cr.)

When Offered

Offered occasionally.

Repeatable

May be repeated for credit when content changes.

ARIC 5211 - Seminar on Modern Arabic Literature: Nineteenth Century (3 cr.)

Description

Aspects of Arabic literature in the nineteenth century.

When Offered

Offered in alternate years.

ARIC 5212 - Seminar on Modern Arabic Literature: Twentieth Century (3 cr.)

Description

Aspects of Arabic literature in the Twentieth century.

When Offered

Offered in alternate years.

ARIC 5219 - Internship in Arabic and Islamic Studies (3 cr.)

Prerequisites

Consent of department chair.

Description

This course consists of participation in an internship experience related to Arabic and Islamic Studies under the supervision of both an approved internship provider and a faculty adviser.

This course provides practical, hands-on training in research methods at a relevant institution to enhance classroom learning and allow graduate students to apply the knowledge and skills they have acquired in the program. It is meant to give students an opportunity to develop their research skills as they prepare for or work on their graduate theses. Students meet regularly with their faculty supervisor and produce a written report or research paper at the end of the internship. Consent of the department chair based on a submitted research proposal is required.

ARIC 5220 - Fieldwork in Islamic Architecture (3 cr.)

Description
Archaeological, museological or conservation methodology; examination of monuments and sites.

When Offered
Offered occasionally
Repeatable
May be repeated for credit when content changes.

ARIC 5221 - Seminar on the Architecture of a Selected Period (3 cr.)

When Offered
Offered occasionally.
Repeatable
May be repeated for credit when content changes.

ARIC 5230 - Seminar on a Selected Topic in Medieval Arab/Islamic History, 600-1800 A.D. (3 cr.)

Prerequisites
Prerequisite: consent of instructor.

When Offered
Offered occasionally
Repeatable
May be repeated for credit when content changes.

Notes
Selected topics in Medieval Arab/Islamic history, 600-1800 A.D.

ARIC 5231 - Seminar on the Nineteenth-Century Middle East (3 cr.)

Description
Readings, discussion, and research.

Cross-listed
Same as HIST 5222.
When Offered
Offered in fall.

ARIC 5232 - Seminar on the Twentieth-Century Middle East (3 cr.)

Description
Readings, discussion, and research.

Cross-listed
Same as HIST 5223.
When Offered
Offered in spring.

ARIC 5240 - Seminar on Selected Topics in Qur'anic Studies (3 cr.)

Prerequisites
ARIC 3435 or consent of instructor.

Description
Selected topics in Qur'anic Studies: e.g. history of the text or specific theme in the Qur'an (gender issued, relations with others, ethical or legal issues). The course offers an examination of the principal different Muslim and Western approaches and opinions relevant to the chosen topic, illustrated with reference to an appropriate selection of primary sources in translation and in Arabic.

When Offered
Offered annually.

ARIC 5241 - Seminar on Selected Topics in Sira or Hadith (3 cr.)

Prerequisites
ARIC 3435 or consent of instructor.

Description
Selected topics in Sira and Hadith related to basic issues of the field; e.g. the sources, the methodology of oral transmission and its influence on the assessment of authenticity, critical examination of Muslim and Western approaches to Hadith and the relationship between interpretation of the texts of Hadith and society. The course offers an examination of the principal different Muslim and Western approaches and opinions relevant to the chosen topic, illustrated with relevant selections of primary sources in translation and in Arabic.

When Offered
Offered annually.

ARIC 5242 - Seminar on Selected Topics in Islamic Law and Legal Theory (3 cr.)

Prerequisites
ARIC 3435 or consent of instructor.

Description
Selected topics in Islamic Law; e.g. Its history, methodologies, specific Islamic Legal or political theories (including international relation, minorities, human rights), administration of the criminal justice, court systems, reforms in the modern times, principles of jurisprudence (Usul al Fiqh) the concept of social interest, legal maxims. The course offers, whenever appropriate, comparisons, between the different Muslim and Western approaches to the selected Topic, illustrated with reference to the main sources in translation and in Arabic.

When Offered
Offered annually.
Notes
May be repeated for credit when content changes.

ARIC 5243 - Selected Topics in Islamic Theology, Sufism or Philosophy (3 cr.)

Prerequisites
ARIC 3435 or consent of instructor.

Description
Selected topics focusing on one of the main areas of Islamic thought (theology, Sufism, or philosophy). The course offers themes such as the history and sources of Islamic philosophy, theory of knowledge, ethics, metaphysics, the work of a leading Muslim philosopher or theologian, the relationship between mysticism and shi'ism, modern developments in Islamic thought and reforms, or new interpretations of theological questions. It also examines principle different Muslim and Western approaches and opinions relevant to the chosen topic, illustrated with reference to selections of primary sources in translation and in Arabic.

When Offered
Offered annually.
Notes
Taught in Arabic unless otherwise stated. May be repeated for Credit when content changes.

ARIC 5244 - Selected Topics in Islamic Studies (3 cr.)

Prerequisites
Pre-requisite: Consent of instructor.

Description
Selected Topics in Islamic Studies.

When Offered
Offered in spring.
Repeatable
May be repeated for credit when content changes.

ARIC 5245 - World Religions and the Study of Religion (3 cr.)

Prerequisites
Prerequisite: Enrollment in Islamic Studies MA Program.

Description
This course will introduce students to the great world religions other than Islam, and will introduce them to current theories and methods in the academic field of Religious Studies.

Cross-listed
Same as CREL 5609.

ARIC 5299 - Research Guidance and Thesis (no cr.)

Description
Consultation with students on matters related to their thesis projects.

When Offered
Offered in fall and spring.

Arabic Language

Sections with odd numbers are for international students and sections with even numbers are for Egyptian degree seeking students.

ALNG 1010 - Eye on Press (3 cr.)

Description
This course is content based and is aimed at exposing elementary level degree-seeking students to the various genres in the newspaper. It develops students' competence in Arabic Media through the four language skills. The rationale for using a newspaper is to raise awareness of cultural texts reflecting both the "little c"' and the "big c", thus enhancing students' cultural identity and understanding. The different genres in the newspaper range from advertisements, caricatures and infographics to short stories, news articles and editorials. The newspaper serves as a resource for practicing all skills. This is a blended course, students meet twice a week, for three hours in a face-to-face mode, and two hours in an online component mode. Registration requires the permission of ALNG.

Hours
5 Contact Hours

ALNG 1020 - Arabic in Context (3 cr. per semester)

Prerequisites
ALNG 1010 or placement examination

Description
In this course, students will be introduced to functions of writing through Arabic authentic reading and listening materials in order to improve their writing skills in a variety of contexts. In addition, the course enhances the four skills, with emphasis on expanding the vocabulary, developing both oral and written production through presentations, debates...etc. The course aims to enhance the students' Arabic language competence through realistic and contextualized tasks based on authentic texts. This is a blended course, students meet twice a week, for three hours in a face to face mode, and two hours in an online component mode. Registration requires the permission of ALNG.

ALNG 1101-1102-1103 - Elementary Modern Standard Arabic (3 cr. each per semester)

Description
Develops the fundamentals of modern standard Arabic through reading, writing, and oral connection within a framework of the essentials of syntax, morphology, and a working vocabulary. Three-semester sequence. Each course meets five hours per week. Registration requires the permission of ALNG Director.

When Offered
Offered in fall and spring.
Notes
Noncredit for Thanawiyya Amma holders. Sections with odd numbers are for international students and sections with even numbers are for Egyptian degree seeking students.

ALNG 1301-1302 - Elementary Egyptian Colloquial Arabic (3 cr. each per semester)

Description
Study of the basic inflectional and syntactical patterns of Egyptian colloquial Arabic through every day-life communicative activities. Two- semester sequence. Each course meets five hours per week. Registration requires permission of the ALNG Director.

When Offered
Offered in fall and spring
Notes
These two courses are only for international students non-native speakers of Arabic.

ALNG 1501 - Accelerated Elementary Modern Standard Arabic (6 cr. per semester)

Description
ALNG 1501 covers material of ALNG 1101 and ALNG 1102. This course meets ten hours per week. Registration requires permission of the ALNG Director.

When Offered
Offered in fall and spring.
Notes
Noncredit for Thanawiyya Amma holders. Sections with odd numbers are for international students and sections with even numbers are for Egyptian degree seeking students.

ALNG 1502 - Accelerated High Elementary and Lower Iintermediate Modern Standard Arabic (6 cr.each per semester)

Prerequisites
ALNG 1501

Description
ALNG 1502 covers the material of ALNG 1103 and ALNG 2101. The course meets ten hours per week. Registration requires permission of the ALNG Director.

When Offered
Offered in fall and spring.
Notes
Noncredit for Thanawiyya Amma holders. Sections with odd numbers are for international students and sections with even numbers are for Egyptian degree seeking students.

ALNG 1991 - Selected Topics (3 cr. per semester)

Description

Study of selected topics for elementary students. The course meets five hours per week. Registration requires the permission of ALNG Director.

When Offered
Offered fall and spring.
Notes
May be repeated for credit if content changes. Noncredit for Thanawiyya Amma holders. Sections with odd numbers are for international students and sections with even numbers are for Egyptian degree seeking students.

ALNG 2010 - Current Issues and Egyptian Society (3 cr. per semester)

Prerequisites
ALNG 1020

Description
Three-semester sequence. Increases the command of grammatical and syntactical structure of modern standard Arabic through reading materials; develops reading and writing skills and comprehension. Critical examination of social and cultural dimensions of reading materials. This is a blended course, students meet twice a week, for three hours in a face-to-face mode, and two hours in an online component mode. Registration requires the permission of ALNG.

Hours
5 Contact Hours

ALNG 2101-2102-2103 - Intermediate Arabic (3 cr. each per semester)

Prerequisites
ALNG 1103 or placement examination.

Description
Three-semester sequence. Each course meets five hours per week. Registration requires permission of the ALNG Director. Increases the command of grammatical and syntactical structure of modern standard Arabic through reading materials; develops reading and writing skills and comprehension. Critical examination of social and cultural dimensions of reading materials.

When Offered
Offered in fall and spring.
Notes
Noncredit for Thanawiyya Amma holders. Sections with odd numbers are for international students and sections with even numbers are for Egyptian degree seeking students.

ALNG 2104-2105 - Intermediate Modern Standard Arabic (3 cr. each per semester)

Prerequisites
ALNG 2103 or placement examination.

Description
Increase the command of grammatical and syntactical structure of modern standard Arabic through reading materials; develop reading and writing skills and comprehension. Critical examination of social and cultural dimensions of reading materials. Two-semester sequence. Each course meets five hours per week. Registration requires permission of the ALNG Director.

When Offered
Offered in fall and spring.
Notes
These two courses are only for international students.

ALNG 2131 - Arabic of the News Media (3 cr. per semester)

Prerequisites
ALNG 2101.

Description
Introduction to the vocabulary and style of the Arabic press. Readings from the daily newspapers and magazines and other sources. The course meets three hours per week. Registration requires permission of the ALNG Director.

When Offered
Offered in fall and spring.
Notes

Noncredit for Thanawiyya Amma holders. Sections with odd numbers are for international students and sections with even numbers are for Egyptian degree seeking students.

ALNG 2301 - Intermediate Egyptian Colloquial Arabic (ECA) (3 cr. per semester)

Prerequisites
ALNG 1302

Description
Concentrates on developing the students' listening and speaking skills in daily life situations through activities and presentations as well as introducing cultural connotations. The course meets five hours per week. Registration requires permission of the ALNG Director.

When Offered
Offered in fall and spring.
Notes
This course is only for international students non-native speakers of Arabic.

ALNG 2501-2502 - Accelerated Intermediate Modern Standard Arabic (6 cr. each per semester)

Prerequisites
ALNG 2101 or placement examination.

Description
Increase the command of grammatical and syntactical structures of modern standard Arabic through reading materials; develop reading and writing skills and comprehension. Critical examination of social and cultural dimensions of reading materials. ALNG 2501 covers material of ALNG 2102-2103 , while ALNG 2502 covers the materials of ALNG 2104-2105 . Two-semester sequence. Registration requires permission of the ALNG Director. Each course meets ten hours per week.

When Offered
Offered in fall and spring.
Notes
These two courses are only for international students.

ALNG 2991 - Selected Topics (3 cr. per semester)

Description
Study of selected topics for intermediate students. The course meets five hours per week. Registration requires permission of the ALNG Director.

When Offered
Offered in fall and spring.
Notes
May be repeated for credit if content changes. Noncredit for Thanawiyya Amma holders.Sections with odd numbers are for international students and sections with even numbers are for Egyptian degree seeking students.

ALNG 3101-3102 - Advanced Modern Standard Arabic I (3 cr. each per semester)

Prerequisites
ALNG 2105

Description
Further develops reading, writing, listening and speaking of Modern Standard Arabic. Prepares advanced non-native speakers for upper-division or graduate-level work in the Arabic language.Two-semester sequence. Each course meets five hours per week. Registration requires permission of the ALNG Director.

When Offered
Offered in fall and spring
Notes
These two courses are only for international students

ALNG 3103-3104 - Advanced Modern Standard Arabic II (3 cr. each per semester)

Prerequisites
ALNG 3102 or ALNG 3501.

Description
Further develops reading, writing, listening and speaking of Modern Standard Arabic. Prepares

advanced non-native speakers for upper-division or graduate-level work in the Arabic language.Two-semester sequence. Each course meets five hours per week. Registration requires permission of the ALNG Director.

When Offered
Offered in fall and spring.
Notes
These two courses are only for international students

ALNG 3105 - Independent Study (3 cr. per semester)

Prerequisites
Any 2000 level Arabic language course.

Description
Independent study in various aspects of MSA may be assigned to special groups in different majors. Students study the Arabic language related to their fields of study, such as politics, economics, literature. The course meets five hours per week. Registration requires permission of the ALNG Director.

When Offered
Offered upon request.
Notes
Non-credit for Thanawiyya Amma holders.

ALNG 3131 - Advanced Arabic of the News Media (3 cr. per semester)

Prerequisites
ALNG 2131 or placement examination

Description
Introduces more complex and analytical articles and editorials from the Arabic press and trains students to take notes while listening to broadcasts. Expands students' range of vocabulary and develops their ability to listen to lengthier passages. The course meets three hours per week. Registration requires permission of the ALNG Director.

When Offered

Offered in fall and spring.

Notes

This is a three-credit elective course. Sections with odd numbers are for international students and sections with even numbers are for Egyptian degree seeking students.

ALNG 3333 - Cairo, the City of the Thousand and One Faces (3 cr.)

Prerequisites

Consent of the ALNG Director.

Description

This course introduces a general image about Cairo through exposing the students to different readings and audio-visual material from different and diverse genres and perspectives: opinion articles, historical and geographical documentaries, excerpts from novels, short stories, memoirs, songs, paintings, and movies, and talk shows. In addition, the course introduces the students to different places in Cairo where events in the readings and the other texts have taken place.

Hours

5 Contact Hours

When Offered

Offered in Fall and Spring.

ALNG 3501-3502 - Accelerated Advanced Modern Standard Arabic (6 cr. each per semester)

Description

The courses aim at preparing advanced, non-native speaking students for upper-division or graduate-level work in the Arabic language. ALNG 3501 covers material of ALNG 3101-3102 , while ALNG 3502 covers the materials of ALNG 3103-3104. Two-semester sequence. Each course meets ten hours per week. Registration requires permission of the ALNG Director.

When Offered

Offered in fall and/or spring.

Notes

These two courses are only for international students

ALNG 3912 - Learning Arabic through Community Engagement (3 cr.)

Prerequisites
Native Speakers of Arabic who are: Thanawyia Amma holders or exempted from Arabic language courses or at Advanced level of Arabic language.

Description
This Community Based Learning (CBL) course has been done in discussion with ACE, specifically late Dr Pandeli. This course aims to improve students' writing, reading, listening, and presentation skills in Arabic through taking part in a community based learning project. The course helps students develop a sense of social responsibility and civic engagement by immersing them in real life problems of people in need on and off campus. Moreover, it promotes students' critical thinking and problem-solving skills. It also increases students' leadership and communication skills such as interpersonal (conversing with community groups), interpretive (reading research), and presentation skills (presenting research done). The course requires students to come up with out of the box practical solutions to the problems of real cases from the Employee Emergency Relief fund and community service clubs on campus. Students are asked to submit reflection papers, give several presentations, in addition to a final project. To this end, students will be introduced to the linguistic tools necessary to express their ideas in written and spoken Arabic. Authentic materials which enhance students' different Arabic language skills will be introduced in class and in the form of assignments. Moreover, authentic reading and listening materials on community engagement, NGOs, philanthropists, fundraising, and marketing through social media will be provided. This course will be offered to Arabic native speakers in Fall and Spring semesters.

ALNG 3991 - Selected Topics (3 cr. per semester)

Description
Study of selected topics for advanced students. The course meets three hours per week. Registration requires the permission of ALNG Director.

When Offered
Offered in fall and spring.
Notes
May be repeated for credit if content changes. It is a three-credit elective course. Sections with

odd numbers are for international students and sections with even numbers are for Egyptian degree seeking students.

ALNG 3993 - Introduction to Arabic for Career Purposes 3 cr.

Prerequisites
Students should be holding Thanaweya Amma certificate or advanced level Arabic.

Also, registration requires the department approval.

Description
This course helps to improve students' Arabic linguistic skills (both oral and written) with regards to communicating in formal professional Arabic language, in different business contexts and for various career purposes. Topics covered in this course are: the five oral levels of the Arabic language, writing C.V., covering letters, reports, e-mails, meeting agenda and minutes, critiques, appraisals, recommendation letters, carrying out presentations, debates, business meeting, interviews It is offered as an advanced elective course for students.

ALNG 3994 - Exploring Egyptian Cinema: Portraits of a Changing Nation (3 cr.)

Prerequisites
Exempted from Arabic language requirements/Thanawiyya 'amma holders or equivalent certificates.

Description

This course introduces students who are native and near-native speakers of Arabic to the vast world of Egyptian Cinema, from its inception in the early twentieth century to the present day. The course focuses on changes and developments that Egyptian society has undergone over the decades in question are revealed and analyzed, imparting to the students' knowledge about historical events in significant junctures of modern Egyptian history, as well as equipping them with the critical tools to evaluate them in order to formulate informed personal positions on them. Throughout the course, students practice and enhance their various Arabic language skills of reading, writing, listening, and speaking, as they engage with the course content in various individual and group activities and assignments.

When Offered
Offered in fall and spring.

Arabic Language Intensive - Modern Standard Arabic

ALIN 1101-1102-1103-1104 - Elementary Modern Standard Arabic (3 cr. each)

Description
Develops a fundamental working knowledge of the language through interactive exercises and drills within a framework of the essentials of syntax and morphology. Six credits are taken simultaneously in a two semester sequence.

Hours
Each course meets five hours per week.
When Offered
Offered in fall and spring.
Notes
Prerequisites are not listed for every course. However, entry into all intermediate and advanced presupposes that the student is of intermediate or advanced standing. The instructor's permission may also be required. Standing will be determined by written and/or oral placement tests for incoming students and sometimes for continuing students.

ALIN 1151-1152 - Elementary Listening and Speaking (2-3 cr. each)

Description
Develops students' ability to listen and understand Modern Standard Arabic.

Hours
Each course meets three or five hours per week.
When Offered
Offered in fall and spring.
Notes
Prerequisites are not listed for every course. However, entry into all intermediate and advanced presupposes that the student is of intermediate or advanced standing. The instructor's permission may also be required. Standing will be determined by written and/or oral placement tests for incoming students and sometimes for continuing students.

ALIN 2101-2102-2103-2104 - Intermediate Modern Standard Arabic (3 cr. each)

Description
Emphasizes the acquisition of vocabulary and increases the command of grammatical and syntactical structures. Further develops reading, writing, listening, and speaking skills. Two semester sequence.

Hours
Each course meets five hours per week.
When Offered
Offered in fall and spring.
Notes
Any two consecutive can be taken simultaneously. Prerequisites are not listed for every course. However, entry into all intermediate and advanced presupposes that the student is of intermediate or advanced standing. The instructor's permission may also be required. Standing will be determined by written and/or oral placement tests for incoming students and sometimes for continuing students.

ALIN 2141-2142 - Intermediate Spoken Modern Standard Arabic (MSA) (2-3 cr. each)

Description
Uses selected written material to prepare students to engage in discussions in Modern Standard Arabic.

Hours
Each course meets three or five hours per week.
When Offered
Offered in fall and spring.
Notes
Prerequisites are not listed for every course. However, entry into all intermediate and advanced presupposes that the student is of intermediate or advanced standing. The instructor's permission may also be required. Standing will be determined by written and/or oral placement tests for incoming students and sometimes for continuing students.

ALIN 2151-2152 - Exploring Arabic: Language, Identity, and Culture - With Focus on Listening and Speaking (2-3 cr. each)

Description

Develops students' listening skills while expanding their vocabulary in wide range topics and increases their ability to speak and comprehend details by using selected authentic video and audio tapes.

Hours
Each course meets three or five hours per week
When Offered
Offered in fall and spring.
Notes

Prerequisites are not listed for every course. However, entry into all intermediate and advanced presupposes that the student is of intermediate or advanced standing. The instructor's permission may also be required. Standing will be determined by written and/or oral placement tests for incoming students and sometimes for continuing students.

ALIN 3101-3102 - Advanced Modern Standard Arabic (3 cr. each)

Description
Through the reading and analysis of selected texts, the course exposes students to a wide range of vocabulary, idiom, and style, while reviewing the major topics of grammar.

Hours
Each course meets five hours per week.
When Offered
Offered in fall and spring.
Notes
Prerequisites are not listed for every course. However, entry into all intermediate and advanced presupposes that the student is of intermediate or advanced standing. The instructor's permission may also be required. Standing will be determined by written and/or oral placement tests for incoming students and sometimes for continuing students.

ALIN 3141-3142 - Advanced Spoken Modern Standard Arabic (MSA) (2-3 cr. each)

Description
Further develops students' ability to communicate orally in Modern Standard Arabic. Students present lectures, followed by question and answer sessions, and engage in debates and discussions.

Hours
Each course meets three or five hours per week.
When Offered
Offered in fall and spring.
Notes
Prerequisites are not listed for every course. However, entry into all intermediate and advanced presupposes that the student is of intermediate or advanced standing. The instructor's permission may also be required. Standing will be determined by written and/or oral placement tests for incoming students and sometimes for continuing students.

ALIN 3151-3152 - Arabic in Depth: Society, Thought, and Expression (2-3 cr. each)

Prerequisites
ALIN 2151-2152 or consent of instructor.

Description

Further develops students' listening and speaking skills by using selected authentic video and audio tapes, thus trains students to comprehend, communicate and discuss material in Modern Standard Arabic.

Hours
Each course meets three or five hours per week.
When Offered
Offered in fall and spring.
Notes

Prerequisites are not listed for every course. However, entry into all intermediate and advanced presupposes that the student is of intermediate or advanced standing. The instructor's permission may also be required. Standing will be determined by written and/or oral placement tests for incoming students and sometimes for continuing students.

Arabic Language Intensive - Colloquial Arabic

ALIN 1301-1302-1303 - Elementary Colloquial Arabic (3-4 cr. each)

Description

Introduces students to the spoken Arabic of Cairo. Concentrates on enabling students to communicate effectively in daily life. Targets high-frequency vocabulary and social situations and emphasizes pronunciation.

Hours
Each course meets five or seven hours per week.
When Offered
Offered in fall and spring.
Notes
Prerequisites are not listed for every course. However, entry into all intermediate and advanced presupposes that the student is of intermediate or advanced standing. The instructor's permission may also be required. Standing will be determined by written and/or oral placement tests for incoming students and sometimes for continuing students.

ALIN 2301-2302 - Intermediate Colloquial Arabic (3-4 cr. each)

Description
Concentrates on increasing student's vocabulary and command of syntax, with a higher level of fluency. Enables students to communicate with native speakers in a wide variety of social situations.

Hours
Each course meets five or seven hours per week.
When Offered
Offered in fall and spring.
Notes
Prerequisites are not listed for every course. However, entry into all intermediate and advanced presupposes that the student is of intermediate or advanced standing. The instructor's permission may also be required. Standing will be determined by written and/or oral placement tests for incoming students and sometimes for continuing students.

ALIN 3301-3302 - Advanced Colloquial Arabic (3-4 cr. each)

Description
Develops students' ability to express themselves more precisely and fluently. Uses authentic material, whether recorded or written, to encourage discussion.

Hours
Each course meets five or seven hours per week.
When Offered
Offered in fall and spring.
Notes
Prerequisites are not listed for every course. However, entry into all intermediate and advanced presupposes that the student is of intermediate or advanced standing. The instructor's permission may also be required. Standing will be determined by written and/or oral placement tests for incoming students and sometimes for continuing students.

Arabic Language Intensive - Media Arabic

ALIN 1131-1132 - Elementary Printed Media (2-3 cr. each)

Prerequisites
ALIN 1131

Description
Introduces students to the basic format of the Egyptian newspaper and acquaints them with the vocabulary and syntax of the Arabic press through the reading of simple news items.

Hours
Each course meets three or five hours per week
When Offered
Offered in fall and spring
Notes
Prerequisites are not listed for every course. However, entry into all intermediate and advanced presupposes that the student is of intermediate or advanced standing. The instructor's permission may also be required. Standing will be determined by written and/or oral placement tests for incoming students and sometimes for continuing students.

ALIN 1133-1134 - Elementary Aural Media (2-3 cr. each)

Prerequisites
ALIN 131

Description

Exposes students with some background in printed media to broadcast news media. Drills students in vocabulary and syntax and helps them develop strategies for listening comprehension.

Hours
Each course meets three or five hours per week
When Offered
Offered in fall and spring
Notes
Prerequisites are not listed for every course. However, entry into all intermediate and advanced presupposes that the student is of intermediate or advanced standing. The instructor's permission may also be required. Standing will be determined by written and/or oral placement tests for incoming students and sometimes for continuing students.

ALIN 2131-2132 - Intermediate Printed and Aural Media (3 cr.)

Description
Exposes students to a wider range of topics selected from the Arabic press. Emphasizes vocabulary and idiom acquisition, and begins to develop students' ability to read for speed. Further develops students' listening skills while expanding their vocabulary, especially in the areas of politics and economics. Increases their ability to comprehend details.

Hours
Each course meets five hours per week
When Offered
Offered in fall and spring
Notes
Prerequisites are not listed for every course. However, entry into all intermediate and advanced presupposes that the student is of intermediate or advanced standing. The instructor's permission may also be required. Standing will be determined by written and/or oral placement tests for incoming students and sometimes for continuing students.

ALIN 3131-3132 - Advanced Printed and Aural Media (3 cr.)

Description
Introduces more complex and analytical articles and editorials from the Arabic press. Further develops students' ability to skim. Trains students to take notes while listening to broadcasts.

Expands their range of vocabulary and develops their ability to listen to lengthier passages.

Hours
Five hours per week.
When Offered
Offered in fall and spring.
Notes
Prerequisites are not listed for every course. However, entry into all intermediate and advanced presupposes that the student is of intermediate or advanced standing. The instructor's permission may also be required. Standing will be determined by written and/or oral placement tests for incoming students and sometimes for continuing students.

Arabic Language Intensive - Supervised Readings

ALIN 1991-1992 - Selected Topics (1-4 cr. each)

Prerequisites
Prerequisites are not listed for every course. However, entry into all intermediate and advanced presupposes that the student is of intermediate or advanced standing. The instructor's permission may also be required. Standing will be determined by written and/or oral placement tests for incoming students and sometimes for continuing students.

Description
Study of a selected topic according to the students' level and interests.

Hours
Two to seven hours per week
When Offered
Offered in fall and spring.
Repeatable
May be repeated for credit when content changes

ALIN 2991-2992 - Selected Topics (1-4 cr. each)

Prerequisites
Prerequisites are not listed for every course. However, entry into all intermediate and advanced presupposes that the student is of intermediate or advanced standing. The instructor's

permission may also be required. Standing will be determined by written and/or oral placement tests for incoming students and sometimes for continuing students.

Description
Study of a selected topic according to the students' level and interests.

Hours
Two to seven hours per week
When Offered
Offered in fall, winter and spring
Repeatable
May be repeated for credit when content changes

ALIN 3991-3992 - Selected Topics (1-4 cr. each)

Prerequisites
Prerequisites are not listed for every course. However, entry into all intermediate and advanced presupposes that the student is of intermediate or advanced standing. The instructor's permission may also be required. Standing will be determined by written and/or oral placement tests for incoming students and sometimes for continuing students.

Description
Study of a selected topic according to the students' level and interests.

Hours
Two to seven hours per week
When Offered
Offered in fall and spring.
Repeatable
May be repeated for credit when content changes

Arabic Language Intensive - Translation

ALIN 2201-2202 - Intermediate Translation (2-3 cr. each)

Description
Translation close reading and analysis of Arabic texts covering a wide range of topics, the course

employs translation into English as a means to enhance students' knowledge of Arabic vocabulary, idiomatic expressions and complex structures. Translation from English into Arabic is used to train students to produce coherent and correct Arabic texts. Issues and techniques related to the practice of translation are dealt with, but the primary focus is on Arabic language learning

When Offered
Offered in fall and spring.
Notes
Prerequisites are not listed for every course. However, entry into all intermediate and advanced presupposes that the student is of intermediate or advanced standing. The instructor's permission may also be required. Standing will be determined by written and/or oral placement tests for incoming students and sometimes for continuing students.

ALIN 3201-3202 - Advanced Translation (2-3 cr. each)

Description
Focus is more on problems and issues of translation where students are expected to produce coherent, culturally sensitive texts in both languages. Length and level of complexity of source language texts are increased.

When Offered
Offered in fall and spring.
Notes
Prerequisites are not listed for every course. However, entry into all intermediate and advanced presupposes that the student is of intermediate or advanced standing. The instructor's permission may also be required. Standing will be determined by written and/or oral placement tests for incoming students and sometimes for continuing students.

Arabic Language Intensive - Writing Arabic

ALIN 1111-1112 - Elementary Reading and Writing (2-3 cr. each)

Description

Develops basic writing skills useful in daily life. Trains students to summarize short informative passages and complete practical tasks such as filling out forms, writing messages, telegrams,

invitations, etc.

Hours
Each course meets three or five hours per week.
When Offered
Offered in fall and spring

ALIN 2111-2112 - Intermediate Writing (2-3 cr. each)

Description
.Develops students' ability to meet short practical writing needs. Trains students to summarize informative and narrative passages, gradually introducing more complex structures..

Hours
Each course meets three or five hours per week
When Offered
Offered in fall and spring
Notes
Prerequisites are not listed for every course. However, entry into all intermediate and advanced presupposes that the student is of intermediate or advanced standing. The instructor's permission may also be required. Standing will be determined by written and/or oral placement tests for incoming students and sometimes for continuing students.

ALIN 2121-2122 - Exploring Arabic through Texts: Reading and Writing (3 cr. each)

Description

Develops reading and writing by integrating the two skills in one course and introducing a wide variety of modern Arabic texts to be used for reading and a basis for writing assignments. The course develops the students' reading comprehension, vocabulary acquisition and acquaints them with the style of the Arabic essay. It prepares the student for the more sophisticated course in advanced reading and writing.

Hours
Each course meets five hours per week
When Offered

Offered in Fall and Spring.

Notes

Prerequisites are not listed for every course. However, entry into all intermediate and advanced presupposes that the student is of intermediate or advanced standing. The instructor's permission may also be required. Standing will be determined by written and/or oral placement tests for incoming students and sometimes for continuing students.

ALIN 3111-3112 - Advanced Writing (2-3 cr. each)

Description

Equips students to write at greater length using a variety of techniques, including description, comparison, contrast, argumentation, etc. Refines students' ability to write cohesive summaries.

Hours

Each course meets three or five hours per week.

When Offered

Offered in fall and spring.

Notes

Prerequisites are not listed for every course. However, entry into all intermediate and advanced presupposes that the student is of intermediate or advanced standing. The instructor's permission may also be required. Standing will be determined by written and/or oral placement tests for incoming students and sometimes for continuing students.

ALIN 3121-3122 - Texts and Contexts: Advanced Arabic Reading and Writing (3 cr. each)

Prerequisites

ALIN 2121-2122 or consent of instructor.

Description

Further develops reading and writing by integrating the two skills in one course and exposing the students to a wide variety of modern Arabic texts focusing on the different stylistic devices. Emphasis on analytic reading and essay writing.

Hours

Each course meets five hours per week.

When Offered

Offered in fall and spring.

Notes

Prerequisites are not listed for every course. However, entry into all intermediate and advanced presupposes that the student is of intermediate or advanced standing. The instructor's permission may also be required. Standing will be determined by written and/or oral placement tests for incoming students and sometimes for continuing students.

Arabic Language Intensive Summer

ALIS 1101-1102-1103-1104 - Elementary Modern Standard Arabic (2-3 cr. each)

Description

Develops a fundamental working knowledge of the language through interactive exercises and drills within a framework of the essentials of syntax and morphology. Each course meets 7 or 10 hours in summer.

ALIS 1111-1112 - Elementary Writing (1-3 cr. each)

Description

Develops basic writing skills useful in daily life. Trains students to summarize short informative passages and complete practical tasks such as filling out forms, writing messages, invitations, etc. Each course meets three or five hours per week.

ALIS 1131-1132 - Elementary Printed Media (1-3 cr. each)

Description

Introduces students to the basic format of the Egyptian newspaper and acquaints them with the vocabulary and syntax of the Arabic press through the reading of simple news items. Each course meets three or five hours per week.

ALIS 1211-1212 - Readings in the Qur'an (1 cr. each)

Description

Introduces students to the Qur'an, its structure, and a selection of its simpler verses. Addresses

basic grammatical issues, while focusing on comprehension, oral repetition, and correct reading. Each course meets three hours per week.

ALIS 1301-1302-1303 - Elementary Colloquial Arabic (2-4 cr. each)

Description
Introduces students to the spoken Arabic of Cairo. Concentrates on enabling students to communicate effectively in daily life. Targets high-frequency vocabulary and social situations and emphasizes pronunciation. Each course meets seven hours per week.

ALIS 1991-1992 - Supervised Studies (1-4 cr. each)

Description
Study of a selected topic according to the students' level and interests.

Hours
Each course meets two to seven hours per week.
When Offered
Offered in summer.
Repeatable
May be repeated for credit when content changes.

ALIS 2101-2102-2103-2104 - Intermediate Modern Standard Arabic (2-3 cr. each)

Description
Emphasis the acquisition of vocabulary and increases the command of grammatical and syntactical structures. Further develops reading, writing, listening and speaking skills. Any two consecutive courses can be taken simultaneously. Each course meets 7 or 10 hours in summer.

ALIS 2111-2112 - Intermediate Writing (1-3 cr. each)

Description
Develops students' ability to meet short practical writing needs. Trains students to summarize

informative and narrative passages, gradually introducing more complex structures. Each course meets three or five hours per week .

ALIS 2131-2132 - Intermediate Printed Media (1-3 cr. each)

Description
Exposes students to a wider range of topics selected from the Arabic press. Emphasizes vocabulary and idiom acquisition, and begins to develop students' ability to read for speed. Each course meets three or five hours per week.

ALIS 2133-2134 - Intermediate Aural Media (1-3 cr. each)

Description
Further develops students' listening skills while expanding their vocabulary, especially in the areas of politics and economics. Increases their ability to comprehend details. Each course meets three or five hours per week.

ALIS 2201-2202 - Intermediate Translation (1 cr. each)

Description
Translation of close reading and analysis of Arabic texts covering a wide range of topics. The course employs translation into English as a means to enhance students\' knowledge of Arabic vocabulary, idiomatic expressions and complex structures. Translation from English into Arabic is used to train students to produce coherent and correct Arabic texts. Issues and techniques related to the practice of translation are dealt with, but the primary focus is on Arabic language learning

ALIS 2211-2212 - Readings in the Qur'an (1-3 cr. each)

Description
Introduces a wide selection of verses, thoroughly addressing grammatical and syntactical issues. Trains students to recite with great precision. Each course meets three or five hours per week.

ALIS 2251 - Readings in Modern Arabic Literature (1 cr.)

Description
Selections from a variety of prose writings. Course meets three hours per week.

ALIS 2301-2302 - Intermediate Colloquial Arabic (2-4 cr. each)

Description
Concentrates on increasing student's vocabulary and command of syntax, with a higher level of fluency. Enables students to communicate with native speakers in a wide variety of social situations. Each course meets five or seven hours per week.

ALIS 2991-2992 - Supervised Studies (1-4 cr. each)

Description
Study of a selected topic according to the students' level and interests.

Hours
Each course meets two to seven hours per week
When Offered
Offered in summer.
Repeatable
May be repeated for credit when content changes.

ALIS 3101-3102 - Advanced Modern Standard Arabic (2-3 cr. each)

Description
Through the reading and analysis of selected texts, the course exposes students to a wide range of vocabulary, idiom, and style, while reviewing the major topics of grammar. Each course meets 7 or 10 hours in summer.

ALIS 3111-3112 - Advanced Writing (1-3 cr. each)

Description
Equips students to write at greater length using a variety of techniques, including description,

comparison, contrast, argumentation, etc. Refines students' ability to write cohesive summaries. Each course meets three or five hours per week.

ALIS 3131-3132 - Advanced Printed Media (1-3 cr. each)

Description
Introduces more complex and analytical articles and editorials from the Arabic press. Further develops students' ability to skim. Each course meets three or five hours per week.

ALIS 3133-3134 - Advanced Aural Media (1-3 cr. each)

Description
Trains students to take notes while listening to broadcasts. Expands their range of vocabulary and develops their ability to listen to lengthier passages. Each course meets three or five hours per week.

ALIS 3201-3202 - Advanced Translation (1 cr. each)

Description
Focus in this course is more on problems and issues of translation. Students are expected to produce coherent, culturally sensitive texts in both languages. Graded authentic texts are used.

ALIS 3251 - Readings in Modern Arabic Literature (1 cr.)

Description
Selections from a variety of prose writings: short stories, novels, plays, and poetry by writers from different Arab countries. Course meets three hours per week.

ALIS 3301-3302 - Advanced Colloquial Arabic (2-3 cr. each)

Description
Develops students' ability to express themselves more precisely and fluently. Uses authentic material, whether recorded or written, to encourage discussion. Each course meets five or seven hours per week.

ALIS 3991-3992 - Supervised Studies (1-4 cr. each)

Description
Study of a selected topic according to the students' level and interests.

Hours
Each course meets two to seven hours per week
When Offered
Offered in summer.
Repeatable
May be repeated for credit when content changes.

Arabic Writing

ALWT 2271 - From Reading to Writing: Intermediate Level (3 cr.)

Description
This course combines reading and writing skills in various disciplines such as Political Science, Anthropology, Economics, History, Arts, etc. Special attention is given to basic structures, fixing common mistakes, rhetorical devices, clichés, collocations, and vocabulary building. Students reaching intermediate level in the Arabic Writing Placement exam can take this course. Registration requires permission of the ALNG Director.

When Offered
Offered in the fall and spring.

ALWT 3271 - The Traveler: Exploring the Arab World Today - High Intermediate Level (3 cr.)

Prerequisites
Students reaching intermediate level in the Arabic Writing Placement exam can take this course. Registration requires permission of the ALNG Director.

Description
This course combines reading and writing skills in various disciplines such as Political Science, Anthropology, Economics, History, Arts, etc. Special attention is given to basic structures, fixing

common mistakes, rhetorical devices, clichés, collocations, and vocabulary building. Thanawiya amma holders or students reaching high-intermediate level in the Arabic Writing Placement exam can take this course.

When Offered
Offered in the fall and spring.
Notes
The level of material taught is higher than those taught in ALWT 2271 but following the same guidelines.

ALWT 3919 - El Ard Bititkallim 'Arabi; Know Thy World in Arabic (3 cr.)

Prerequisites
Thanawiyya Amma, or ALNG 2101-2102-2103, or scoring at the advanced level in the ALI placement exam.

Description
This course develops students' skills in Modern Standard Arabic, the language of their direct community, by raising their bilingual awareness across it and English, the language of their university education. Through readings in both English and Arabic, drawn from each class's different mix of academic majors, together with targeted translation activities, it trains students to express in sound Arabic the academic knowledge base they are building in their respective fields. As students' mastery of their native language is thus enhanced, their connection to it is deepened, together with their sense of personal and cultural identity, and their commitment to engagement with their wider Arabic speaking community.

Hours
This course meets 3 hours per week.
When Offered
Offered in Spring and Fall.

ALWT 4201 - Professional Translation in Business (3 cr.)

Prerequisites
ALWT 4271 or consent of instructor.

Description

This course is designed to meet the pressing need for high level translation in all work places. Attention is given to points of contrast, idiomatic usage, semantic fields of corresponding vocabulary in both English and Arabic in business administration and economics.

When Offered
Offered in the fall, winter, spring and summer.

ALWT 4202 - Diplomatic Professional Translation (3 cr.)

Prerequisites
ALWT 4271 or consent of instructor.

Description
This course is designed to meet the pressing need for high level translation in all work places. Attention is given to points of contrast, idiomatic usage, and semantic fields of corresponding vocabulary in both English and Arabic in the field of diplomacy and political science.

When Offered
Offered in the fall, winter, spring and summer.

ALWT 4271 - From Reading to Writing: Advanced Level (3 cr.)

Prerequisites
Students reaching Advanced level in the Arabic Writing Placement Exam or have taken either 3271.

Description
This course combines reading and writing skills in various disciplines such as Political Science, Anthropology, Economics, History, Arts, etc. It develops further the reading and writing skills. Special attention is given to complex structures, fixing common mistakes, rhetorical devices, clichés, collocations, and vocabulary building.

When Offered
Offered in the fall and spring.

ALWT 4272 - Arabic Language Proficiency for Media Writing (3 cr.)

Prerequisites
Approval of ALNG Director.

Description
This course aims at improving students' proficiency in the Arabic language It trains students to efficiently use discourse markers and cohesive connectors to successfully conduct interviews and write news reports in modern standard Arabic. Students will also be familiarized with different Arabic media writings.

When Offered
Offered in fall, winter, spring and summer.

ALWT 4273 - Professional Business Writing (3 cr.)

Prerequisites
Students reaching advanced level the Arabic Writing Placement Exam or have taken either 3271.

Description
The course bridges the communication gap between language course work and information-transfer needs of business. The course trains the student to write major forms of business writing, including correspondence, memoranda, reports and the like.

When Offered
Offered in the fall and spring.

ALWT 4274 - Professional Diplomatic Writing (3 cr.)

Prerequisites
Students reaching advanced level in the Arabic Writing Placement Exam or have taken 3271.

Description
The course bridges the communication gap between language course work and information-transfer needs of diplomacy. The course trains the student to write major forms of diplomatic writing, including correspondence, memoranda, reports and the like.

When Offered
Offered in the fall and spring.

ALWT 5271 - Professional Arabic TV Script Writing (3 cr.)

Prerequisites
ALWT 4272 or Approval of ALNG Director

Description
This course is a continuation of ALWT 4272. This course makes students practice writing TV scripts in syntactically and semantically eloquent Arabic. It also develops students' Arabic language through further understanding of Arabic and Egyptian culture.

When Offered
Offered in the fall, winter, spring and summer.

Architectural Engineering

ARCH 1511 - Engineering Drawing & Visual Representation for Architects (2 cr.)

Description

Manual drawing, projections and manual visual communication for designers. Three primary modules covering projections, conceptual diagramming, idea sketching; tools for diagrammatic analysis; and, rendering and final presentation using engineering drawing techniques.

Hours
Three hours studio period.
When Offered
Offered in fall and spring.

ARCH 1521 - Digital Representation Tools for Architects (2 cr.)

Description

An introduction to different forms of digital representation in architecture: architectural drawings, 3D-modeling, rendering, sheet layout design and fundamentals in animation and image editing. Introduction to Building Information Modeling (BIM) and graphical representation software. Such techniques are utilized as design tools for the creative development of projects and communication with clients and consultants from different disciplines in architectural practice.

Hours
One-hour class period and three-hour lab period.
When Offered
Offered in fall and spring.

ARCH 1561 - Architecture: Art or Engineering (3 cr.)

Description
A study of architecture as a way of contrasting the "Arts" and "Engineering" approaches to design. The course addresses issues of form and space generation, function and interior environment, exterior and site, and materials and construction. Famous buildings and styles will be critically analyzed from the perspectives of both the artist and the engineer.

ARCH 2211 - History, Theory & Criticism of Architecture & Urbanism I (3 cr.)

Description

A history of architecture and urbanism from the enlightenment to our present day. Introduction to the historical development of twentieth-century and twenty-first architecture and urbanism globally, including its social, technological, and conceptual aspects. Special emphasis on studying different paradigms, individual architects, buildings, and theoretical writings. Traditional, local vernacular, and contemporary vernacular architecture are also studied.

When Offered
Offered in fall and spring.

ARCH 2212 - History, Theory and Criticism of Architecture and Urbanism II (3 cr.)

Prerequisites
ARCH 2211

Description

A history of architecture from Pre-historic Times to Enlightenment. Introduction to the historical development of global architecture from the first known settlement to the early nineteenth century, including its social, technological, and conceptual aspects. Special emphasis on studying different paradigms, individual architects, buildings, and theoretical writings. Traditional, local vernacular, and contemporary vernacular architecture are also studied. Special emphasis on Ancient Egyptian Architecture and Islamic Architecture & Urbanism.

When Offered

Offered in fall and spring.

ARCH 2221 - Human Aspects in Architectural Design (3 cr.)

Prerequisites

ARCH 1521, ARCH 1511

Description

Introduction to architectural design related environment-behavior issues. Critical and practical consideration of human aspects in design: users' needs, emotions, power dynamics, space and place, privacy, (dis)ability, territoriality, social interaction, social differences (including gender, race, class), perception, ergonomics, proxemics. Effects of cultural processes on architecture and urban design. Use of environment-behaviour research methods from disciplines of the humanities in architecture and urban design. Design applications, architectural programming and post-occupancy evaluation.

Hours

One hour class period and 3 hours studio period.

When Offered

Offered in fall and spring.

ARCH 2231 - Environmental Control Systems and Sustainable Design (3 cr.)

Prerequisites

PHYS 1011, MACT 1121 and ARCH 2551

Description

Basic principles and application of environmental systems: acoustic, lighting, HVAC, energy use, and their integration with the building envelop. Performance of the building envelops materials and assemblies. Introduction to LEED and similar systems. Sustainable design principles and its applications. Sustainable design project.

Hours

One-hour lecture & 3-hour studio period.

When Offered

Offered in fall and spring.

ARCH 2411 - Surveying for Architects (1 cr.)

Prerequisites

MACT 1121

Description

Basics of surveying theory, recording field data and representation of data. Digital mapping production and contouring. Surveying applications including field work of detail surveying, stakeout, and parcel boundaries. Survey planning and associated survey computations. Operation of automatic level, total station and GPS. Introduction to 3D scanning of buildings.

Hours

Three-hour lab period.

When Offered

Not specified.

ARCH 2501 - Let's get Sustainable (3 cr.)

Description

This seminar-based course aims to familiarize students with the evolving concerns related to sustainability in the built environment and urban contexts. Specifically, it aims to bridge the theory-action gap around sustainability issues by allowing students to engage in a reflection-in-

action learning experience centered around our daily actions in the city. While city living provides us with much convenience, the course aims to reveal to students how sustainability is a collective endeavor - advanced by our individual actions. While following a design-based pedagogy, it seeks to cross the disciplines of design, environmental sciences, business, as well as the humanities and social science, to provide a contemporary understanding of sustainability as it crosses the environmental, social, cultural and economic dimensions.

ARCH 2512 - Foundations of 3-Dimensional Design (2 cr.)

Description

Basic concepts and fundamentals of visualization, thinking, and design of simple forms in three dimensions. Presentation, communication and basic design skills using simple three dimensional modeling exercises in manual formats. Balance between aesthetic and functional design criteria. No previous modeling or digital experience is required.

Hours

Three-hour studio period.

When Offered

Offered in fall and spring.

ARCH 2551 - Introduction to Architectural Design (3 cr.)

Prerequisites

ARCH 1521 - Digital Representation Tools for Architects (2 cr.)

ARCH 2512 - Foundations of 3-Dimensional Design (2 cr.)

ARCH 1511 - Engineering Drawing & Visual Representation for Architects (2 cr.)

Description

Architectural design stages. Leadership role of architects in project delivery. Influence of site location on design. Influence of project related factors on design. Design of simple buildings. Introduction to basic building components and assemblies. Introduction to building code requirements.

Hours

One-hour class period and three-hours studio period.

When Offered
Offered in fall and spring.

ARCH 2552 - Architectural Design Studio I (4 cr.)

Prerequisites
ARCH 2221 - Human Aspects in Architectural Design (3 cr.) , ARCH 2551 - Introduction to Architectural Design (3 cr.)

Description
Studio on designing in behavioral and socio-cultural contexts. "Inside-out" approach to Architecture. Design through the study of behavioral use of space. Age, sex, culture and individuality as well as complex functional relationships influence on architectural design. Study of the nature of human behavior and how it can be incorporated, facilitated, modified and influenced through architectural design. Design for special needs populations. Introduction to developing project brief through definition of the needs of society, users and clients.

Hours
Six-hour studio period.
When Offered
Offered in fall and spring.

ARCH 3231 - Building Performance (3 cr.)

Prerequisites
ARCH 2231

Description

In-depth exploration of building performance, with a focus on energy efficiency, sustainability, and occupant comfort. Principles and practices that contribute to high-performance buildings, including the application of building envelope design, HVAC systems, lighting systems, renewable energy technologies, heat transfer, fluid dynamics, acoustics and building automation systems. Design and evaluation of the performance of buildings using latest technologies in terms of energy efficiency, water conservation, indoor environmental quality, and sustainability.

When Offered
Offered in fall and spring.

ARCH 3311 - Building Construction Methods II for Architects (3 cr.)

Prerequisites
ARCH 2552, CENG 2115, CENG 2252

Description

Construction details, materials selection, and methods of construction of building finishes: floors, walls, ceiling; stairs, openings, installations, specialty works. Design and detailing of architectural components. Both manual drawings and CAD are used to develop the construction details.

Hours
Four hours studio period.
When Offered
Offered in fall and spring.

ARCH 3321 - Building Service Systems and Building Systems Integration (3 cr.)

Prerequisites
ARCH 3311

Description
Basic principles of plumbing, electrical, and mechanical systems in buildings. Integration of building systems. Assessment, selection and integration of structural systems, building envelop, environmental, life safety, and building systems into building design.

Hours
Two-hour class period and three-hour lab period.

ARCH 3331 - Construction Materials and Quality Control (4 cr.)

Prerequisites
CENG 2115

Description

Concepts of mechanics of materials and properties and evaluation of construction materials. Fundamental principles of stresses and strains encompassing shear, bearing, axial, bending, and torsion forces, and their impact on materials and components. Prosperities of construction materials including aggregates, Portland cement, Portland cement concrete, and asphalt cement. Quality control combining experimental laboratory work and statistical evaluation. Topics such timber, steel, masonry materials, insulating materials, decorative and finishing materials for architecture are explored. Laboratory experiments and reporting are conducted to assess the performance and adequacy for sound applications.

Hours

Two one-hour class periods and three-hour lab period.

When Offered

Offered in fall and spring.

ARCH 3422 - Real Estate Development, Project Finance and Cost Analysis (2 cr.)

Prerequisites

ARCH 4532

Description

Introduction to the real estate development model, management, and processes. Land use and planning dimensions, marketing priorities, facility operations and management, community management, and legislative framework and laws governing the sector. Financial feasibility model and the various cost analysis models that contribute to the decision making.

When Offered

Offered in fall and spring.

ARCH 3522 - Digital Design Studio and Workshop (3 cr.)

Prerequisites

ARCH 3554

Description

The course involves in-depth investigations focused on the capabilities of computation in architectural design. It provides an overview of computational tools and methodologies of design, involving topics such as parametric and generative modelling, algorithmic thinking, visualization and digital fabrication. Hands-on implementation of computational tools is exercised during lab sessions by means of parametric modelling and digital fabrication software. Students work back and forth between physical material experimentation and digital translation of parameters, rules, constraints and relationships to develop their solutions in applied design projects. In the process, students learn how to automatically extract data from parametric models for multiple purposes, including but not limited to digital fabrication, environmental analysis, and documentation and detailing.

Hours
Three-hour studio period and three-hour lab period.
When Offered
Offered in fall and spring.

ARCH 3531 - Housing Design and Geographic Information Systems (3 cr.)

Prerequisites
ARCH 2411 and ARCH 2552

Description
Context, history and framework of regional, city and urban planning. Concepts, features and characteristics of human settlements. Interrelationship between socio-cultural contexts and housing processes. Design of housing areas and housing units. Design of 'appropriate' and 'responsive' residential environments within specific resources. Concepts and system components of GIS. Creation and management of a geodatabase. GIS analysis and applications in housing projects.

Hours
Three-hour studio period and three hour lab period.
When Offered
Offered in fall and spring.

ARCH 3553 - Architectural Design Studio II (4 cr.)

Prerequisites
ARCH 2211, ARCH 2552

Description
Studio on form, space and composition. "Outside-in" approach to architecture. The architectural form and its composition. The compositional aspects of spatial design- expression, language, intent, dynamics etc. and their use as tools of concept and functional accommodation. Three-dimensional models and design development. Spatial approach to design. Meaning, message and symbolism. Work with architectural precedents through analysis of various works of architects. Contemporary design theory as a premise for design.

Hours
Six-hour studio period.
When Offered
Offered in fall and spring.

ARCH 3554 - Architectural Design Studio III (4 cr.)

Prerequisites
ARCH 3231 and ARCH 3553

Description

Studio on Environment and Sustainability. This studio will allow students to investigate various aspects of the environment and 'sustainability' as a force within the architectural profession. Recent increases in global climatic and social pressures have necessitated environmental awareness as well as new architectural design solutions. Using current sustainable design strategies as a foundation, students will analyze and implement their own environmentally responsible analysis and designs. Conservation and recycling of materials and waste management. Field trip to gain hand on experience on the sustainable design and waste management is a requirement.

Hours
Six-hour studio period.

When Offered

Offered in fall and spring.

ARCH 3562 - Introduction to Architecture (3 cr.)

Prerequisites

CENG 2251

Description

Role of the architect and other engineers in building construction. Introduction to the factors influencing architectural design. Building components, materials and assemblies. Architectural drawing and detailing.

When Offered

Offered in fall and spring.

Notes

Two-hours lecture period and three-hour lab period.

ARCH 3950 - Internship in Construction Projects (0 cr.)

Prerequisites

CENG 2115, CENG 2252

Description

Each student is required to spend a minimum of 4 weeks of internship in Egypt or abroad. These should include substantial practical training in construction activities. A complete account of the experience is reported, reflected on, and evaluated.

When Offered

Offered in fall and spring.

ARCH 4312 - Design Development and Construction Documents (3 cr.)

Prerequisites

ARCH 3321, ARCH 3331, CENG 3152

Description

Development of design into technical documents. Production of construction documents. Design of construction assemblies, constructability aspects and choice of materials. Building coordination and integration using Building Information Modeling applications. Drawing conventions and symbols. Building permit package. Basics of technical specifications.

Hours

5-hour studio period.

When Offered

Offered in fall and spring.

ARCH 4421 - Building Codes, Laws & Regulations (3 cr.)

Prerequisites

ARCH 3554

Description

Architect's responsibilities, liabilities, and rights pursuant to the Egyptian Laws. International and National Building Codes with emphasis on Fire Protection. Ethics and Social Responsibility of Architects.

When Offered

Offered in fall and spring.

ARCH 4422 - Business Management for Architects (2 cr.)

Prerequisites

ARCH 3422

Description

Introduction to the business context of architectural practice including business and professional ethics, organizational theory and behavior, strategic, marketing and financial management, business planning, and the generations and management of work in an architectural practice.

When Offered

Offered in fall and spring.

ARCH 4423 - Ethics and Professional Practice (3 cr.)

Prerequisites

ARCH 4421

Description

The business of conducting an architectural practice. Understanding the organization of professional architectural firms in Egypt and the US guided by the AIA Handbook for Professional Practice and the Code of Ethics in both countries. Methods of design management, contracts, compensation, professional ethics, insurance, and relationships with consultants and contractors. Weaves theory into practice and includes a number of course talks with practice architects.

When Offered

Offered in fall and spring.

ARCH 4532 - Urban Design and Landscape Architecture (4 cr.)

Prerequisites

ARCH 2411, ARCH 3553

Description

This course is intended to teach students the basics of urban design and landscape architecture using a set of lectures and a design project. In the first part, ethnographic fieldwork, designing for inclusive communities and placemaking approaches are discussed through the analysis of visual elements, urban form, grain, texture, and social fabric of existing lively streets. Students apply tactical urbanism and urban acupuncture as strategies for surgical intervention and urban development. In the second part, students learn to design a sustainable masterplan for an urban design problem in the city tackling: urban informality, heritage site, or new desert development by engaging with community issues, economic forces, and environmental factors. Urban design solutions are generated through experimentation, contextual physical models and graphic representation. Students work in teams and present their ideas and design schemes collectively.

Hours

One-hour class period and three-hour studio period.

When Offered

Offered in fall and spring.

ARCH 4541 - Introduction to Interior Design (3 cr.)

Prerequisites

ARCH 2551 or (ARCH 1521 and DSGN 2201)

Description

Historical background of Interior Design Styles. Concepts and principles of interior design. Space planning and design. Aesthetics of Interior Design. Color and lighting. Materials selection. Function, material and layout of furniture and textiles. Ergonomics and design. Mood Board design.

Hours

Two-hours lecture and two-hours studio.

When Offered

Offered in fall and spring.

ARCH 4555 - Architectural Design 4 (4 cr.)

Prerequisites

ARCH 3554 - Architectural Design Studio III (4 cr.) CENG 3152 - Structural Design for Architects II (3 cr.) - ARCH 3331 - Construction Materials and Quality Control (4 cr.)

Description

Studio on the Art of Structure and Technology. This studio's primary objective is to link the two basic components of architecture- art and engineering. Based on a firm understanding of structural systems and their appropriate application to architectural design, projects will be designed to incorporate both aesthetic beauty and structural thinking. The influence of technology in the form of new materials and methods will be examined through their design potential. Three-Dimensional manual and digital models will play an essential role in the design development processes of this studio.

Hours

Six-hour studio period.

When Offered
Offered in fall and spring.

ARCH 4557 - Architectural Design Studio VI Design Studio Contextual (4 cr.)

Prerequisites
ARCH 4555 - Architectural Design 4 (4 cr.)

ARCH 4532 - Urban Design and Landscape Architecture (4 cr.)

ARCH 3321 - Building Service Systems and Building Systems Integration (3 cr.)

ARIC 2205 - The World of Islamic Architecture (3 cr.)

EGPT 2030 - Introduction to Egyptian Architecture (3 cr.)

Description
Studio on design in critical Settings- Designing in Historical Contexts. A critical review of works, theories, and polemics in modern architecture. Case studies of buildings within urban settings will be the focus, with an emphasis on adaptive re-use, historic preservation, urban and landscape design practices. Within the context of a historical survey, students will develop a framework to assess and design for contemporary issues in architecture.

Hours
Six-hour studio period.

ARCH 4558 - Architectural Design Studio VIII Design Studio High Tech (4 cr.)

Prerequisites
ARCH 4557 - Architectural Design Studio VI Design Studio Contextual (4 cr.)

ARCH 3522 - Digital Design Studio and Workshop (3 cr.)

Description
Studio on smart buildings and high-tech architecture. Expanding on the 1970's theme of High-Tech architecture, this studio aims at redefining the role of cutting edge technology in design- both process and product. Digital technology has revolutionized the way we conceptualized, visualize, present and are eventually able to construct our buildings, making impossible designs of the past a reality. Rapid developments in materials, building systems and construction

methods have broadened our design horizons. Issues such as virtual architecture and smart buildings will be explored with regards to their viability and role in the future of architecture.

Hours
Six-hour studio period.
When Offered
Offered in fall and spring.

ARCH 4561 - Architectural Design Studio IV: Contextual Analysis & Structural Tectonics (4 cr.)

Prerequisites
ARCH 2212, ARCH 3554, ARCH 4532, CENG 3151

Description

Development of design foundations and theoretical frameworks for Contextual Analysis based on a critical review of works, theories and polemics in architecture. Developing designs of buildings, spaces, structures within specific settings. Study of components and drivers of design. Development of a space and functional program. Development of schenmatic designs based on structural tectonics.

Hours
Six-hour studio period
When Offered
Offered in fall and spring.

ARCH 4562 - Architectural Design Studio V: Comprehensive & Integrated Design (4 cr.)

Prerequisites
ARCH 3321, ARCH 3422, ARCH 4421, ARCH 4561, CENG 3152

Description

Design builds on the innovative approach and theoretical position developed in one of three areas of interest: building design: human and environmental studies, tectonics and computational design, and architecture and urban heritage design. Development of advanced schematic design using innovative spatial and formal arrangements. Design development and innovative detail

exploration. Integrated systems and code requirements.

Hours
Six-hour studio period
When Offered
Offered in fall and spring.

ARCH 4570 - Senior Design Studio (5 cr.)

Prerequisites
ARCH 4562 , ARCH 4541 , EGPT 2030, ARCH 4312

Description
First part of an advanced capstone vertical design studio sequence with the senior project. Design adopts an innovative approach and a theoretical position in one of three areas of interest: building design: human and environmental studies, tectonics and computational design, and architecture and urban heritage design. Development of design foundations and theoretical frameworks based on a critical review of works, theories and polemics in architecture, and case studies of buildings, spaces, structures within specific settings. Study of components and drivers of design. Development of a space and functional program. Production of a preliminary schematic design.

When Offered
Offered in Fall and Spring

ARCH 4801 - Human and Environmental Studies Theory and Dissertation (3 cr.)

Prerequisites
ARCH 4562

Description

Theoretical framework on state of the art research in human and environmentally responsive design. Definition of a critical theoretical position on a research subject and expression of the position through a theoretical foundation. Development a structured methodology for investigation. Production of a well-written dissertation about a selected topic related to building

design with emphasis on human and environmental studies.

When Offered
Offered in fall and spring.

ARCH 4802 - Tectonics and Computational Design Theory and Dissertation (3 cr.)

Prerequisites
ARCH 4562

Description

Theoretical framework on state of the art research in tectonics and computational design. Definition of a critical theoretical position on a research subject and expression of the position through a theoretical foundation. Development a structured methodology for investigation. Production of a well-written dissertation about a selected topic related to building design with emphasis on human and environmental studies.

When Offered
Offered in Spring.

ARCH 4803 - Architecture and Urban Heritage Theory and Dissertation (3 cr.)

Prerequisites
ARCH 4562

Description

Theoretical framework on state of the art research in architecture and urban heritage studies and design. Definition of a critical theoretical position on a research subject and expression of the position through a theoretical foundation. Development a structured methodology for investigation. Production of a well-written dissertation about a selected topic related to building design with emphasis on human and environmental studies.

When Offered
Offered in spring.

ARCH 4920 - Special Problems in Architectural Engineering (1-3 cr.)

Prerequisites
Prerequisite: consent of instructor and department chair on the basis of a well-defined proposal.

Description
Independent study in various problem areas of construction may be assigned to individual students or groups. Readings assigned and frequent consultations held

When Offered
Offered in fall and spring.
Repeatable
May be repeated for credit if content changes.

ARCH 4930 - Selected Topics in Architectural Engineering (3 cr.)

Prerequisites
Prerequisite: senior standing.

Description
Specialized topics in Architecture will be selected and presented.

When Offered
Offered in fall and spring.

ARCH 4931 - Introduction to Urban and Architecture Conservation (3 cr.)

Description
Egypt is one of the richest countries in its cultural heritage. Monuments, buildings of value, archaeological remains, and preserved urban tissues are dispersed along its geographical areas dating back from pre-history, Ancient Egyptian, Coptic, Islamic, Colonial and Modern periods, in addition to the vernacular settlements. Although this gift is an asset for its development, challenges for comprehensive conservation and valorization are great. Poverty, demographic pressure, lack of awareness, deteriorating services, environmental hazards, and difficult bureaucratic procedures are among other difficulties facing heritage successful preservation.

ARCH 4932 - Sustainable Landscape architecture in Hot an Arid Environments (3 cr.)

Description
The aim of this course is for students to understand the context and the process within which sustainable landscape environments are conceived and designed, from concept to preparation of construction documents stage and to apply this knowledge in a specific landscape design project with emphasis on establishing sustainable sites consideration.

ARCH 4933 - Vernacular Architecture (3 cr.)

Description
The objective of this course is to introduce students to a departure from conventional architecture to the vernacular. By exploring architecture without architects, the vernacular will be discussed not as a style or even an architectural approach, but an attitude. Using examples from different geographic regions and different historical periods, as well as contemporary interpretations, students will engage in a series of lectures, debates, research and design.

Hours
Three hour class and studio period

ARCH 4934 - Cairo in the Curriculum, The Urban Laboratory: Mapping Cairo's Complexities (3 cr.)

Description
This course examines the city of Cairo through the lens of the juxtopolis pedagogy. It defines the city as a multi-layered series of juxtapositions representing often colliding and oppositional urban conditions. Students are expected to apply various mapping tools to document these urban juxtapositions through a series of thematic investigations that change every semester.

ARCH 4935 - Coptic Art and Architecture (3 cr.)

Description
The course offers an interdisciplinary undergraduate course to students majoring in either art or architecture, as the theme of the course covers the study of architectural forms and elements of Coptic churches, construction and roofing systems, as well as portraits, iconography, wall paintings, decorative patterns, wood and stone carving.

ARCH 4936 - Design of Interior Spaces (3 cr.)

Prerequisites
ARCH 4541 - Introduction to Interior Design (3 cr.)

Description
An applied studio on the design and application of interior design concepts and technical aspects. Lighting and texture in the design of interior spaces. Principles of furniture design and manufacturing. Utilization of textiles and accessories in interior spaces. Integration of finish materials & elements. Sustainability in the design of interior spaces. Creating an image and signage systems. Design for the disabled.
Hours: 1 hr lecture and 3 hrs studio

ARCH 4937 - Seminar on Contemporary Architecture Discourse (3 cr.)

Prerequisites
ARCH 3553 - Architectural Design Studio II (4 cr.)

Description
This course attempts to question the assumption that local architects and designers have little value to add to the global design discourse. Readings and discussions over the presentations of a number of local designers on their works and design directions will be the channel to debate this issue against the backdrop of the concurrent global discourse. Students should emerge with a critical understanding of the contemporary architecture discourse in Egypt and express such an understanding within an effective theoretical format.

ARCH 4938 - Urban Dialogues on Heritage and Space (3 cr.)

Prerequisites
ARCH 4532

Description
This course introduces students to the field of "heritage" and how it has emerged as a concept and mechanism to organize the city since the nineteenth century till our present time. Emphasis will be on understanding the role of heritage in the city, its underpinning politics, and the key role it plays in constructing new forms of historical knowledge. The course foregrounds the

theoretical debates around the topic and invites experts in the field to discuss their projects and researches. The course adopts the possibility of heritage in becoming a gateway for the past, a mode of development for the present and social action for the future. It offers students a platform to investigate, question and imagine how heritage projects can re-map the city and its spaces, transform it and become a means of civic engagement and empowerment to its citizens.

ARCH 4939 - Advanced Architectural Computing (3 cr.)

Prerequisites
ARCH 3522

Description
Advanced computing concepts in architecture including interactive and responsive architecture, artificial intelligence and machine learning, architectural robotics, building automation, generative design, spatial computing, and material-based computation. Students engage in a series of readings and discussions with expert researchers and professionals, implement coding and visual programming to develop interactive architecture prototypes, and develop extended abstracts with the prospect of scientific publication.

ARCH 4942 - Co-Design Campus as a Sensory Landscape (3 cr.)

Prerequisites
Senior Standing.

Description

Broaden the understanding of the user beyond the normative. Human environment relationship rooted in neurodiversity. Utilizing the university campus as an open laboratory exploring its sensory landscape and the notion of refuge as prospect. Working within the broad framework of the ASPECTSS Design Index defining the built environment as a series of sensory affordances between prospect and refuge. Framed pedagogically by two foundational processes: Pattern Language and Design Thinking, three modules are explored: the theoretical, the experiential and the experimental.

When Offered
Offered in spring.

ARCH 4943 - Inclusive & Participatory Design in Architecture (3 cr.)

Prerequisites
Senior Standing.

Description

Principles, methodologies, aesthetics, and practices of participatory design in a global south context. Participatory approaches at the intersection of community, agency, economics and politics, between international and local experiences. The architect as an enabler. Skills necessary to involve diverse stakeholders in the design process. Create spaces that are accessible, equitable, and responsive to the gendered, raced, and classed needs of identified users. Explore how to engage communities and prioritize marginalized voices. Application on real-world architectural and urban design problems.

When Offered
Offered in spring.

ARCH 4951 - Internship in Technical Drawing and Design (1 cr.)

Prerequisites
ARCH 3311

Description
Each student is required to spend a minimum of 8 weeks of internship in Egypt or abroad. The internship should include substantial practical training in technical drawing and design. Introduction to professional ethics, professional judgment and the social responsibilities of architects. A complete account of the experience with a reflection on its learning outcomes is reported on, presented and evaluated.

When Offered
Offered in fall and spring.

ARCH 4971 - Selected Topics in Human and Environmental Studies of Architectural Engineering (3 cr.)

Prerequisites
Senior standing

Description
Specialized topics in Human and Environmental Studies will be selected and presented

ARCH 4972 - Selected Topics in Tectonics and Computational Design of Architectural Engineering (3 cr.)

Prerequisites
Senior standing

Description
Specialized topics in Tectonics and Computational Design will be selected and presented.

ARCH 4973 - Selected Topics in Architecture and Urban Heritage Design (3 cr.)

Prerequisites
Senior standing

Description
Specialized topics in Architecture and Urban Heritage Design will be selected and presented

ARCH 4980 - Senior Project I (4 cr.)

Prerequisites
ARCH 3522, ARCH 4312, ARCH 4541, ARCH 4562

Description

First part of an advanced capstone vertical design studio sequence with the senior project. Design adopts an innovative approach and a theoretical position in one of three areas of interest: building design: human and environmental studies, tectonics and computational design, and architecture and urban heritage design. Development of design foundations and theoretical frameworks based on a critical review of works, theories and polemics in architecture, and case studies of buildings, spaces,structures within specific settings. Study of components and drivers

of design. Development of a space and functional program. Production of a preliminary schematic design.

Hours
Six-hour studio period.
When Offered
Offered in fall and spring.

ARCH 4981 - Senior Project II (5 cr.)

Prerequisites
ARCH 4801, ARCH 4802, ARCH 4803, ARCH 4980, A minimum of three credits from the concentration elective stream.

Description

Second part of the advanced capstone vertical design studio sequence. Design builds on the innovative approach and theoretical position that was developed in the senior design studio in one of three areas of interest: human and environmental studies, tectonics and computational design, and architecture and urban heritage design. Development of advanced schematic design using innovative spatial and formal arrangements. Design development and innovative detail exploration.

Hours
Eight-hour studio period.
When Offered
Offered in fall and spring.

ARCH 5201 - Philosophy & Theory of Architecture (3 cr.)

Description
This course seeks to connect the architecture debate with the wider historical, cultural and political discourse. Students explore writings in theory and philosophy where political, social, and cultural aspirations become arguments for architectural and urban modernity. The seminar structure allows students to juxtapose different readings against each other to emerge with new modes of questioning. The goal is to unravel some of the complexities of the intertwined

networks of relationships that make the questions we ask more relevant than the specific answers we often reach.

ARCH 5202 - Critical Thinking in Architectural Design (3 cr.)

Description
In this course, the students as the primary investigators in any research for design process become the primary target of investigation. Their own approaches and perspectives are put to question raising the critical perspective of informed questioning especially as it pertains to the specific intangible and tangible dimensions of design and the profession. Critical readings of how social, cultural, and political contexts agendas become effective arguments for architectural and urban design decisions will inform the debates within an applied studio setting on how professional forms of research, communication and practice produce knowledge and architecture outcomes.

ARCH 5221 - Research Methods in Architecture & Urbanism (3 cr.)

Description

Research Methods in Architecture and Urbanism is the search for new knowledge and ideas about the built environment. This course seeks to prepare the graduate researcher to deal with the diverse questions related to studying the built environment and the various research approaches and methods available to adopt in pursuing research questions. It poses the key issues distinguishing research in these disciplines and introduces various methods available for integration, with an exploration of their application challenges through case studies.

ARCH 5930 - Advanced Topics in Architecture (3 cr.)

Description

Topics chosen according to special interests of faculty and students, based on the following sub-domains: Humanities, Tectonics and Computational Design, Heritage and Urbanism, Sustainability, and other emerging topics in architecture.

Repeatable
May be repeated for credit more than once if content changes.

ARCH 5980 - Research Guidance Thesis (3 cr.)

Prerequisites
ENGR 5940

Description
Consultation on problems related to student thesis.

Notes
Must be taken twice for a total of 6 credits.

Biology

BIOL 1010 - Introduction to Life Sciences (3 cr. + 1 cr. lab)

Prerequisites
Non-science majors only.

Description
This course aims to emphasize the connection between fundamental principles of Biology and other life sciences. Lectures and lab sessions cover topics such as the cell as basic unit of life, biological molecules to understand energy flow and nutrition, tissues and organ systems (with a focus on human health), and ecological and evolutionary processes explaining biodiversity.

When Offered
Offered in fall and spring.
Notes
Students taking BIOL 1010 may not take BIOL 1011 for credit.

BIOL 1011 - Introductory Biology I (3 cr. + 1 cr. lab)

Description
Introduction to the basic concepts of biology, molecules of life, cell structure and function, photosynthesis, cell respiration, cell cycle and cancer are presented. Basis and applications of genetics and molecular biology are addressed. The course introduces students to the fundamental concepts, principles and processes upon which the unity of life is based: the

relationship of the course material to their day-to-day world: and how to apply scientific methods. Laboratories introduces students to basic principles of plant and animal structure and function and build on the principles of inheritance to the structure and function of tissues and organ systems.

When Offered
Offered in fall, spring and summer.
Notes
Students cannot take both BIOL 1010 and BIOL1011 for credit

BIOL 1012 - Introductory Biology II (3 cr. + 1 cr. lab)

Prerequisites
BIOL 1011 or exemption

Description
Based on the diversity of life: viruses, bacteria, protistans, fungi, plants and animals are studied. The course concentrates on characteristics of different domains of life, structure, and function of plants and animals, population genetics, ecology and the environment. Laboratories introduce students to evolution, structure and function of different populations of organisms and ecosystems. Some field applications are examined.

When Offered
Offered in spring.

BIOL 1040 - Essentials of Environmental Biology (3 cr.)

Prerequisites
Non-science majors only.

Description
This course is designed for non-science majors who are interested in in learning more about environmental issues through the lens of biological principles. The course covers biological concepts and fundamentals of environmental biology, and introduced students to a range of environmental issues (pollution, degradation of natural resources, overpopulation, etc.) that are currently affecting Egypt and the rest of the planet. The course will highlight man's impact on how our planet functions and examine societal and scientific solutions to these problems. The

course is taught through lectures, class projects, reading discussions, and may include mandatory field trips and active participation in a sustainable community development project.

When Offered
Offered in fall.

BIOL 1098 - Fundamentals of Neurosciences (3 + 1 cr.)

Description
How does our brain drive our daily thoughts, actions, emotions, and memories? This course will explore the wonders and mysteries of the human brain, from a biological and psychological perspective. Students will learn about the "nuts and bolts" of the nervous system, including how the brain and mind control our actions, decisions, emotions, and memories.

Cross-listed
Same as PSYC 1098

BIOL 1150 - Genetics for Everyone (3 cr.)

Description

An introduction to the basic structure and function of genes, chromosomes, and DNA. Gene inheritance and the reasons that people have different body characteristics and are prone to different diseases, are discussed.

BIOL 1410 - Current Health Issues (4 cr.)

Description
Explores the public and personal health infrastructure with a focus on Egypt. The course has an optional service-learning component in which students become aware of their role in community health issues. Information will be present in the form of classroom discussions, debates, field trips, and videos.

Notes
This course is open to all AUC students.

BIOL 1930 - Selected Topic for Core Curriculum (3 cr.)

Description
Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

When Offered
Offered occasionally.

BIOL 2090 - Quantitative Biology (3 cr. + 1 cr. lab)

Prerequisites
BIOL 2150

Description
This course discusses essential concepts in experimental design and hypothesis testing and introduces quantitative skills for processing, analysing, and visualizing data generated by biological and medical experiments, focusing on the analysis of gene expression data. The open-source bioinformatics and computing platform R will be introduced and used throughout the course in the laboratory sessions.

BIOL 2150 - Genetics (3 cr.)

Prerequisites
BIOL 1010 or BIOL 1011

Concurrent
BIOL 2151 for biology major only.

Description

A survey of the fundamentals of classical and molecular genetics. This includes the principles of segregation, DNA structure and genetic variation, chromosome and gene organization, replication, expression, and regulation in bacteria, viruses, and humans, as well as ethical issues in genetic research.

BIOL 2151 - Genetics Laboratory (1 cr.)

Concurrent

Concurrent with BIOL 2150 for biology major.

Description

An introduction to a broad range of genetic laboratory techniques. Additional emphasis will be given to the development of hypotheses, experimental design/data analysis, and presentation of results.

BIOL 2160 - Introduction to Bioethics (3 cr.)

Prerequisites

BIOL 1011 or BIOL 1012

Description

An introduction to the principles of ethics with an emphasis on bioethics. Topics include the fundamentals of scientific research, scientific writing, and ethical considerations in biological and biomedical research. A survey on the basic methods of research, data collection, interpretation, and reporting will be covered.

BIOL 2230 - Molecular and Cell Biology (3 cr.)

Prerequisites

BIOL 2150

Concurrent

BIOL 2231 for biology majors.

Description

An in-depth study of the structure and function of the cell, including mechanisms of DNA replication and repair in prokaryotic and eukaryotic organisms and regulation of transcription and translational machinery. Protein sorting and post-translational protein modifications, mechanisms of cell-cell signaling, and their role in regulating genomic integrity and cell cycle regulation.

When Offered

Offered in spring.

BIOL 2231 - Molecular and Cell Biology Laboratory (1 cr.)

Prerequisites
BIOL 2151

Concurrent
BIOL 2230 for Biology Majors.
Description

The identification of basic cell structures, including basic laboratory techniques for DNA and protein isolation, characterization, and computational tools in molecular biology.

When Offered
Offered in spring.

BIOL 2340 - General Botany (3 cr. + 1 cr. lab)

Prerequisites
BIOL 1011 (or BIOL 1010) and BIOL 1012

Description
This course will explore several aspects of plant biology with emphasis on structure, function, reproduction, systematics, plant metabolism and development. Students will be introduced to basic concepts of plant breeding, plant tissue culture and genetic transformation and the generation of genetically-modified crops. Detailed morphological, physiological study and greenhouse experimentation will be covered in the lab. Upon completion of this course, students will gain an appreciation for plant diversity, learning how plants are essential for supporting life on our planet and the potential impact of plant biotechnology on our life.

When Offered
Offered in spring.

BIOL 3130 - Molecular Evolution and Population Genetics (3 cr. + 1 cr. lab)

Prerequisites
BIOL 2230

Description

This course covers a spectrum of evolutionary forces at the molecular level and their impact on allele frequencies in the population. Topics the course will address include the Hardy-Weinberg principles, linkage disequilibrium, genetic drift, neutral theory of molecular evolution, mutation and natural selection, evolution of gene families, lateral gene transfer, basics of molecular phylogenetics, and origin of viruses and origin of the cell. Laboratory sessions will include computational simulations of evolutionary forces in action, population genetics, and maximum likelihood and Bayesian phylogenetic inferences.

BIOL 3310 - Microbiology (3 cr. + 1 cr. lab)

Prerequisites
BIOL 2230

Description
This course provides a broad understanding of the microbial world, its application and implications. The fundamentals and principles of bacteriology, virology and mycology are addressed. Cellular and molecular aspects that contribute to selected infectious diseases and the role of the immune system in preventing such diseases are discussed. Additionally we examine the recent advances in pharmaceutical and biotechnology application of microbes.

BIOL 3320 - Physical Foundations of Biological Systems (3 cr.)

Prerequisites
PHYS 1011

Description

An integration of Human Physiology and the underlying physics concepts. Covers the basic physics principles that underlie the mechanisms operating in the human body along with the basic knowledge of the body anatomy. Topics include the function of the Nervous, Skeletomuscular and Cardiovascular systems; foundations of Medical Physics applications by covering the basic principles of Energy-Matter interactions.

When Offered
Offered in fall, spring and summer.

BIOL 3321 - Physical Foundations of Biological Systems Laboratory (1 cr.)

Prerequisites
PHYS 1012, (BIOL 3320 or concurrent)

Description

Measurement of the physical quantities related to the skeletomuscular, Cardiovascular, and Nervous systems as well as diagnosis tools in the medical field.

When Offered
Offered in fall, spring and summer.

BIOL 3326 - Vertebrate Anatomy and Physiology (3 cr.)

Prerequisites
BIOL 2230

Concurrent
Biology Majors must take this course concurrently with BIOL 3327.

Description

The basic anatomy and physiology of the vertebrate body from a functional perspective. A description of the anatomy of the major organ systems found in vertebrates and explaining how the physiology of these anatomical systems enables vertebrate bodies to function in their environment. Including a survey of model organisms to compare variations in anatomy and physiology associated with different behavioral and ecological requirements.

When Offered
Offered in spring.

BIOL 3327 - Vertebrate Anatomy and Physiology Laboratory (1 cr.)

Prerequisites
BIOL 2230

Concurrent

BIOL 3326 for Biology major.

Description

Dissection of preserved and fresh vertebrate specimens and physiological experiments to investigate the function of various organ systems, and computer learning models, to give students in-depth experience with anatomical identification and knowledge.

When Offered

Offered in spring.

BIOL 3341 - Animal Behavior (3 cr. + 1 cr. lab)

Prerequisites

BIOL 1011 or BIOL 1098

Description

Study of ethology with emphasis on its development, control and function. Laboratory includes observations and descriptions, qualification techniques and experimentation.

BIOL 3370 - Developmental Biology (3 cr. + 1 cr. lab)

Prerequisites

BIOL 2230

Description

This course is designed to acquaint students with the mechanisms that direct the development of multicellular organisms from a single cell. The course covers the fundamental processes operating during embryonic development including cellular differentiation, development of specialized tissues, morphogenesis, and organogenesis at the cellular and molecular levels. Special attention will be on the understanding of key experiments that contributed to the current knowledge of the basic principles implicated in the development of the organism. Laboratory includes examination of various developmental biology aspects at the molecular, cellular and morphological levels.

BIOL 3510 - Ecology and Conservation Biology (3 cr. + 1 cr lab)

Prerequisites

BIOL 1012

Description
The study of the distribution and interaction of organisms determined by biological and physical processes in the environment. Predicting and managing environmental changes (e.g., climate change) and the ecological interactions and mechanisms at organism, population, community, and ecosystem levels. With an emphasis on managing chemical, physical, and other human-driven factors for conservation purposes and the collection, analysis, and interpretation of ecological data using a broad array of statistical tools and applications.

BIOL 3540 - Sustainability and Environmental protection (3 cr.)

Prerequisites
BIOL 1012 or instructor's consent.

Description
Examination of the concept of sustainability and how the biosphere, atmosphere, hydrosphere, and lithosphere interact. Analysis of how natural resources can be sustainably used and the role of environmental ethics(e.g., food security, mineral resources management) and how they are impacted by human activities (e.g., waste disposal, pollution), and the role of biotechnology in finding sustainable solutions and alternatives.

BIOL 3600 - Introduction to Bioinformatics (3 cr.)

Prerequisites
BIOL 1010 or BIOL 1011 or the instructor's consent.

Description
Bioinformatics is the application of computational methods and tools to, retrieve, and analyse large quantities of sequence datasets. The course covers genomic public databases and resources, sequence alignment, protein structure and function prediction, and analysis of microarray gene expression. Concepts of programming for bioinformatics are introduced. The course provides the students with hands-on experience solving practical problems such as characterization of gene interest, identification of differentially expressed genes, prediction of secondary and tertiary structures of proteins, and tracking spatial and temporal dynamics of a virus.

BIOL 3601 - Bioinformatics Tools and Techniques (3 cr.)

Prerequisites
BIOL 3600

Description
This interdisciplinary course is designed for students in biology, computer science, and mathematics to build the most essential concepts and practices for Bioinformatics development using Biopython and R.

BIOL 3710 - Introduction to Biotechnology (3 cr.)

Prerequisites
BIOL 2150 or BIOL 2230

Description
An introduction to biotechnology, including the principles of recombinant DNA technology, protein engineering, directed mutagenesis, manipulation of gene expression, and large-scale production of recombinant proteins. The generation and applications of transgenic organisms and gene targeting technology, including gene knockout and knockdown.

BIOL 3750 - Introduction to Genomics (3 cr.)

Prerequisites
BIOL 2150 or BIOL 2230

Description
An introduction to genome biology and applications of genomics. Topics include genome sequencing and analysis, genomics approaches to studying gene expression, and the essential applications of genomics in human health and disease, crop plant improvement, and other applications.

BIOL 3910 - Guided Studies in Environmental Sciences (3 cr.)

Description

Under faculty guidance, students will carry out a project on an environmentally related topic. The students will present their results by submitting a common/individual report or by passing an examination, as determined by the supervisor.

Cross-listed
Same asCHEM 3910
When Offered
Offered in fall and spring.

BIOL 4098 - Selected Topics in Neuroscience (3 cr.)

Prerequisites
BIOL 1011 or BIOL 1098 or PSYC 3800

Description
An interdisciplinary course discussing current topics in neuroscience, through the examination of content related to neurobiology, neuroanatomy, neurophysiology. Examples of topics may be neuroscience research techniques, hormones and behavior, psychopharmacology, cognitive neuroscience, affective neuroscience, neurological disorders.

Cross-listed
PSYC 4098

BIOL 4150 - Molecular Biology of the Gene (3 cr. + 1 cr. lab)

Prerequisites
BIOL 2230 and CHEM 2003 or co-requisite.

Description
A comprehensive molecular biology course with emphasis on principles, processes and methodologies leading to the formation of central concepts of molecular genetics. Students are presented to the latest models of describing gene structure, genome organization and regulation of gene and protein expression, in eukaryotes and prokaryotes. Current topics such as epigenetics, RNA interference and transgenics are also exposed. Laboratory sessions cover modern techniques in recombinant DNA technology related to gene cloning, protein expression, and omics.

BIOL 4160 - Methods in Behavioral Neuroscience (3 cr.)

Prerequisites
PSYC 3800

Description

This course offers a comprehensive overview of classic and modern methods in neuroscience, including a review of the structure and function of the nervous system in health and disease. Students will explore molecular, cellular, circuit based, and whole system techniques and their applications in scientific research. This course is intended for advanced undergraduate students who are considering graduate work in the field of neuroscience. Students will critically review up-to-date literature and attend research seminars and design a research experiment. Projects will be based on the student's areas of interest.

Cross-listed
PSYC 4160
When Offered
Offered in Fall/ Spring.

BIOL 4170 - Molecular Biotechnology (3 cr. + 1 cr. lab)

Prerequisites
BIOL 2230

Description
An overview of molecular biotechnology's scientific principles and techniques, with emphasis on real-world applications. Topics covered include manipulation and cloning DNA into bacteria, plants, and animals, expression of recombinant proteins, and modification of genomes, including the ethics of molecular biotechnology.

BIOL 4230 - Cellular and Molecular Immunology (3 cr.)

Prerequisites
BIOL 2230 and CHEM 1005

Description
An introduction to the basic structure and function of the immune system at the molecular, cellular, tissue, and organ system levels. Topics include the processes involved in the host defense against infection, antigen-antibody structure and function, effector mechanisms, complement, major histocompatibility complexes, B-and T-cell receptors, antibody formation and immunity, cytotoxic responses, and regulation of the immune response. Other topics include different aspects of applied immunology, such as cancer immunology, immunotherapy, autoimmunity, omics, drug targeting, and vaccination.

BIOL 4330 - Tumor Biology (3 cr. + 1 cr. lab)

Prerequisites
BIOL 2230 and BIOL 2150

Description
The course provides a broad knowledge on the biological principals underlying tumor and cancer formation. The basic science of tumor at the cellular, molecular and genetic level will be addressed. The course allows students to understand the fundamental mechanisms that underlie eukaryotic cell multiplication, cell senescence and cell death, including the alterations that are involved in the initiation of uncontrolled growth and carcinogenesis. In addition, cell cycle surveillance mechanisms that ensure genomic integrity and the signaling pathways that regulate tumor development and spread will be covered.

BIOL 4360 - Human Anatomy and Physiology (3 cr.)

Prerequisites
BIOL 1011 or BIOL 2150

Concurrent
BIOL 4361 for Biology major.
Description

A systematic study of the structure, function, and regulation of major body systems and organs, including homeostasis, nutrition, and regulation of temperature, and fluids. The structure and function of the respiratory, circulatory, and digestive systems, reproduction, hormonal and nervous control, and behavior are discussed with a focus on the human body.

BIOL 4361 - Human Anatomy and Physiology Laboratory (1 cr.)

Prerequisites
BIOL 1011 or BIOL 2151

Concurrent
BIOL 4360 for biology major.

Description

A comprehensive overview of the gross and microstructure and function of the major organs and systems. Activities investigate the respiratory, cardiovascular, musculoskeletal, and nervous system structure and functions.

BIOL 4540 - Marine Ecology and Coral Reef Biology (3 cr.)

Prerequisites
BIOL 1012 and BIOL 3510

Description
The ecology of marine and coastal ecosystems, as encountered in Egypt and other regions of the world. Relationships between physical and chemical processes and biological mechanisms in marine ecosystems and their biological communities are analyzed, with examples from the Red Sea and the Mediterranean Sea.

BIOL 4541 - Desert Ecology (3 cr. + 1 cr. lab)

Prerequisites
BIOL 3510

Description
Examination of the ecology of desert ecosystems with particular reference to Middle-Eastern deserts. Emphasis is placed on the strategies employed by desert-living organisms which allow them to survive and prosper under desert conditions. Field trips are an integral part of this course.

BIOL 4690 - Bioinformatics Capstone Seminar I (1 cr.)

Prerequisites
Prerequisites or corequisites BIOL 3600 or BIOL 3601

Description
Students complete a capstone proposal and major elements of the capstone project for the Minor in Bioinformatics. Bioinformatics Capstone Seminar I will focus on the development of the problem statement and the research questions that will be answered in the Capstone. Emphasis will be placed on the development of a sound rationale for the project, justified by a thorough literature review.

BIOL 4691 - Bioinformatics Capstone Seminar II (2 cr.)

Prerequisites
BIOL 4690

Description
In this project-based course, the students tackle a real-life biological or biomedical problem using a computational approach where they utilize existing bioinformatics resources and/or develop novel tools. The students are required to deliver a written report and an oral presentation describing the problem, methodology/approach, contribution, and results. This course is available only for students enrolled in the Minor in Bioinformatics program.

BIOL 4910 - Guided Studies in Biology (1-4 cr.)

Prerequisites
Prerequisite: consent of the instructor.

Description
Under the guidance of a faculty member and with the approval of the Chair, the student undertakes readings or research on a specific topic in biology. The student should demonstrate achievements by presenting results, submitting a report, or passing an examination as determined by the supervisor.

BIOL 4930 - Selected Topics in Biology (1-4 cr.)

Prerequisites
Consent of the instructor.

Description
Topics in biology chosen according to the special interests of the student and faculty.

Repeatable
May be repeated for credit more than once if the content changes.

BIOL 4950 - Practical Internship (1 cr.)

Prerequisites
A minimum of 16 credits of Biology courses

Overall GPA 2.5 or higher at the time of application

Approval of the student's advisor and the department chair

Description
A minimum of eight weeks or (80 hours) of training in industrial, commercial, educational, or government organizations in Egypt or abroad. A detailed report of this practical experience is presented both in written form and orally and is evaluated according to department rubrics. This course can be repeated for a total of 4 credits towards the major electives.

BIOL 4980 - Senior Research Thesis (1 cr.)

Prerequisites
Senior standing in biology.

Description
Students select a research topic according to their field of interest and the availability of advisers and facilities. A research proposal is submitted to include a literature review on the topic and the design of a laboratory and/or field investigation.

When Offered
Offered in fall

BIOL 4981 - Seminar in Biology (2 cr.)

Prerequisites
BIOL 4980

Description
The senior research thesis project is executed and presented in the form of an oral presentation and a poster session in the annual biology department senior thesis conference. A final report, written similar to an original research manuscript, to include the execution, results and conclusion of the project will be submitted.

When Offered
Offered in spring.

Biotechnology

BIOT 5201 - Biochemistry (3 cr.)

Description
A basic course introducing the student to chemical bonds, structure of biomolecules, the structure and function of cellular components, protein structure and folding, carbohydrates metabolism, fatty acids oxidation, the kinetics of enzyme-catalyzed reactions, cellular metabolism, energy production, cellular regulatory processes, signal transduction cascades, and photosynthesis.

Cross-listed
Same as CHEM 5201.

BIOT 5202 - Cell and Molecular Biology (3 cr.)

Description
This course is designed to introduce the student to structure and function of the basic unit of life, the cell. This includes organelle biogenesis, cytoskeleton and cell motility, protein and lipid trafficking, membrane and ion transport, energy flow within the cell, cell cycle, division, and

programmed cell death. In addition, to the passage of information from gene to protein will be addressed.

BIOT 5203 - Biotechnology (3 cr.)

Description
This course, taught by a team of instructors, covers different areas of biotechnology. This course introduces students to the different aspects of the biotechnology revolution including principles of recombinant DNA technology, protein engineering, directed mutagenesis, manipulation of gene expression, microbial synthesis of biologics, biomass utilization, large scale production of proteins, transgenic animals, and the human genome project. In addition, this course introduces students to bioinformatics and bioengineering.

BIOT 5204 - Experimental Biotechnology (3 cr.)

Prerequisites
BIOT 5203

Description
This course consists of two class periods and one three-hour lab period. It introduces students to the experimental methods used in investigation and research in biotechnology applications. The laboratory section will provide students with hands-on experimentations in major techniques in molecular biology such as DNA and RNA isolation, protein purification, DNA and protein electrophoresis, nucleic acid hybridization and polymerase chain reaction.

BIOT 5205 - Basics of Bioentrepreneurship (3 cr.)

Description
This course covers four modules: business aspects of biotechnology, regulatory issues, patenting biotechnology inventions, and bioethics.

BIOT 5206 - Fundamentals of Bioinformatics (3 cr.)

Prerequisites
Prerequisites: Familiarity with molecular biology, calculus, basic probability and statistics.

Description
This course should introduce students to the fundamental theories and practices of bioinformatics. Lectures should focus on the basic knowledge required in this field, including the need for databases, access to genome information, sources of data, and tools for data mining. The course should also cover identification of both lower order and higher order informational patterns in DNA and approaches to linking genome data to information on gene function. Emphasis will be placed on how to use the databases and tools. Students should use the PERL programming language in this course.

BIOT 5207 - Molecular Diagnosis (3 cr.)

Description
Topics include diagnosis of genetic disorders, infectious diseases, malignant diseases, and forensic applications such as paternity testing, DNA fingerprinting. Aspects of quality control, quality assurance, regulatory issues, and intellectual properties will be also covered.

BIOT 5208 - Molecular Genetics (3 cr.)

Description
The course introduces genetics studies in molecular biotechnology; introduction to Mendalian genetics, eukaryotic gene regulation, genome project and model organisms utilized in research studies, cytogenetics, cellular genomic instability in carcinogenesis and molecular genetic based therapeutic approaches.

BIOT 5210 - Microbial Biotechnology (3 cr.)

Description
The course introduces current advances in bacteriology, mycology and virology. This covers from medical applications, environmental application of microbes to microbial quality control and assurance in biotechnology products. In addition topics include the use of microbes in recombinant DNA technology, protein production in prokaryotes, fermentation technology, antimicrobial peptides and its applications in medical microbiology.

BIOT 5211 - Bioengineering (3 cr.)

Description
The application of the concepts and methods of the physical sciences and mathematics in an engineering approach to problems in the life sciences.

BIOT 5271 - Bionanotechnology (3 cr.)

Description
This course covers the use of various nanostructures for ultrasensitive detection of DNA, bacteria, and viruses. Recent techniques for detection of single biomolecules that offers superior advantages over the conventional bulk measurements will also be presented. This course will also cover the use of different nanoparticles such as nanocrystals and gold nanoparticles for optical imaging, as hyperthermia agents for cancer therapy, and the development of smart drug delivery nanocarriers.

Cross-listed
Same as NANO 5271

BIOT 5910 - Independent Study In Biotechnology (3 cr.)

Description
Independent study in various problem areas of biotechnoloyg may be assigned to individual students or to groups. Readings assigned and frequent consultations held.

Notes
Students may sign up for up to 3 credits towards fulfilling M.Sc. requirements.

BIOT 5930 - Selected Topics in Biotechnology (3 cr.)

Prerequisites
Pre-requisite: consent of instructor, graduate standing.

Description
Topics chosen according to special interests of faculty and students.

Repeatable
May be repeated for credit more than once if content changes.

BIOT 5980 - Research Guidance Thesis (3 cr.)

Prerequisites
SCI 5940

Description
Consultation on problems related to student thesis.

Notes
Must be taken twice for a total of 6 credits.

BIOT 6204 - Model Systems in Cancer Research (2 cr. + 1 cr. lab)

Prerequisites
BIOT 5203 or BIOT 5204 .

Description
This course exposes graduate students to a powerful tool, cell lines, for research. Cell lines are commonly used in many fields of laboratory research mainly as in vitro models in cancer research. Topics covered in class include but not limited to the biology, epidemiology, and molecular mechanisms of cancer including genetic variants, role of microRNA and epigenetic gene deregulation. Students, throughout the semester, will develop an understanding of the molecular events underlying the development of human cancer through examining primary literature related to the current knowledge of cancer biology. The course includes a laboratory component exploring a range of techniques used in the study of cancer biology.

BIOT 6205 - Animal Models in Biomedical Research (3 cr.)

Prerequisites
Graduate standing or permission of instructor.

Description
In vivo models as tools for research in the biotechnology and biomedical fields. The choice of

vertebrate and non-vertebrate animal models and the ethical and regulatory considerations of animal use and care. Experimental design, sample size, reduction, replacement, and re-use of animals. Selecting different animals for studying diabetes, cancer, cardiovascular diseases, and neurological diseases and the comparative anatomy and physiology and limitations of different models.

BIOT 6206 - Computational Genomics and Transcriptomics (3 cr.)

Prerequisites
BIOT 5206

Description
The course is designed to provide graduate students with the essential concepts and skills for processing, analyzing, and visualizing biologcial data generated by modern high-throughput transcriptomic and genomic technologies such as microarray and next-generation sequencing. The open-source statistical platform R and the BioConductor package will be used throughout the course for the practical sessions. The course will focus on how to extract meaningful information from microarray and RNA-Seq data (e.g., differentially expressed genes, alternative splice forms, and polymorphism). Different data visualization methods will be covered from simple summarizing graphs to interaction networks of cellular elements. Practical exercises will use publically published data and simulated data with applications crossing from cancer genomics to environmental genomics. Target audience is biomedical and computational sciences graduate students and postdoctoral researchers.

When Offered
Offered in fall.

BIOT 6207 - Systems and Computational Biology (3 cr.)

Description
Systems biology is an interdisciplinary study field that focuses on complex interactions in biological systems. A major goal of systems biology is the modeling and discovery of emergent properties, properties of a system whose theoretical description is only possible using techniques, which fall under the remit of systems biology. The course targets graduate students from various scientific backgrounds. This course aims to provide hands-on experience in computational systems biology by combining experimental data and mathematical modeling with emphasis on modeling of cellular pathways. Potential biomedical and biotechnological

applications are introduced.

When Offered
Offered in fall.

BIOT 6930 - Current Topics in Biotechnology (3 cr.)

Description

This course provides a comprehensive and thorough understanding of recent trends in biotechnology research and development. Frontier areas in biotechnological applications as bioremediation, genetically modified organisms, molecular medicine and nano-biotechnology will be addressed.

BIOT 6931 - Reading and Conference Course (3 cr.)

Description
Contemporary biotechnology topics, addressed from current primary literature will be discussed. Dogmas and disputes in biological, medical and/or agricultural sciences will be addressed to generate student discussions.

BIOT 6980 - Research Guidance Dissertation (3 cr.)

Description

Consultation on problems related to student thesis. To be taken 11 times for credit.

Business Administration

BADM 2001 - Introduction to Business (3 cr.)

Description
The course is designed to be an introductory course for students with no prior knowledge in business. The course starts by defining the business organization and its role in society as well as entrepreneurship and its role in the economy. The course then covers some of the business functions including research and development, marketing, production, finance. The four basic functions of a manager, namely planning, organizing, leading and controlling are also

introduced. The ethical and social responsibility if business if emphasized. The course is meant to give students who are considering majoring or minoring in Business or Entrepreneurship an introductory overview about the field , that gives a practical and integrated view of the profession and the field of study.

BADM 3002 - International Business (3 cr.)

Prerequisites
MGMT 3201 or BADM 2001 along with MKTG 2101

Description
The social, cultural, political, legal, and technological environment of international business. The theoretical relationship underlying international business transactions and the integration of functional activities in international firms.

When Offered
Offered in fall and spring.
Notes

Enrollment in this course is limited, and priority is given to students from within the major, students enrolling in this course to complete a collateral requirement in another major, and students who have declared business administration as a minor.

BADM 3003 - Decision Making for Sustainable Organizations (3 cr.)

Prerequisites
BADM 2001 or MGMT 3201

Description

In today's rapidly evolving world, organizations face complex challenges that require sustainable solutions. This course provides students with the frameworks, tools, and strategies needed to make informed and responsible decisions that balance profitability with environmental and social impact. By the end of the course, students will be equipped to implement decision-making processes that contribute to long-term organizational resilience, sustainability, and positive societal impact.

When Offered

Offered in fall and spring.

Notes

Enrollment in this course is limited, and priority is given to students from within the major, students enrolling in this course to complete a collateral requirement in another major, and students who have declared business administration as a minor.

BADM 4001 - Business Strategy (3 cr.)

Prerequisites

Senior standing and MKTG 2101, FINC 2101, OPMG 3201

Description

A capstone course, which integrates all business functions. Emphasis is on developing business strategies, discussing different levels of strategies, and developing a business plan for organizations.

When Offered

Offered in fall and spring.

Notes

Enrollment in this course is limited, and priority is given to students from within the major, students enrolling in this course to complete a collateral requirement in another major, and students who have declared business administration as a minor.

BADM 4900 - Graduation Project (3 cr.)

Prerequisites

All Business Core courses and graduating senior standing

Description

The graduation project course will enable students to develop an extensive and comprehensive project relating to their field of study with professional benchmark. The course will be designed to integrate all business functions. It aims to provide students with a platform to apply and practice the multidisciplinary business competencies acquired throughout the program within a comprehensive and practical context. The graduation project will either be a consultancy project offering business solutions or marketing plans for real established companies or

developing business plans for startups. Corporate and Social Partners' representatives would be invited to participate in the projects and offer a platform for the students to work on a real-life case.

BADM 4999 - Internship and Assessment (0 cr.)

Prerequisites
Junior standing

Description
This course offers business students an opportunity to complement their academic studies with practical application and demonstrate knowledge attained in areas of global awareness and responsible citizenship.

Course will be graded on pass/fail basis.

BADM 5310 - Strategic Management (3 cr.)

Description
This course provides a framework through which core business skills acquired from the foundational courses are integrated together. Such integration replicates how the different business functions are interrelated and ultimately reflected in the strategic development of the organization. The course addresses two central questions for any business entity; where to compete and how to compete. Participants learn effective means by which a business entity could harness its resources in order to translate a well designed strategy into superior performance at all organizational levels.

BADM 5370 - Business Seminar and Contemporary Topics in Management (3 cr.)

Description
This course is used as a forum for discussion and debate of contemporary issues in Business management. Content will evolve around timely and relevant topics that relate to doing business in the region.

BADM 5401 - Business Consultancy (3 cr.)

Prerequisites
Consent of Instructor.

Description
This course provides MBA students with a platform to apply and practice the multidisciplinary business competencies they acquired throughout the program within a comprehensive and practical context. A major component of the course will be a graduation consultancy project offering business solutions for real established companies or developing a business plan for a startup. Students will also be coached on how to professionally communicate their business solutions as consultants. Skills acquired through this course will be augmented by the extensive use of cases covering a variety of business problems, including but not limited to growth strategy, international and regional expansion, entrepreneurship, family business challenges, organizational restructuring, business transformation, mergers & acquisitions, and operational efficiency.

Business School

BUSC 4000 - Experiential Learning : CO-OP (3 cr.)

Prerequisites
Junior standing and consent of the course instructor.

Description

This is an experiential learning course whereby students are directly engaged, on a full-time basis for at least six months, with external entities including but not limited to multinational corporations, startups, financial institutions, governmental entities, professional services firms, think tanks, local/international economic and monetary bodies, and non-profit organizations. During this engagement, students will be assigned specific tasks relevant to their fields of study providing realistic on the job training. Students are co-evaluated on key learning objectives by an academic faculty and an external entity counterpart ultimately yielding a pass/ fail grade.

BUSC 4001 - Business 360 (3 cr.)

Prerequisites
Undergraduate students in the School of Business with junior standing in addition to instructor

consent.

Description

This interdisciplinary seminar-type course will be delivered by a team of carefully matched academic faculty and prominent business practitioners. Through highly interactive discussions, reflection papers, group collaboration, and other activities timely business topics will be introduced with both scientific rigor and practical application. Once a week, students will meet with a faculty member and a practitioner to discuss a separate topic. The ultimate learning goal of this course is to provide students with a versatile 'toolbox' of state-of-the-art business concepts and applications through an engaging and well-rounded 360-degree learning experience.

Center for Arabic Study Abroad at AUC/ Center for Advanced Arabic Studies in Cairo (CASA@AUC/CAASIC)

AIAS 4101 - An Introduction to Cairo, MSA (4 cr.)

Description

This is a content-based course, ten contact hours per week. This experiential learning course aims at engaging students through a number of historical, political, social and cultural contexts of significance to the society in which they are living, the Cairene society. This happens as they visit places they read about and interview authors they read for. The course places emphasis on the development of reading and writing skills with attention to expanding vocabulary and enhancing grammatical accuracy.

Hours

10

When Offered

Offered in summer

AIAS 4301 - An Introduction to Cairo, ECA (4 cr.)

Description

This course offers ten contact hours per week and aims at developing the fellows' proficiency in speaking so that they can function in their new environment. In addition to focusing on the colloquial of daily life, the course places emphasis as well on 'aammiyyat al-muthaqqafiin (educated colloquial), in which the colloquial is mixed with formal Arabic. Multiple sections of

this course are offered to accommodate varying levels of proficiency in spoken Arabic.

Hours
10
When Offered
Offered in summer

AIAS 5121 - Reading, Writing and Vocabulary Building (6 cr.)

Description
This course fosters and further develops the student's ability to read long, authentic texts on a wide range of topics with minimal dependency on the dictionary. Students are trained to extend their reading strategies and knowledge of different genres and styles. Special emphasis is placed upon vocabulary building and the idiomatic use Arabic. The writing component is integrated whereby students employ and manipulate syntactic and morphological structures studied in the reading component, in addition to various cohesive devices, to produce complex sentences at the paragraph and text level, according to the mores of connected Arabic written discourse.

Hours
This course meets ten hours per week
When Offered
Offered in fall.

AIAS 5151 - Listening And Speaking (3 cr.)

Description
This course further develops students' skill in comprehending large chunks of authentic spoken MSA in different forms of discourse (reports, interviews, debates, etc.). It integrates listening and speaking skills by training students to carry out discussion on various topics of general and personal interest. The course includes a number of live lectures given by specialists in different fields of interests.

When Offered
Offered in fall.

AIAS 5152 - Academic Listening and Speaking (3 cr.)

Prerequisites
AIAS 4101 and AIAS 5151

Description
This course fosters and further develops the students' ability to understand the main ideas and most details of connected academic and discourse in a variety of fields. It does so by teaching strategies to sustain both comprehension and delivery of propositionally and linguistically complex extended aural/oral discourse. These include training students to recognize and use cohesive devices signaling the sequence of thought in a given text, enabling them to follow MSA-ECA code-switching and code-mixing patterns, as well as sensitizing them to the socio-cultural nuances embedded in the spoken message.

When Offered
Offered in spring.

AIAS 5201 - Advanced Translation (3 cr.)

Description
This course fosters and develops students' skills in translating written texts of different genres. Attention is given to points of contrast, idiomatic usage, and semantic fields of corresponding vocabulary in English and Arabic. Most work is done on translating from Arabic into English, with special attention given to developing the skills necessary for the preservation of the finer nuances of meaning when rendering a text from one language to another.

When Offered
Offered in spring.

AIAS 5261 - Advanced Media (3 cr.)

Description
This course further develops the students' critical reading skills of linguistically and conceptually complex texts in Arabic printed media. It does so by exposing the students to different text types on a variety of topics, many outside their respective immediate spheres of interest or specialization. It encourages learners to make inferences based on comprehension of the facts presented in a text through sensitizing them to the socio-cultural nuances embedded in the written message. The course also focuses on vocabulary building and trains learners to

recognize the special stylistics properties of media language.

When Offered
Offered in spring.

AIAS 5271 - Advanced Writing (3 cr.)

Description
This course fosters and develops students' ability to write, with a high degree of precision and detail, on a variety of academic topics. It also trains them to observe the well-defined rules of Arabic letter-writing. The course teaches the students to write extended research papers, reports and essays, performing various language functions beyond descriptions, comparisons etc., such as argumentation, hypothesizing, refutation etc. Students are trained to appraise samples of authentic written material and model their own written production on them, demonstrating a solid command of grammar (syntax and morphology), vocabulary use, spelling, cohesive devices and general stylistic norms of Arabic discourse.

When Offered
Offered in spring

AIAS 5301 - Egyptian Colloquial Arabic (3 cr.)

Description
This course further develops students' skill to communicate in Egyptian colloquial. It concentrates on complex vocabulary and syntax and enables students to communicate with native speakers in a wide range of situations with high level of accuracy and fluency. Special emphasis is placed upon educated Egyptian Arabic as well as appropriateness of speech, and cultural competency.

When Offered
Offered in fall.

AIAS 5411 - Advanced Egyptian Colloquial Arabic (3 cr.)

Description
This course further develops students' ability to communicate with native speakers in a wide

range of situations with a higher degree of accuracy, fluency, and cultural appropriateness. The course trains students to comprehend and discuss topics of general and personal interest. The materials used reflect the dynamics of Egyptian society and focus on educated Egyptian Arabic.

When Offered
Offered in Spring.

AIAS 5601 - CASA Students without Boarders (3 cr.)

Description
This course empowers students to engage in significant learning experiences, develop intercultural competence, work on superior level language proficiency skills, and establish social networks by engaging in the target language community through a project related to their academic and/or professional interests. Each student will design and complete a project related to their academic and/or professional interests that requires their engagment with the target language community. The project will span the fall and spring semesters. Each student will work with a supervising teacher with whom they will write a contract specifying the nature of their project. The project may include volunteer service in a local organization. Projects involving service to the community are highly encouraged.

When Offered
Offered in spring.

AIAS 5991 - Selected Topics in Arabic (3 cr.)

Description
Each course addresses a different topic of interest to advanced plus/superior Arabic language students. Topics covered are chosen by the students each semester. Some examples of topics include: Arab literature, politics in the Middle East, and religious studies.

When Offered
Offered in spring.

Chemistry

CHEM 1003 - Chemistry and Society (3 cr.)

Prerequisites
Not for credit for Science, Engineering and Computer Science Majors

Description
Not for credit for Science, Engineering and Computer Science majors. Introduction to basic chemical principles; examples of chemistry in context of daily life and impact on society : nutrition, polymers, colors and pigments, drug development, energy storage, environmental pollution and control, agro chemicals and other related issues

When Offered
Offered in fall and spring.
Notes
Not for credit for Science, Engineering and Computer Science majors

CHEM 1004 - Man and the Environment (3 cr.)

Description
Chemistry of the environment. Principles of ecosystem structures, energy flow and elements cycles. Natural resources, Population and Development. Renewable energy. Pollution control and prevention: air pollution, global warming, the depletion of the ozone layer and water pollution. Hazardous substances. Solid waste and recycling. Pests and pest control. Sustainability.

When Offered
Offered in fall, spring and occasionally in summer.
Notes
Not for credit for science, engineering and computer science majors.

CHEM 1005 - General Chemistry I (3 cr.)

Prerequisites
Thanawiya Amma Science or equivalent.

Description
Chemical stoichiometry; atomic structure and periodicity; an overview of chemical bonding with a discussion of models and theories of covalent bonding; introduction to structure and

chemistry of organic compounds.

When Offered
Offered in fall, spring and occasionally in summer and winter.

CHEM 1006 - General Chemistry II (3 cr.)

Prerequisites
CHEM 1005

Description
Gases; thermochemistry; liquids and solids, properties of solutions; introduction to chemical kinetics, chemical equilibria, environmental pollution.

When Offered
Offered in fall and spring.

CHEM 1013 - Chemistry of Life (1 cr.)

Concurrent
CHEM 1003
Description
Important properties related to compounds and chemicals present in commonly consumed foods, different tobacco products, water contaminants, and cosmetics are examined.

When Offered
Offered in fall and spring and occasionally in winter and summer.

CHEM 1015 - General Chemistry I-Laboratory (1 cr.)

Prerequisites
Thanawiya Amma Science or equivalent

Description
Selected experiments in inorganic and organic chemistry.

Hours
One three-hour lab period
When Offered
Offered in fall and spring and occasionally in summer and winter.

CHEM 1016 - General Chemistry II-Laboratory (1 cr.)

Prerequisites
CHEM 1015

Description
Semi-micro qualitative analysis of selected salts and mixtures.

Hours
One three-hour laboratory period.
When Offered
Offered in fall and spring.

CHEM 1930 - Selected Topic for Core Curriculum (3 cr.)

Description
Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

When Offered
Offered occasionally.

CHEM 2001 - Egypt Water Crisis: Challenges and Solutions (3 cr.)

Prerequisites
For science and non-science majors. Can't be counted as a core curriculum for Chemistry major students.

Description
Water scarcity may lead to conflicts between countries as they struggle to maintain sufficient water access for their populations. Dams on rivers are major threat for habitat since they

change the Earth's topography and underground river aquifers. Nowadays, political conflicts arise between countries that share the same water resources. Egypt, in particular, suffer from a major water threat as it shares the river Nile with nine other countries. Recently, sustainability of water resources in Egypt is challenged due to the construction of the Grand Ethiopian Renaissance Dam (GERD). This course discusses the impact of this dam on the environmental, ecological, economic and political aspects of the Egyptian lives. It also evaluates the relevant international treaties and water policies.

Core Curriculum: 2nd Level.

CHEM 2003 - Organic Chemistry I (3 cr.)

Prerequisites
CHEM 1005

Description
Aliphatic and aromatic hydrocarbons, stereochemistry and conformational analysis, ionic and free-radical substitution and addition reactions.

When Offered
Offered in fall.

CHEM 2004 - Chemistry, Art and Archaeology (3 cr.)

Description
Applications of chemical sciences in the investigation of celebrated cases in Art and Archaeology are discussed. Chemical methodologies are introduced on a need-to-know basis as related to the cases of fakes and forgeries studied.

When Offered
Offered in fall and spring.

CHEM 2006 - Analytical Chemistry I (2 cr.)

Prerequisites
CHEM 1006 and to be taken concurrently with CHEM 2016

Description
Ionic equilibria: solubility, activity and ionic strength. Gravimetry: nucleation and crystal growth, methodology, colloids. Acid-base, complexation, oxidation-reduction and precipitation equilibria and titrations. Introduction to separations in analytical chemistry.

When Offered
Offered in spring.

CHEM 2013 - Organic Chemistry I Laboratory (1 cr.)

Concurrent
CHEM 2003
Description
Characterization of organic compounds by classification tests.

When Offered
Offered in fall.

CHEM 2016 - Volumetric and Gravimetric Analysis (2 cr.)

Prerequisites
CHEM 1016 and concurrent with CHEM 2006

Description
Acid-base, oxidation-reduction, complexometric and precipitation titrations; gravimetric analysis; potentiometric titrations.

Hours
Two three-hour periods.
When Offered
Offered in spring.

CHEM 2020 - Introduction to Food Science and Technology (3 cr.)

Prerequisites
CHEM 1005 .

Description
An overview of the interdisciplinary nature of food science. The chemical and physical properties of foods. An overview of food regulation. Concepts and applications of food chemistry, food analysis, food processing, biotechnology, sensory evaluation, food packaging, food product development and food engineering. Global food situation with an emphasis on the Egyptian context.

CHEM 3002 - Archaeological Chemistry I (3 cr.)

Prerequisites
CHEM 1006 .

Description
Characterization of metals, minerals, pigments, glass, stone, dyes. Dating techniques: thermoluminescence, radiocarbon, amino-acid, Obsedian hydration and potassium/argon. Introduction to Mossbauer spectroscopy and neutron activation analysis.

When Offered
Offered occasionally.

CHEM 3003 - Thermodynamics (3 cr.)

Prerequisites
CHEM 1006 and MACT 1122

Concurrent
CHEM 3013

Description
Gas laws, state variables and equations of state, energy and the first law, thermochemistry; entropy and the second and third laws; spontaneity and equilibrium; physical transformation of pure substances, phase rule, phase equilibria.

When Offered
Offered in fall

CHEM 3004 - Physical Chemistry I (3 cr.)

Prerequisites
CHEM 2006,CHEM 3003, PHYS 1021.

Concurrent
Concurrent with CHEM 3014
Description
Chemical potential and equilibria, solutions and colligative properties, electrochemical systems.

When Offered
Offered in spring.

CHEM 3005 - Principles of Chemical Modeling (3 cr.)

Prerequisites
CHEM 3003 and CSCE 1001 .

Description
Introduction to computational chemistry techniques and their applications to chemical and biochemical areas; Principles of Density Functional Theory; Thermochemistry modeling in Chemistry; Generating and Analyzing a Molecular Dynamics Trajectory; Mass transport in material science; Basics of Monte Carlo Sampling Techniques; Binding Energies in Biochemistry; Combined QM/MM Simulation; Enzyme Reaction Mechanism.

CHEM 3006 - Organic Chemistry II (3 cr.)

Prerequisites
CHEM 2003

Description
Stereochemistry, aromaticity, electrophilic aromatic substitution; spectroscopy and structure;

SN1, SN2, E1, and E2 reactions.

When Offered
Offered in spring.

CHEM 3009 - Inorganic Chemistry I (3 cr.)

Prerequisites
CHEM 1006

Description
Basic principles of quantum mechanics as applied to hydrogenic and polyelectron atoms, atomic orbitals, electron-electron interactions, atomic parameters. Molecular orbital theory as applied to diatomic and polyatomic molecules and to solids, bond properties, molecular shape and symmetry, introduction to applications of molecular symmetry in chemistry. The structures of simple solids; acids & bases; oxidation-reduction. Overview of methods of molecular structure determination.

When Offered
Offered in fall.

CHEM 3011 - Analytical Chemistry II (3 cr.)

Prerequisites
CHEM 2006 and CHEM 2016.

Description
Instrumental methods of chemical analysis: visible, ultraviolet, and infrared absorption spectroscopy, atomic absorption and emission spectrometry, fluorimetry, X-ray diffraction and fluorescence; mass spectrometry, gas chromatography, thermometric and electrochemical methods.

Hours
Two class periods and one three-hour lab period.
When Offered
Offered in fall.

CHEM 3012 - Analytical Chemistry II Laboratory (2 cr.)

Prerequisites
CHEM 2006, CHEM 2016

Concurrent
CHEM 3011
Description
Analytical measurements using instrumental methods of chemical analysis such as visible, ultraviolet and infrared absorption spectroscopy; atomic absorption, and emission spectrometry; fluorimetry, X-ray diffraction, and fluorescence; mass spectrometry, gas chromatography, thermometric and electrochemical methods.

When Offered
Offered in spring.

CHEM 3013 - Thermodynamics Laboratory (1 cr.)

Prerequisites
CHEM 1006 ,CHEM 2016 and concurrent with CHEM 3003 .

Description
Experiments in physical chemistry, thermodynamics and error analyses.

When Offered
Offered in fall.

CHEM 3014 - Physical Chemistry I Laboratory (1 cr.)

Prerequisites
CHEM 3013 and concurrent with CHEM 3004 .

Description
Experiments in electrochemistry. One three-hour lab period.

When Offered
Offered in spring.

CHEM 3015 - Biochemistry (3 cr.)

Prerequisites
CHEM 2003

Description

The living cell, structure of biomolecules and their relationship to biological functions; biochemical energetics; metabolism of major cellular components and their relationship to clinical conditions.

Hours
Two class periods and one three hour lab period.
When Offered
Offered in fall.

CHEM 3016 - Organic Chemistry II Laboratory (1 cr.)

Prerequisites
CHEM 2013

Description
Systematic identification of organic compounds, analysis of mixtures (qualitative and quantitative).

When Offered
Offered in spring.

CHEM 3018 - Inorganic Chemistry Laboratory (1 cr.)

Concurrent
CHEM 3009
Description
Preparations, reactions, and characterization of some inorganic compounds; ion-exchange;

chromatography; measurements of stability constants.

When Offered
Offered in fall.

CHEM 3020 - Food Chemistry (3 cr.)

Prerequisites
CHEM 1005 .

Description
This course covers the chemistry of food constituents, the changes these constituents undergo during processing, the chemistry and technology of meat and meat products, dairy products, fruit and vegetables, cereal products and alcoholic/non-alcoholic beverages. It also covers the basic chemistry of color, odor and taste (sensory properties of foodstuffs).

CHEM 3522 - Production Basics for Chemical Industries (3 cr.)

Prerequisites
CHEM 1006 .

Description
An overview of planning scale-up from laboratory to pilot plant, to production plant, with a focus on models for determining profitability of new projects, new products and new processes. Selected topics from: process design, plant layout and flowsheets, material and energy balances, mass and heat transfer, reactor kinetics, chemical economics, process design strategies and waste management.

When Offered
Offered in fall.

CHEM 3523 - Chemistry of Petrochemical Processes (3 cr.)

Prerequisites
CHEM 3003

Description
Crude oil processing and production of basic, intermediate, and final petrochemicals; ethylene, propylene, butenes, benzene, toluene, xylene; non-hydrocarbon intermediates; higher paraffin-based chemicals; C4 olefins and diolefin-based chemicals; process technologies in petrochemical industries including thermal and catalytic cracking, reforming, dehydrogenation

When Offered
Offered in Spring

CHEM 3910 - Guided Studies in Environmental Sciences (3 cr.)

Description
Under faculty guidance, the student(s) will carry out a group individual project on an environmental related topic. The student(s) will present their results by submitting a common/individual report or by passing an examination, as determined by the supervisor.

Cross-listed
Same as BIOL 3910.
When Offered
Offered in fall and spring.

CHEM 3940 - Seminar in Science and Technology (1 cr.)

Prerequisites
Junior standing

Description
Weekly one-hour seminars in different areas of science and technology with emphasis on chemistry to be given by faculty and invited speakers from industries and other scientific communities.

When Offered
Offered occasionally

CHEM 4003 - Physical Chemistry II (3 cr.)

Prerequisites
CHEM 3004

Concurrent
Concurrent with CHEM 4013
Description
The kinetic theory of gases, chemical kinetics and dynamics, photochemistry, homogeneous and heterogeneous catalysis, surface chemistry including adsorption.

When Offered
Offered in fall.

CHEM 4004 - Physical Chemistry III (3 cr.)

Prerequisites
CHEM 3004, PHYS 2221

Description
Basic concepts and theory of quantum mechanics, applications to atomic and molecular spectroscopy; introduction to statistical thermodynamics.

When Offered
Offered in spring

CHEM 4005 - Industrial Chemistry (3 cr.)

Prerequisites
CHEM 3004, CHEM 3006, CHEM 3009, CHEM 3011, CHEM 3015

Description
Several aspects in a variety of chemical industries such as pharmaceutical, petrochemical, polymer, metal catalysis, surfactants, biotechnology, and inorganic chemical industries will be discussed.

When Offered
Offered in fall and spring.

CHEM 4006 - Organic Chemistry III (3 cr.)

Prerequisites
CHEM 3006

Description
A continuation of the chemistry of monofunctional and polyfunctional compounds, including the chemistry of carbanions, condensation reactions, nucleophiic addition and multistep syntheses.

When Offered
Offered in spring.

CHEM 4007 - Food Processing and Preservation (3 cr.)

Prerequisites
CHEM 1006 .

Description
An overview of fruit, vegetable, cereal, dairy, seafood and meat science and technology. The principles of food processes, including refrigeration, freezing, heat processing, dehydration, fermentation, high pressure, irradiation, pulsed electric field and packaging. Commercial preservation technologies used in the preservation of minimally processed and processed foods.

When Offered
Offered in fall.

CHEM 4008 - Inorganic Chemistry II (3 cr.)

Prerequisites
CHEM 3009

Description
Coordination chemistry, transition metals and their complexes, theories of metal-ligand bonding, complexes of pi-acceptor ligands and organometallic compounds, reaction

mechanisms of d-block complexes. Selected topics in nanochemistry, solid state chemistry, bioinorganic chemistry and/ or catalysis.

When Offered
Offered in spring.

CHEM 4013 - Physical Chemistry II Laboratory (1 cr.)

Prerequisites
CHEM 3014 and concurrent with CHEM 4003 .

Description
Experiments in physical chemistry emphasizing chemical kinetics.

Hours
One three-hour lab period.
When Offered
Offered in fall.

CHEM 4016 - Organic Syntheses (2 cr.)

Prerequisites
CHEM 3016 and CHEM 4006 .

Description
Organic Synthesis of compounds through one step or multistep, using different techniques for separation and purification. Several spectroscopic tools, (MS, IR, NMR & C^{13}) are used to confirm the structure of synthesized compounds.

When Offered
Offered in fall.

CHEM 4524 - Polymer Chemistry and Technology (3 cr.)

Prerequisites
(CHEM 3003 and CHEM 3522) or equivalent

Description
Mechanisms and kinetics of polymerization reactions of monomers; principles, limitations and advantages of various methods for molecular weight characterization; structure - physical properties relationship; specific catalysis for the control of polymeric stereo-specificity and morphology; polymer production and processing techniques

When Offered
Offered in Fall

CHEM 4900 - Chemistry Practical Internship (3 cr.)

Prerequisites
Senior Standing

Description
This is a summer-based chemistry practical internship where students will spend 12 consecutive weeks as full-time employees-in-training in approved entities within the chemistry-related fields. The course is available to students in any of the CHEM undergraduate concentrations.

When Offered
Offered in summer.

CHEM 4910 - Independent Study (1-3 cr.)

Prerequisites
Consent of instructor, senior standing.

Description
In exceptional circumstances some senior Chemistry students, with departmental approval, may arrange to study a selected topic outside of the regular course offerings. The student and faculty member will select a topic of mutual interest and the student will be guided in research and readings. The student would demonstrate achievement either by submitting a report or passing an examination, according to the decision of the supervisor.

Repeatable

May be taken more than once if content changes.

Notes

A student may earn up to a total of three credits.

CHEM 4930 - Selected Topics in Chemistry (1-3 cr.)

Prerequisites

Prerequisite: consent of instructor.

Description

Topics chosen according to special interests of faculty and students..

When Offered

Offered occasionally.

Repeatable

May be repeated for credit more than once if content changes

CHEM 4980 - Senior Thesis I (1 cr.)

Prerequisites

Senior standing.

Description

A capstone course. Each student selects a topic in his/her field of interest under the supervision of a faculty member. In this course, the student prepares an outline, assembles a bibliography, and develops a study plan under the supervision of the faculty advisor to be followed in preparing his/her project. The students are also expected to compose a theoretical background section that illustrates his/her knowledge of the range of equipment and techniques that will be used in obtaining and reporting the results of research. Each student is expected to deliver a seminar by the end of the semester that provides an overview of the research topic, anticipated outcomes and evaluation criteria.

When Offered

Offered in fall and spring.

Notes

May be substituted by a 4000-level course in chemistry or other sciences with the approval of the department.

CHEM 4981 - Senior Thesis II (2 cr.)

Prerequisites
CHEM 4980 .

Description
A capstone course. Students will embark in this course on performing the actual work on the project topics selected in CHEM 4980 . After completion of this research study, the students are expected to compose in accordance with the departmental guidelines, a full thesis and give an oral presentation of the main results achieved.

CHEM 5201 - Biochemistry (3 cr.)

Description
A basic course introducing the student to chemical bonds, structure of biomolecules, the structure and function of cellular components, protein structure and folding, carbohydrates metabolism, fatty acids oxidation, the kinetics of enzyme-catalyzed reactions, cellular metabolism, energy production, cellular regulatory processes, signal transduction cascades, and photosynthesis.

Cross-listed
Same as BIOT 5201.

CHEM 5203 - Advanced Organic Chemistry (3 cr.)

Description
This course discusses important organic classes, concepts, reactions and mechanisms not usually covered in depth in the undergraduate organic courses such as: heterocycles, photochemistry computational chemistry in modern organic chemistry and the art of planning multi-step syntheses.

CHEM 5204 - Methods of Structure Determination (3 cr.)

Description
Structure-properties relationships. Methods of structure determinations: diffraction methods, spectroscopic methods, resonance techniques, ionization-based techniques, magnetometry and other miscellaneous techniques. Case histories will be presented.

CHEM 5205 - Nanochemistry (3 cr.)

Description
This course introduces students to the basics of chemistry at the nanoscale, and would entail a general introduction to the nano world; physico-chemical considerations for properties at the nanoscale (band structures, typical and useful "nano effects" etc...); basic synthesis and fabrication methods for nano structures (top-down and bottom up approaches).

Cross-listed
NANO 5205

CHEM 5206 - Advanced Food Chemistry (3 cr.)

Description
Chemistry of food constituents, the changes these constituents undergo during processing, the chemistry and technology of meat and meat products, dairy products, fruit and vegetables, cereal products and alcoholic/non-alcoholic beverages, basic chemistry of color, odor and taste (sensory properties of foodstuffs).

CHEM 5211 - Applied Food Microbiology (3 cr.)

Description
This course consists of two lectures and one laboratory session per week. It is designed to train students on different aspects of food microbiology. It focuses on the biology and practical aspects of both pathogenic microorganisms and useful industrial bacteria associated with foodstuffs. The course also considers topics on food preservation regimes and laboratory methods for the detection of various food-born bacteria. Much emphasis is being placed on practical training via extensive laboratory classes planned in this course. This training involves practical work on both classical and modern methodologies in food microbiology.

CHEM 5212 - Food Safety Assurance (3 cr.)

Description

This course prepares students to participate in food safety monitoring and maintenance in various food industry and governmental health inspection sectors. The course encompasses topics on food-associated hazards and approaches to ensure food safety. In addition to lectures, the course will involve problem-based learning, class discussions and hands-on training on the application of food safety assurance systems. Multiple visits to modern safety units within food processing plants will be organized.

CHEM 5213 - Food Packaging (3 cr.)

Description

This course covers the principles of Food Packaging including the chemistry and technology of packaging materials (metal, glass, plastics, and paper/paperboard), It will also cover main packaging technologies (Modified Atmosphere Packaging, Aseptic Packaging, Active and Intelligent Packaging, etc.) and technical processes for the production of packaging materials (extrusion, co-extrusion, lamination, high vacuum metallization, etc.). It will stress the significance of the phenomena of migration and permeation in packaging materials and finally it will review the main applications of packaging to basic food commodities.

CHEM 5215 - Food Additives, Contaminants and Legislation (3 cr.)

Description

The course discusses the principles and various aspects of food additive utilization. It will train students on how to use analytical techniques to distinguish between "natural" and "artificial" additives.
Regulation and approval of additives for use in foods will be covered.

CHEM 5217 - Sensory Evaluation of Food Products (3 cr.)

Description

This course consists of two lectures and one laboratory session per week. It investigates the nutritional, chemical, physical, and sensory properties of foods in relation to preparation procedures. It will present sensory characteristics of foods and assessment of color, texture, and

flavor. The course will give the student the ability to apply sensory testing of foods, practice different types of sensory tests, and understand errors in sensory testing. It will assess the best environment for sensory testing and procedures of sensory testing, measurements and scales. Statistical analysis of sensory data such as discrimination tests, descriptive tests, hedonic tests, affective tests will also be discussed.

CHEM 5218 - Functional Foods and Nutraceuticals (3 cr.)

Description

Functional foods & nutraceuticals (FFN) and herbal products present some potential to improve the long-term health of the population through disease prevention. The move of FFN into the mainstream is part of the shift towards a preventative approach to health and disease and a move away from relying on pharmaceuticals to treat disease. This course introduces students to the FFN industry with its diversity of natural health products (NHP). Topics will cover classes of FFN and their connection to foods and drugs. Aspects of the development, production, quality control and assurance of FFN will be discussed. The safety and efficacy of individual FFN products are emphasized. Issues regarding the unique regulatory environment of natural heath products and their influence on the development and commercialization of these products in global markets will be presented.

CHEM 5219 - Food Analysis (3 cr.)

Description

This course is designed to introduce students to the theory and application of chemical, physical and instrumental methods of food analysis. Modern separation and instrumental analysis techniques that are used for detection of food constituents (e.g. moisture, ash, nitrogen, protein, lipid, carbohydrate, vitamins, minerals, etc) as well as contaminants (e.g. mycotoxins, pesticide residues, antimicrobial agents, heavy metals, etc) are stressed. Topics will include sample handling, preparation and analysis as well as the evaluation and reporting of data. Key analytical and separation techniques such as spectroscopy, titration, potentiometry, atomic absorption, chromatography and mass spectrometry will also be presented.

CHEM 5220 - Life Cycle Nutrition (3 cr.)

Description

Analysis & application of the physiological, biological and biochemical basis for differences in

nutritional requirements throughout the principle stages of the life cycle - pregnancy, infancy, childhood, adolescence, adulthood, older adulthood and the ways in which social & environmental factors influence nutritional status at each stage. This course provides an overview of nutrition during each life stage, commencing in utero, and continuing throughout the life cycle. It will discuss the biology of development, growth, maturation and aging and its impact on nutrition requirements, how to assess diet and nutrition status and how nutritional requirements can be achieved in the context of each major life stage.

CHEM 5221 - Nutrition & Diseases (3 cr.)

Description
The course provides the relationship between diet, nutrition and disease. The course will cover the methodology used to determine dietary, nutritional and body composition techniques and how evidence is gathered to determine the links between diet, nutrition and health. The relationship between diet and nutrition and the prevention and management of specific diseases and conditions such as cardiovascular disease, cancer, diabetes, obesity, gastrointestinal disorders and osteoporosis will be covered in depth. Main topics are: Malnutrition (obesity and undernutrition); metabolic syndrome; diabetes; cardiovascular diseases; food allergies, food intolerance, osteoporosis and cancer.

CHEM 5222 - Clinical Nutrition (3 cr.)

Prerequisites
CHEM 5201

Description
Clinical nutrition aims to provide a thorough grounding in all aspects of clinical nutrition and its application in prevention and disease management. This course reviews the array of assessment tools used in clinical nutrition practice including methodology, application, implications, strengths and limitations. During this course attention goes to various ways by which nutrition can be applied; oral nutrition and supplementations, tube feeding, parenteral nutrition. Students shall learn when to apply these different nutritional interventions and the pros and cons of the different feeding techniques.

CHEM 5241 - The Chemistry of Nanostructures (3 cr.)

Prerequisites
CHEM 5205

Description
This course addresses the synthesis and chemical properties of the different categories of nanostructures such as carbon NANOubes/nanorods/ etc..., fullerenes, colloids, Self-assembled monolayer structures (SAMs), dendrimers and other macromolecules, oxide and inorganic nanotubes/fibers/rods/etc. For each category examples of applications would be giving to demonstrate the applicability of the properties discussed.

Cross-listed
NANO 5241

CHEM 5242 - Nanoelectrochemistry (3 cr.)

Prerequisites
CHEM 5205

Description
This course addresses the fundamentals of electrochemistry, and their application to the synthesis of nanostructures, together with applications (e.g. sensors, fuel cells, batteries, electrolysis, photovoltaic cells, reduction of carbon dioxide, environmental remediation, water disinfection, ect...). Characterization and analysis techniques would also be addressed.

Cross-listed
NANO 5242

CHEM 5423 - Electrochemical Techniques: Fundamentals and Applications (3 cr.)

Description
The fundamentals of electrode reactions and electrochemical techniques with their applications including environmental monitoring, industrial quality control, and biomedical analysis will be discussed. Electrochemical methods including potential step/sweep/pulse, controlled current, hydrodynamic (forced convection), electrochemical quartz crystal microbalance (EQCMB), and

electrochemical impedance (A.C. techniques) will be covered.

When Offered
Offered in spring.

CHEM 5910 - Independent Study in Chemistry (3 cr.)

Prerequisites
Consent of instructor.

Description
Independent study in various problem areas of biotechnology may be assigned to individual students or to groups. Readings are assigned and frequent consultation held. Students may sign for up to 3 credits towards fulfilling M.Sc. requirements.

CHEM 5930 - Selected Topics in Chemistry (3 cr.)

Prerequisites
Consent of instructor

Description
Topics include: polymer science, quantum chemistry and spectroscopy, and molecular symmetry and applications.

CHEM 5980 - Research Guidance and Thesis (3 cr.)

Prerequisites
SCI 5940

Description
Consultation on problems related to the student's thesis.

Notes
Must be taken twice, for a total of 6 credits.

CHEM 6103 - Bioseparation Processes for Food and Pharmaceutical Industries (3 cr.)

Prerequisites
Consent of instructor.

Description
This course deals with the separation processes used in food and pharmaceutical industries for the isolation and purification of biological molecules. The focus is on the science and engineering concepts underlying the separation, as well as the process calculations associated with each bioseparation unit operation. Key topics include principles and design calculations of centrifugation and cell disruption, extraction phase separations and equipment design, absorption equilibrium and column dynamics, chromatography plate theory, chromatography equipment and methods, dynamic scale-up, electric-field based methods, engineering analysis of membrane processes, membrane concentration polarization and fouling, modeling of filtration processes, crystallization and drying operations, and overall process development.

When Offered
Offered in fall and spring.

CHEM 6105 - Principles and Applications of Mass Spectrometry (3 cr.)

Prerequisites
CHEM 5204 or consent of instructor.

Description
This course addresses the theory of mass spectrometry and develops the technique as a modern analytical tool to solving research problems in chemistry and biochemistry. It also addresses gas-phase ion chemistry. The course will be delivered in three sections: instrumentation, theory and applications. Topics will include ionization techniques, mass separation techniques and mass analyzers, ion dissociation, ion mobility, in addition it will include sophisticated experimental methods, such as tandem in space and tandem in time mass spectrometry. Mass spectral interpretation will also be covered for various applications, including environmental, food chemistry and medical sciences.

CHEM 6107 - Chemistry of Natural and Synthetic Polymers (3 cr.)

Prerequisites

Description
Synthesis and characterization of natural and synthetic polymers, their applications in drug delivery systems, food and goods storage and packaging, polymer nanocomposites, polymeric membranes.

CHEM 6240 - Nanoporous Materials (3 cr.)

Prerequisites
NANO 5205

Description
Review of the field of nanoprous materials. Synthesis, characterization and surface modification. Adsorption and separation processes, biological and catalytic applications. Nanoporous materials for the removal of pollutants in the gaseous and liquid phases.

CHEM 6910 - Independent Study in Chemistry (3 cr. max.)

Description
Independent study in various problem areas of Chemistry may be assigned to individual students or to groups. Readings assigned and frequent consultations held.

CHEM 6930 - Advanced Selected Topics in Chemistry (3 cr.)

Description
Topics chosen according to special interests of faculty and students. May be repeated for credit more than once if content changes.

CHEM 6980 - Research Guidance Dissertation (3 cr.)

Description
Consultation on problems related to student thesis. To be taken 11 times for credit.

Comparative Religion

CREL 2096 - Selected Topics for the Core Curriculum in Global Studies (3 cr.)

Prerequisites
RHET 1010

Description
Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

When Offered
Offered occasionally.

CREL 2097 - Selected Topics for the Core Curriculum in Arab World Studies (3 cr.)

Prerequisites
RHET 1010

Description
Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

When Offered
Offered occasionally.

CREL 2099 - Selected Topics for Core Curriculum (3 cr.)

Prerequisites
RHET 1010

Description
Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

When Offered
Offered occasionally.

CREL 2603 - Religions of the World (3 cr.)

Description
An introduction to the academic study of religion. By looking at the history, beliefs, practices, institutions and cultural expressions of a number of different religions, students will broaden their understanding of religions other than their own, and of the diversity of the human religious experience. Students will learn to appreciate the variety of the religions of the world, and the similarities and differences between them.

CREL 2605 - The Quest for the Historical Jesus (3 cr.)

Description
Investigates the life and teachings of Jesus of Nazareth within the context of Second Temple Judaism and Greco-Roman culture. Considers a range of pre-modern and modern interpretations of Jesus and the emergence of Christianity.

When Offered
Offered occasionally

CREL 3216 - Shi'i Muslims in History (3 cr.)

Description
This course focuses on the historical roles of Shi'i Muslims from the seventh century to the present. The aim of the course is to familiarize the student with the major Shi'i discourses as they evolved in specific historical contexts. While emphasis will be on the historical development of Twelver Shi'ism, other important groups such as the Ismai'liyya and the Zaydiyya will also receive due consideration.

Cross-listed
same as ARIC 3337

CREL 4000 - The Bible and Ancient Texts (3 cr.)

Description
This course introduces students to the Hebrew Bible (or Old Testament) by examining it within its historical and literary context in the Ancient Near East. Students gain experience in comparative methods by reading and interpreting ancient texts from Mesopotamia, the Levant, and Egypt in parallel with biblical texts.

CREL 4001 - Three Faiths, One Father (3 cr.)

Description
The Abrahamic faiths (Judaism, Christianity, and Islam) share a common heritage of ancestral stories focused on the figure of Abraham. Yet while all three faith communities consider themselves "Children of Abraham," their narratives about Abraham and his family vary, and the interpretation of these ancestral stories births a wide spectrum of ideological commitments. This course is an in-depth study of scriptural texts from the three Abrahamic faiths that relate to Abraham and his immediate descendants (through Joseph).

CREL 5609 - World Religions and the Study of Religion (3 cr.)

Prerequisites
Prerequisite: Enrollment in the Islamic Studies MA program.

Description
This course will introduce students to the great world religions other than Islam, and will introduce them to current theories and methods in the academic field of Religious Studies.

Cross-listed
Same as ARIC 5245.

Computer Science and Engineering

CSCE 1000 - Introduction to Computers and Their Applications (3 cr.)

Description

Introduction to programming and data analysis, with a strong focus on problem-solving and computational thinking. Data-centric programming projects, basic literacy in AI and cybersecurity. Practical, engaging applications of computing across disciplines, enabling students to make informed and ethical use of technology in their fields.

When Offered
Offered in fall and spring.
Notes
This course is intended for all non-CSCE students.

CSCE 1001 - Fundamentals of Computing I (3 cr.)

Prerequisites
College level preparation course in Mathematics or MACT 1111 .

Description
Introduces fundamental concepts and principles of computing systems, grand challenges in computing, analyzing and formulating solutions to multidisciplinary problems, basic algorithms for solving problems, as well as designing, implementing, and testing programs using one prime language and other supplementary languages. Using data and procedural abstractions as basic design principles, students learn how to design and implement basic data structures such as stacks and queues, and to apply various algorithms for operating on them. Also covers some numbering systems, data representation, and basic computer organization. The course uses the imperative and object-oriented paradigms.

When Offered
Offered in fall and spring.

CSCE 1101 - Fundamentals of Computing II (3 cr.)

Prerequisites
CSCE 1001 and concurrent with CSCE 1102

Description

Introduces concepts and techniques for developing larger software systems. The object-oriented paradigm is further utilized using a modern programming language such as Java or C++. Covers

topics that include classes and objects, inheritance, encapsulation, polymorphism, more algorithms, basic design patterns, generics, testing. Also covers the design and implementation of data structures including but not limited to lists, trees, and graphs.

When Offered
Offered in fall and spring.

CSCE 1102 - Fundamentals of Computing II Lab (1 cr.)

Prerequisites
Concurrent with CSCE 1101

Description
The laboratory will contribute to the capacity building and practice of knowledge units covered in CSCE 1101 (Fundamentals of Computing II).

CSCE 2200 - Applied Data Structures (3 cr.)

Prerequisites
CSCE 1101

Description

In depth coverage of applied data structures needed by computing professionals. Includes but not limited to: Abstract data types and classes, analysis of algorithms, trees, binary search trees, dictionaries, self-balancing trees, B-Trees, red black trees, heaps, priority queues, sets, and graphs. Practical usage of the data structures is covered.

When Offered
Offered in fall and spring.

CSCE 2202 - Analysis and Design of Algorithms (3 cr.)

Prerequisites
MACT 2131 (or concurrent) and CSCE 2200

Concurrent

CSCE 2203

Description

Analysis and complexity bounds of basic classes of algorithms. Basic algorithm design methodologies: Brute force, Transform and Conquer, Divide and conquer, and Greedy methods. Dynamic Programming, Backtracking and Branch and Bound methods. Applications to problems such as sorting and searching, traveling salesperson, knapsack, optimal merge patterns and graph algorithms. Introduction to the theory of complexity.

When Offered

Offered in fall and spring.

CSCE 2203 - Analysis and Design of Algorithms Lab (1 cr.)

Prerequisites

MACT 2131 or concurrent, and concurrent with CSCE 2202

Description

The laboratory will contribute to the capacity building and practice of knowledge units covered in CSCE 2202 (Analysis and Design of Algorithms).

CSCE 2301 - Digital Design I (3 cr.)

Prerequisites

PHYS 1021

Concurrent

Must be taken concurrently with CSCE 2302.

Description

Digital and analog signals, the MOSFET as a switch, basic logic gates, Boolean algebra, logic minimization algorithms, modular design of combinational circuits, introduction to computer arithmetic, memory elements, sequential circuits, Finite State Machines analysis and design, top-down digital systems design approach, timing aspects of digital systems. Exposure to modern Electronic Design Automation tools, Hardware Description Languages and programmable logic devices. The laboratory component will cover experiments in digital logic.

When Offered

Offered in fall and spring.

CSCE 2302 - Digital Design I Lab (1 cr.)

Prerequisites

Concurrent with CSCE 2301 .

Description

The laboratory will cover experiments in digital design and experiments illustrating material of course CSCE 2301 .

When Offered

Offered in fall and spring.

CSCE 2303 - Computer Organization and Assembly Language Programming (3 cr.)

Prerequisites

CSCE 1101

Concurrent

CSCE 2301 or ECNG 2101

Description

Instruction set architecture, computer performance (affecting factors and metrics), computer arithmetics (integers and floating-point numbers), assembly programming and the corresponding machine code (RISC and CISC architectures), the instruction cycle, the interrupt cycle, the memory hierarchy, and caching.

When Offered

Offered in fall and spring.

CSCE 2501 - Fundamentals of Database Systems (3 cr.)

Prerequisites

CSCE 1101 or DSCI 2410

Description
Basic concepts, database system environment, DBMS. Components and architecture access structures, indexing and hashing, high-level data models, ER, the relational model, relational languages, relational algebra, relational calculus, SQL, functional dependencies and normalization, database security, query evaluation and optimization techniques, distributed database systems architecture and an introduction to NOSQL Databases.

When Offered
Offered in Fall and Spring.

CSCE 3101 - Programming Language (1-3 cr.)

Prerequisites
CSCE 1001

Description
A programming language different from those studied in CSCE 1001 and CSCE 1101 will be presented according to the interest of both students and faculty.

When Offered
Offered occasionally.
Repeatable
Students may repeat this course with different languages but only a maximum of four credits can be counted toward the concentration requirements.

CSCE 3102 - Programming in Java (3 cr.)

Prerequisites
CSCE 1101

Description
This course offers intermediate programming concepts in the Java programming language to include virtual machines, dynamic type checking, object serialization, inheritance and polymorphism, file manipulation, interfaces and packages. Java Applets, event handling, multithreading and network-based application development in Java are also covered along with a set of selected topics such as remote method invocation and remote database access using the language.

When Offered
Offered occasionally.

CSCE 3103 - Object Oriented Programming (3 cr.)

Prerequisites
CSCE 1101

Description
In-depth study of a typical object-oriented programming language (C++) from a software engineering perspective, with emphasis on features supporting the development of large, efficient and reusable object-oriented applications. Principles and practice of three software development paradigms: developing classes from scratch, reuse of existing classes, incremental extension of frameworks. Encapsulation, templates, polymorphism, dynamic binding and virtual methods, operator's overloading, complex associations, dynamic aggregation, inheritance (single and multiple), exception handling, the standard template library. Introduction to UML for describing program designs.

When Offered
Offered Occasionally.

CSCE 3104 - Concepts of Programming Languages (3 cr.)

Prerequisites
CSCE 1101

Description
Comparative study of abstraction, syntax, semantics, binding times, data and sequence control, run-time resources, translators, and storage of programming languages. Programming projects using selected programming languages to enhance practical aspects.

When Offered
Offered in fall and spring.

CSCE 3301 - Computer Architecture (3 cr.)

Prerequisites
(CSCE 2301 or ECNG 2101) and CSCE 2303

Concurrent
CSCE 3302
Description
Instruction set architectures design, CPU microarchitectures including datapath and control unit design, register transfer language, single-cycle implementation, pipelining, hazards, branch prediction, I/O systems and busses, Instruction-level parallelism, static and dynamic multiple-issue architectures, dynamic scheduling, speculation, SIMD and vector architectures, synchronization, virtual memory, and cache coherence.

Cross-listed
Same as ECNG 4505
When Offered
Offered in fall and spring.

CSCE 3302 - Computer Architecture Lab (1 cr.)

Prerequisites
Prerequisite: Concurrent with CSCE 3301

Description
The laboratory will cover experiments in computer architecture and hardware design and experiments illustrating material of course CSCE 3301 .

Cross-listed
Same as ECNG 4508L
When Offered
Offered in fall and spring.

CSCE 3303 - Fundamental Microelectronics (3 cr.)

Prerequisites
PHYS 2211 and CSCE 2301 or concurrent

Description
The course covers topics related to electronic devices and their applications such as diodes, transistors (BJT and MOSFET), and operational amplifiers with an emphasis on digital CMOS circuits design, simulation and analysis.

When Offered
Offered in fall and spring.

CSCE 3304 - Digital Design II (3 cr.)

Prerequisites
CSCE 3301 and CSCE 3303

Description
VLSI fabrication, Design of complex CMOS cells, Combinational and Sequential logic structures in VLSI; Introduction of ASIC design techniques and tools; design and programming of FPGAs using CAD tools; timing in sequential circuits; Digital systems design; Modeling and simulation; Fault models and testing.

When Offered
Offered in fall and spring.

CSCE 3311 - Data and Computer Communications (3 cr.)

Prerequisites
CSCE 1101 and PHYS 2211

Description
Overview the network protocol stack and TCP/IP. Data transmission technologies, transmission impairments and channel capacity. Basics of wired and wireless transmission media. Signal encoding techniques. Introduction to error detection and correction. LAN fundamentals, Ethernet LANs, WLANs and MAC protocols. Cellular networks fundamental concepts and evolution from 1G to 5G networks.

When Offered
Offered in fall and spring.

CSCE 3312 - Computer Networks (3 cr.)

Prerequisites
CSCE 1101 and (MACT 3211 or MACT 3224)

Concurrent
CSCE 3313 for Computer Engineering students.
Description

Covers the fundamentals of computer networking. Topics include Introduction to computer networks, historical perspective and types, switching techniques, the concept of layering, network performance metrics, data link layer, network layer, IP networking and addressing, and the transport layer.

When Offered
Offered in fall and spring.

CSCE 3313 - Computer Networks Lab (1 cr.)

Prerequisites
Concurrent with CSCE 3312.

Description
Offers hands-on experience in the area of computer networks. This includes basic network components, equipment, and experiments on network monitoring and virtualization tools, link layer, network layer, transport layer and application layer protocols, along with well-known static and dynamic routing protocols, in use in the Internet today.

When Offered
Offered in the Fall and Spring.

CSCE 3401 - Operating Systems (3 cr.)

Prerequisites
CSCE 2200 and CSCE 3301

Description
Operating systems concepts and structure. The Kernel, interrupts, system calls. Process concepts, operations, and implementation. Threads. Concurrency, interprocess communication and synchronization. Process scheduling. Resources and deadlocks. Memory management: swapping, paging, segmentation, virtual memory. File system interface, protection. Case studies: Windows, Linux, and MINIX.

When Offered
Offered in fall and spring.

CSCE 3421 - Fundamentals of Computing and Communication Systems (3 cr.)

Prerequisites
CSCE 1001

Description
This course exposes attendees in breadth to the most viable systems relating to Information Technology, and their associated administration. This includes networking fundamentals and related management, operating systems, computer organization and architecture, hardware, firmware, and enterprise applications.

When Offered
Offered in fall.
Notes
This course is not available for either Computer Science or Computer Engineering students.

CSCE 3422 - Introduction to Information Security (3 cr.)

Prerequisites
CSCE 1101 .

Description
This course introduces foundations of information security. It addresses cyber-security issues and common threats, basics of network security, general security principles and practices, basics of cryptology and cryptanalysis, information security management, and other selected topics.
Not allowed for Computer Science or Computer Engineering students.

When Offered
Offered in spring.

CSCE 3423 - Introduction to Cybersecurity (3 cr.)

Concurrent
CSCE 3401
Description

Secure Network Architecture and Components, Network Attacks, Router Hardening, Secure Communications, Secure Campus Network, Significance of security protocols and frameworks, Security Governance Through Principles and Policies, Personnel Security and Risk Management Concepts, Business Continuity Planning, Laws, Regulations, and Compliance, Protecting Security of Assets, Cryptography and Symmetric Key Algorithms, PKI and Cryptographic Applications, Principles of Security Models, Design, and Capabilities; Security Vulnerabilities, Threats, and Countermeasures, Controlling and Monitoring Access, Security Assessment and Testing, Preventing and Responding to Incidents, Disaster Recovery Planning.

When Offered
Offered in fall.

CSCE 3601 - Fundamentals of Artificial Intelligence (3 cr.)

Prerequisites
CSCE 1101 or DSCI 2410

Description
The course will introduce students to the main foundational concepts and techniques used in Artificial Intelligence including searching and problem solving methods, representing knowledge, dealing with uncertainty, probabilistic reasoning, planning, learning decision rules from data, and statistical learning.

When Offered
Offered in fall.

CSCE 3602 - Fundamentals of Machine Learning (3 cr.)

Prerequisites
(DSCI 2410 or CSCE 1101) and (MACT 3223 or MACT 3224)

Description
Data Preparation and Preprocessing, Feature Extraction and Engineering, Supervised Learning Methods including Probabilistic Classifiers (Naive Bayes and Bayesian Networks), Rule-based Methods (Decision Trees and Random Forests), Instance Based Learning (KNNs), Support Vector Machines, and Introduction to Neural Networks, Unsupervised Learning Methods including k-means Clustering, MLE, Expectation Maximization, and Affinity Propagation.

Cross-listed
same as DSCI 3415
When Offered
Offered once a year.

CSCE 3611 - Digital Signal Processing (3 cr.)

Prerequisites
PHYS 2211 and junior standing.

Description
Characterizations of signals, ADC and DAC, Fourier series and Fourier transform for discrete and continuous time signals, sampling, Digital spectrum analysis, discrete transforms, digital filters, audio and image processing applications.

When Offered
Offered in fall and spring.

CSCE 3701 - Software Engineering (3 cr.)

Prerequisites
CSCE 2202 and CSCE 2501.

Description

Basic concepts of software engineering project management, ethical and social issues as well as the software development life cycle. Techniques for software specification, design, implementation, validation, verification and documentation. State-of-the art tools for computer-aided software engineering (CASE tools) are used to support term projects.

When Offered
Offered in fall and spring.

CSCE 4101 - Compiler Design (3 cr.)

Prerequisites
CSCE 3104 .

Description
Principles and practices in the design of compilers. Lexical analysis. Syntax analysis, top-down and bottom-up parsing. Syntax-directed translation and syntax trees. Declarations, types, and symbol management. Run-time environments, storage organization, parameter passing, dynamic storage allocation. Intermediate languages and intermediate code generation. Code generation and optimization.

When Offered
Offered in spring.
Notes
Project: students construct a simple compiler that generates unoptimized code.

CSCE 4201 - Theory of Computing (3 cr.)

Prerequisites
MACT 2131 and Senior standing.

Description
Finite automata and regular expressions, context-free grammars and push-down automata, nondeterminism. Context-sensitive grammars and the Chomsky hierarchy of grammars. Turing machine and the halting problem. Undecidable problems. Church's Conjecture and its implications.

When Offered
Offered in fall.

CSCE 4202 - Applied Quantum Computing (3 cr.)

Prerequisites
MACT 2132 and MACT 3224 or MACT 3211

Description

Concepts of quantum computing, programming quantum computers, quantum algorithms, quantum computing complexity theory, applications to cryptography, applications to machine learning, quantum communication, quantum error correction, and applications in other domains.

When Offered
Offered in fall and spring.

CSCE 4301 - Embedded Systems (3 cr.)

Prerequisites
CSCE 3401 or concurrent

Concurrent
CSCE 4302
Description

Hands-on study of low-power embedded systems with real-time constraints. Students design embedded hardware and software; interface sensors and actuators for interactive applications; communicate over common embedded buses; and develop RTOS-based applications. Emphasis on power-aware design, timing analysis, and debugging.

When Offered
Offered in fall and spring.

CSCE 4302 - Embedded Systems Lab (1 cr.)

Prerequisites

Concurrent with CSCE 4301

Description
The laboratory will cover experiments in embedded systems illustrating material of course CSCE 4301 .

When Offered
Offered in fall and spring.

CSCE 4303 - Embedded Systems on Chip Design (3 cr.)

Prerequisites
CSCE 3304 and CSCE 4301

Concurrent
CSCE 4301
Description
Systems-on-Chip (SoCs) are at the core of most embedded computing and consumer devices nowadays. The course gives Hands-on coverage of the breadth of computer engineering within the context of SoCs, including on-chip memories and buses, I/O interfacing, RTL design of accelerators, firmware development and OS support. The course emphasizes hardware/software tradeoffs, and hardware/software codesign.

When Offered
Offered in fall.

CSCE 4315 - Internet of Things Networking Protocols (3 cr.)

Prerequisites
CSCE 2202

Description
Covers introduction to networking fundamentals, Internet of Things (IoT) performance metrics, energy-efficient networking, IoT link layer protocols, e.g., IEEE 802.11, Bluetooth, Bluetooth Low Energy (BLE) and IEEE 802.15.4, IoT network layer protocols, e.g., 6LoWPAN and Routing Protocol for Low Power and Lossy Networks (RPL), transport and application layer protocols, e.g., Constrained Application Protocol (CoAP) and Message Queue Telemetry Transport (MQTT).

When Offered
Offered in fall and spring.

CSCE 4411 - Fundamentals of Distributed Systems (3 cr.)

Prerequisites
CSCE 3401

Description
Introduction to distributed systems. Modeling, specifications, consistency, fault tolerance, interprocess communication, network and distributed operating systems, distributed mutual exclusion, distributed deadlock detection, load balancing and process migration.

When Offered
Offered in fall.

CSCE 4421 - Network Security (3 cr.)

Prerequisites
CSCE 3423

Description

Fundamentals of Network Security. Introduction to symmetric and public key cryptography. Analysis of network attacks such as DNS cache poisoning, malware, and DOS. Network defensive tools such as firewalls, intrusion detection systems, and endpoint detection systems. Practical implementation of network attacks. Practical configuration of defensive mechanisms.

When Offered
Offered in spring.

CSCE 4423 - Digital Forensics (3 cr.)

Prerequisites
CSCE 3301

Description

The Scope of Computer Forensics, Windows Operating and File Systems, Handling computer Hardware, Acquiring Evidence in a Computer Forensics Lab, Online Investigations,Documenting the Investigation, Admissibility of Digital Evidence, Network Forensics, Mobile Forensics, Photograph Forensics, Video Forensics, Vehicle Forensics, Mac Forensics, Case Studies.

When Offered

Offered in spring.

CSCE 4424 - Web Security (3 cr.)

Prerequisites

CSCE 2501

Description

Fundamentals of the security of web applications. Server-side vulnerabilities such as SQL injections, Server-side request forgery, path traversal, and command injection. Client-side vulnerabilities such as cross-site scripting, cross-site request forgery, and race conditions. Defensive mechanisms such as web application filters, content security policy, and secure coding techniques. Practical implementation of penetration testing tasks and report writing.

When Offered

Offered in fall.

CSCE 4501 - Big Data Systems (3 cr.)

Prerequisites

CSCE 2501

Description

Data Cluster architectures, scheduling and resource management, big data stacks such as Hadoop, HDFS and Spark, big data processing techniques such as MapReduce, and an introduction to big data analytics.

When Offered
Offered occasionally.

CSCE 4502 - Design of Web-based Systems (3 cr.)

Prerequisites
CSCE 2501 or MOIS 3201*

*for MICT students only

Description
Introduction to the Web as a platform, the Web as an n-tier client-server architecture, basic components of a web-based application, developing static and dynamic web pages. Enhancing Web pages using Scripting languages. Developing Web-based applications. Using Server-extension techniques and tools. Introduction to XML and its associated technologies. Emerging technologies and tools on the web. Wireless Web protocols and techniques.

When Offered
Offered in fall

CSCE 4602 - Introduction to Artificial Neural Networks (3 cr.)

Prerequisites
(CSCE 3602 or DSCI 3415) and MACT 2132

Description
An introduction to basic concepts in the design, analysis, and application for computational neural networks. Mathematical models of biological neurons. Multilayer perceptrons backward error propagation. Hopfield networks and Boltzmann machines. Radial-basis function networks. Kohonen self-organizing feature maps. Adaptive Resonance Theory networks.

When Offered
Offered Occasionally.

CSCE 4603 - Fundamentals of Computer Vision (3 cr.)

Prerequisites

CSCE 1101 or DSCI 2410

Description
Image acquisition, image transformations, gray level operations, histogram equalization, spatial filtering, edge detection, line and circle detection, generalized Hough transform, connected components labeling. Haar features, object detection with Adaboost, applications: face detection, open CV programming.

CSCE 4604 - Advanced Machine Learning (3 cr.)

Prerequisites
CSCE 3602 or DSCI 3415

Description
Supervised and Unsupervised learning, Logistic and soft-max regression, Perception and multilayer neural networks, Back-propagation, Convolutional Neural Network (CNN), Recurrent Neural Network, Generative models, Reinforcement Learning, case studies.

CSCE 4605 - Fundamentals of Data Mining (3 cr.)

Prerequisites
DSCI 3415 or CSCE 3602

Description
Introduction to the fundamental concepts of data mining, motivation for and applications of data mining, text and web mining, and survey of techniques and models. Topics include: data pre-processing, frequent pattern mining, clustering, classification, and case studies using data sets taken from real-life applications, and use of data mining software.

Cross-listed
same as DSCI 4411

CSCE 4702 - Secure Systems Engineering (3 cr.)

Prerequisites
CSCE 3701 and CSCE 3401

Description
This course introduces the main security problems found in contemporary systems and addresses how such problems are introduced and how we may work towards their eradication. The course enables students to treat security issues as an important and integral part of system design and development. It also provides them with a solid understanding of the basic ideas and techniques used in assessing and addressing security risks.

When Offered
Offered in fall and spring.

CSCE 4800 - The Data Science Studio: Industry Cases and Research (3 cr.)

Prerequisites
Consent of the Instructor.

Description

Applied, case-based data science studio. Weekly cases (industry or simulated). End-to-end analytics workflow under under realistic constraints. Data-driven optimization and algorithms. Rotating contemporary themes in applied ML and AI. Grounded work through parallel research tasks. Presentation and executive communication. Collaboration with external partners.

CSCE 4910 - Guided Studies in Computer Science and Engineering (1-3 cr.)

Prerequisites
Prerequisite: consent of instructor.

Description
Under the guidance of a faculty member, the student carries on a reading, research, or a project on a specific computer-science topic. The student will present his/her results by submitting a report or passing an examination as determined by the supervisor.

When Offered
Offered in fall and spring.

CSCE 4930 - Selected Topics in Computer Science and Engineering (1-3 cr.)

Prerequisites
Junior standing or higher.

Description
Topics chosen according to special interests of faculty and major students. May be repeated for credit more than once if content changes.

When Offered
Offered in fall and spring.

CSCE 4950 - Industrial Training (1 cr.)

Prerequisites
Junior standing and approval of instructor.

Description
Each student is required to spend a minimum of eight weeks in training related to the computing domain in Egypt or abroad. Students need to follow guidelines published by the department. Evidence, including references are provided demonstrating the nature and duration of training. A report followed by discussion is submitted to a departmental committee for evaluation.

When Offered
Offered in fall and spring.
Notes
Graded pass or fail

CSCE 4980 - Senior Project I (1 cr.)

Prerequisites
Instructor approval

Description
Participating students select project topic according to their subject of interest and the availability of facilities and advisers. Students carry out necessary preliminary work, which

involves initial design space exploration, and submit a progress report. Ethical responsibilities of a computing professional are covered by lectures and seminars and emphasized through the student's teamwork.

When Offered
Offered in fall and spring.

CSCE 4981 - Senior Project II (2 cr.)

Prerequisites
CSCE 4980

Description
Participating students carry on the plan of work they developed in CSCE 4980 . Students use all of their acquired knowledge toward the design, implementation, testing, and documentation of a product. Each participant gives an oral presentation of his/her results. On the approval of the supervisor, each group prepares and presents a complete package. Further ethical issues of the computing profession are covered and emphasized all over the course work.

When Offered
Offered in fall and spring.

CSCE 5221 - Algorithms and Complexity Theory (3 cr.)

Description

Correctness proofs of algorithms, graph algorithms and shortest path properties, optimization problems and intractability, NPC reductions, introduction to approximation algorithms and data-driven heuristics.

When Offered
Offered in Spring.

CSCE 5222 - Data-Driven Algorithms (3 cr.)

Prerequisites
Consent of the instructor.

Description

Algorithms-data integration, worst-case performance guarantees, optimization models, approximation algorithms, online algorithms, learning-augmented algorithms and decision-focused machine learning. Simulation design and empirical evaluation of decision policies.

CSCE 5231 - Advanced Processor Architecture (3 cr.)

Prerequisites
CSCE 3301

Description
Advanced topics in modern microprocessor microarchitecture especially as they relate to systems and applications software. Modern "core" CPU design: Instruction Level Parallelism, (ILP: Instruction Level Parallelism via software), Dynamic Instruction Level Parallelism by hardware (Dynamic scheduling, Superscaling, Reservation stations, Instruction Reordering buffers, Speculative instruction execution, Out-of-order instruction execution and retirement), Static and Dynamic Branch prediction techniques & VLIW technology. CMP (Chip Multiprocessing), Chip multithreading design and applications. Basics of parallel software design issues and how they interact with the architecture. All topics are illustrated by state of the art Microprocessors.

CSCE 5232 - Advanced Network Modelling (3 cr.)

Description
Review of stochastic processes and introduction to Markov chains. Analysis of basic queuing systems, e.g., M|M|1, M|M|m and M|M|m|m. Modeling and analysis of random access MAC schemes, e.g., Aloha and Slotted Aloha and example protocols, e.g., CSMA, CSMA/CA. Multicast routing and MANET routing protocols, e.g., OLSR and AODV. Fundamentals and algorithms of TCP congestion control, max-min fairness and queuing disciplines. Advanced topics in 5G networks, SDN and the Internet of Things (IoT) MAC and networking protocols.

CSCE 5241 - Distributed Systems (3 cr.)

Description
Models of concurrency, specifications of distributed systems, consistent global states, fault

tolerance and related problems, interprocess communication, distributed file systems, replication mechanisms, distributed operating systems, real-time distributed systems, transputers, and case studies of distributed systems.

CSCE 5242 - Parallel Computer Architecture (3 cr.)

Prerequisites
CSCE 5231

Description
Analysis and design of high-performance computer systems, pipelining techniques, cache design, instruction level parallelism, parallel and vector architectures, shared memory multiprocessors, message passing multicomputers, data flow architectures, scalability and performance, software for parallelism.

CSCE 5243 - Information and System Security (3 cr.)

Prerequisites
CSCE 5241
(or concurrent)

Description
This course addresses relevant issue and case studies in modern information and system security. The objective is to provide students with solid understanding and working knowledge of modern information security challenges, solutions, and research directions.

CSCE 5245 - Embedded Real-Time Systems (3 cr.)

Prerequisites
Consent of instructor

Description
Covers both practical and theoretical aspects of developing embedded systems with real time constraints. Topics include real time operating systems, task management and synchronization, real time scheduling algorithms, performance analysis and optimization, real time communication, design for low power, interfacing to external devices, and device drivers.

CSCE 5261 - Advanced Artificial Intelligence (3 cr.)

Description
Problem Solving by Search, Knowledge Representation and Reasoning, Planning, Quantifying Uncertainty, Probabilistic Reasoning, Learning from Examples, Learning Probabilistic Models, and Reinforcement Learning.

Cross-listed
Same as RCSS 5245.

CSCE 5262 - Computational Machine Learning (3 cr.)

Prerequisites
Instructor's approval.

Description
Linear and non-linear machine learning methods, regularization techniques, resampling methods, reinforcement learning, Markov models, and contemporary advanced topics in machine learning.

CSCE 5263 - Knowledge Engineering (3 cr.)

Description
Introduction to knowledge based system development life cycle, acquiring knowledge from domain experts, text, and data, machine learning techniques used to automate the knowledge acquisition process, knowledge modeling approaches, design and implementation of knowledge based systems, knowledge based systems verification and validation techniques.

CSCE 5264 - Natural Language Processing (3 cr.)

Prerequisites
CSCE 5261

Description
Introduction to syntactic and semantic analysis of natural languages with emphasis on English

and Arabic. Issues on word sense disambiguation, parsing formalism, and discourse analysis; machine translation techniques: transfer, knowledge based and statistical approaches.

When Offered
Offered in fall.

CSCE 5265 - Social Network Analysis and Mining (3 cr.)

Description
Theoretical and empirical methods for analyzing and reasoning about large-scale social and information networks, including data mining techniques such as: understanding temporal evolution, community structures, and information diffusion in information networks, and relational machine learning methods such as: collective classification, link prediction, entity disambiguation, and influence maximization. A number of practical applications in different domains will be introduced, such as viral marketing, outbreak detection, protein-protein interactions.

CSCE 5266 - Computer Vision (3 cr.)

Prerequisites
Approval of Instructor.

Description
This course provides an introduction to Image Processing and Computer Vision, including but not limited to principles of Image Representation, Image Filtering, Edge Detection, Image Frequency-domain Representation and Processing, Image Segmentation, Local Feature Extraction, 3D Vision, Object tracking and recognition, Motion Estimation and Scene Analysis.

CSCE 5267 - Digital Image Processing (3 cr.)

Description
Image acquisition, color representation, quantization, image transforms, enhancement, filtering, multi-spectral processing, image restoration, image segmentation, morphological transform, compression, and applications.

CSCE 5268 - Computer Graphics and Animation (3 cr.)

Description
Fundamental concepts and basic techniques of computer graphics. Algorithms and recent research in graphics and animation. A thorough survey of object modeling, realism, ray tracing, rendering, and light models. Modeling of animated objects, motion animation, and human animation.

CSCE 5269 - Pattern Analysis (3 cr.)

Description
Decision Theory, Linear Discriminants, Logistic Regression, Principal Components Analysis, Support Vector Machines, Vector Quantization, Mixture of Gaussian, Expectation-Maximization, Clustering, Mixture of Gaussian, Case Studies and applications: object classification.

CSCE 5271 - Advanced Software Engineering (3 cr.)

Description
Formal methods in software engineering, first-order logic, basic specification elements and rigorous proofs. Verification and validation. Testing and debugging techniques and tools. Reusability, modularity, top-down and bottom-up development approaches, object classification, support for concurrency and polymorphism.

CSCE 5272 - Advanced Software Quality (3 cr.)

Description
Introduction to advanced topics in software quality such as aspects of quality in various development life cycles, software measurement, software quality metrics, testing, quality models, high maturity, better practices in the domain to produce high quality and reliable software, as well as case studies.

CSCE 5910 - Independent Studies in Computer Science and Engineering (1-3 cr.)

Prerequisites
Consent of instructor

Description
Under the guidance of a faculty member, the student carries on a reading, research, or a project on a specific computer science topic. The student will present his/her results by submitting a report or passing an examination as determined by the supervisor.

CSCE 5930 - Selected Topics in Computer Science and Engineering (3 cr.)

Prerequisites
Prerequisite: permission of instructor.

Description
Topics chosen according to special interests of faculty and students.

Repeatable
May be repeated for credit more than once if content changes.

CSCE 5940 - Seminar (1 cr.)

Description
Seminars of research topics given by invited speakers as well as presentation and discussion of results obtained by graduate students during their research work.

Notes
Must be taken twice for credit. Graded pass or fail.

CSCE 5980 - Capstone Project in Computing (3 cr.)

Prerequisites
Prerequisite: consent of instructor.

Description
Under the guidance of a faculty member, the student carries out a research project on a specific computer science topic. The student will present his/her results by submitting a report or passing an examination as determined by the supervisor.

Notes
This course cannot be taken for credit by thesis-option M.Sc. students.

CSCE 5981 - Graduate Thesis (3 cr.)

Prerequisites
ENGR 5940

Description
Consultation on problems related to student thesis.

Notes
Must be taken twice for a total of 6 credits.

CSCE 6222 - Advanced Data-Driven Optimization (3 cr.)

Prerequisites
Consent of the Instructor.

Description

Formulation of optimization models including linear and integer programs; scaling methods; combinatorial optimization; stochastic optimization and handling uncertainty; connecting learning with optimization; decision-making for optimization problems; evaluation of solutions via simulation and counterfactual analysis.

Notes

The course is associated with a one/two-weekend workshop that is mandatory. Proficiency of Python and good knowledge of linear algebra and statistics are expected.

CSCE 6231 - Mobile and Pervasive Computing (3 cr.)

Prerequisites
Approval of Instructor.

Description

Fundamentals, challenges, and state of the art research discussions in mobile and pervasive computing. To include topics related to the domain such as location management, data dissemination, context awareness, software engineering, middleware, security and privacy, sensing and actuation, applications, and research paper critique.

CSCE 6261 - Advanced Data Mining (3 cr.)

Prerequisites
CSCE 5261

Description
Theoretical aspects of data, text and web mining techniques including classification, association, predication, clustering and path analysis. Data and text classification, data and text clustering, web usage mining, web structure mining, and web content mining. Applications of web mining: personalization, summarization, web page ranking, and opinion mining.

When Offered
Offered in spring.

CSCE 6930 - Advanced Selected Topics in Computer Science (3 cr.)

Description
Topics chosen according to special interests of faculty and students. May be repeated for credit more than once if content changes.

CSCE 6980 - Research Guidance Dissertation (3 cr.)

Description
Consultation on problems related to student thesis. To be taken 11 times for credit.

Construction Engineering

CENG 1001 - Introduction to The Engineering Profession (1 cr.)

Prerequisites
Should be taken in one of the first two semesters in the program.

Description
History of engineering. Engineering fields of specialization and curricula. The engineering profession: team work, professionalism, ethics, licensing, communication and societal obligations. Engineering support. Engineering approach to problem solving. Examples of major engineering projects. Course project.

When Offered
Offered in fall and spring.

CENG 1251 - Engineering Drawings (1 cr.)

Description
Orthographic and pictorial drawing, sectional views, auxiliary views, and conventions, dimensioning and dimensional sensitivity skills, free hand sketching, and computer-aided drafting.

Hours
One three-hour lab period
When Offered
Offered in fall and spring.

CENG 2111 - Engineering Mechanics - Statics and Dynamics (4 cr.)

Prerequisites
MACT 1121 and PHYS 1011

Description
Statics: Fundamentals of engineering mechanics. Equilibrium of practices, forces in space, equivalent systems, equilibrium of rigid bodies. Distributed forces, center of gravity, Distributed moments, moment of inertia. Internal actions in trusses and beams, analysis of simple structures. Friction. Dynamics: Kinematics and kinetics of a particle, rigid bodies. Energy and momentum methods.

Hours
Three class periods and three-hour tutorial

When Offered
Fall and Spring

CENG 2115 - Engineering Mechanics and Structural Analysis for Architects (4 cr.)

Description

Fundamentals of mechanics, Equilibrium of practices, Forces in space, Equilibrium of rigid bodies, Mechanical properties of areas including center of gravity, moment of inertia and section moduli, Stability Concepts, Classification of structures according to determinacy, Internal forces, Analysis of determinate structures including trusses, beams, frames, arches, and cables, Deflections of structural members. Introduction to indeterminate structures.

Hours
Three class periods and three-hour tutorial.
When Offered
Offered in fall and spring.

CENG 2211 - Strength and Testing of Materials for Construction (3+1 cr.)

Prerequisites
CENG 2111 or ENGR 2102

Description
Concept of stress and strain in components, mechanical behavior of materials under tensile, compressive, and shear loads, hardness, impact loading, fracture and fatigue. Analysis of stresses and the corresponding deformations in components, axial loading, torsion, bending, and transverse loading. Statically indeterminate problems. Transformation of plane stresses, and Mohr's circle. Construction engineering applications.

When Offered
Fall and Spring

CENG 2251 - Drawing for Construction Engineering (1 cr.)

Prerequisites
CENG 1251 or ENGR 1005

Description
Architectural and structural drawings. Roads and hydraulic works drawings. Construction details. Electro-mechanical drawings for construction.

Hours
One three-hour lab period.
When Offered
Offered in fall and spring.

CENG 2252 - Building Construction Methods I for Architects (3 cr.)

Description

Techniques of building construction. Methods, materials of construction. Site & Setting, Simple Structural Systems including Frame skeleton, Wooden Structures, Wall Bearing. Basics of Foundation Systems, Floor Systems, Wall Systems and Roof Systems. Applications on influence of construction methods on design and details.

Hours
1.5 class period and 1.5 hour field trip and 3 hour lab period.

CENG 2311 - Construction Surveying (3 cr.)

Prerequisites
MACT 1121

Description
Principles of plane surveying; methods of measuring distances, angles and differences in heights (levels); traverse computations; setting out horizontal and vertical curves; earthwork computation; setting out engineering structures and construction projects.

Hours
Two class periods and three-hour lab period
When Offered
Offered in fall and spring.

CENG 2511 - Fluid Mechanics (3 cr.)

Prerequisites
PHYS 1021, CENG 2111 or ENGR 2104

Description
Fluid properties, fluid statics, fluid flow. Conservation of momentum, energy, continuity and Bernoulli's equations. Viscous efforts for laminar and turbulent flow. Steady-state closed conduit and open channel flow. Application to construction engineering.

Hours
Two class periods and three-hour lab period
When Offered
Offered in fall and spring.

CENG 2558 - Environmental Science Laboratory (1 cr.)

Prerequisites
CHEM 1005 and CHEM 1015

Description
The science of environmental pollution, contamination and their chemical sources, Environmental quality parameters, Laboratory techniques for sample analysis, Interpretation of laboratory results.

Hours
3 lab hours
When Offered
Offered in fall and spring.

CENG 3011 - Electrical and Mechanical Systems for Construction Engineering (4 cr.)

Prerequisites
ARCH 3562 , CENG 2511

Description

A study of electrical and mechanical systems used in both residential and commercial construction. Lectures cover the basic principles of electrical distribution, artificial lighting, fire protection, plumbing systems and heating, ventilating and air conditioning (HVAC) systems. Course content will include system design, component selection and utilization for energy conservation. Techniques of application and installation will be included as well as site visits and workshops.

Hours
Three class periods and three-hour lab period
When Offered
Offered in fall and spring.

CENG 3111 - Structural Analysis (4 cr.)

Prerequisites
CENG 2111 and CENG 2211 or concurrent

Description
Analysis of statically determinate structures under static loads, member forces in trusses, shear and moment diagrams, live loads and influence lines, deflections, analysis of statically indeterminate structures by three-moment equation, the method of consistent deformation, slope-deflection, and moment distribution. Approximate analysis of statically indeterminate structures. Matrix force and displacement methods with computer applications.

Hours
Three class periods and three-hour tutorial.
When Offered
Offered in fall and spring

CENG 3112 - Structural Analysis and Design Principles for Architects (3 cr.)

Prerequisites
ENGR 2102

Description
Classification and analysis of determinate structures including; trusses, beams, frames, arches and cables. Computation of deflections. Analysis of structure using commercial software.

Principles of limit states design. Properties of concrete and construction material. Distribution of loads and arrangement of structural elements in reinforced concrete buildings.

When Offered
Offered in fall and spring

CENG 3113 - Numerical Methods (3 cr.)

Prerequisites
CSCE 1001 and MACT 2141

Description
Numerical techniques and algorithms for solving systems of linear and non-linear equations, curve fitting and interpolation, numerical integration and differentiation, numerical solutions for initial and boundary-value ordinary differential equations, and introduction to numerical techniques for partial differential equations.

CENG 3151 - Structural Design for Architects I (3 cr.)

Prerequisites
CENG 2115 or CENG 3112

Description

The structural design process, Structural systems, RC structural members, Flooring systems and concept design, lateral load resisting systems, Types of loads on structures and load combinations, Concept design of RC members and slabs, Reinforcement details, Introduction to steel Structures, Properties of steel, Steel sections and bolts, General layout of steel structures, Gravity and lateral load resisting systems, Concept design of steel members, Types of steel connections.

When Offered
Offered in fall and spring.

CENG 3152 - Structural Design for Architects II (3 cr.)

Prerequisites

CENG 3151

Description

Flooring systems: flat slabs, ribbed slabs, paneled beams, and stairs. Long-span structures: frames, arches, and domes. Lateral load resisting systems in reinforced concrete and steel structures. Foundation systems: soil types and exploration, foundation design considerations, types of foundations, and introduction to foundation design.

When Offered

Offered in fall and spring.

CENG 3153 - Structural Design (4 cr.)

Prerequisites

CENG 3111, CENG 3211

Description

Properties of plain and reinforced concrete, behavior of composite sections, ultimate strength and working stress design of structural elements, beams, columns, one-way and two-way solid slabs, detailing of reinforcing steel. Concept of elastic design of steel structures, structural systems for steel buildings and bridges, elastic design and analysis of steel tension members, compression members, beams, columns, and connections.

Hours

Three class periods and three-hour tutorials.

When Offered

Offered in fall and spring.

CENG 3211 - Construction Materials and Quality Control I (4 cr.)

Prerequisites

CENG 2211

Description

Types and properties of construction materials and components. Concepts of quality control, statistical evaluation and corresponding experimental work. Aggregates types, sources and

quality. Inorganic cements. Concrete mix design, admixtures and quality control. Asphalt cement, asphalt concrete mix design and quality control. Steel in construction. Masonry materials, timber, insulation materials and coatings.

Hours
Three class periods and three-hour lab period.
When Offered
Offered in fall and spring.

CENG 3312 - Geology for Engineers (2 cr.)

Prerequisites
CENG 2311

Description
Minerals and rock types, superficial deposits, interpretation of geologic maps, structural geology, geologic exploration, ground water cycle, geology of Egypt and greater Cairo.

When Offered
Offered in fall and spring.

CENG 3511 - Fundamentals of Hydraulic Engineering (3 cr.)

Prerequisites
CENG 2511 or ENGR 2122

Description

Introduction to water resources projects, pipelines and pipe networks, pumps, open channel flow, hydraulic structures, water flow in soil media, seepage, wells and dewatering systems.

Hours
Two class periods and three hour lab period.
When Offered
Offered in fall and spring.

CENG 4113 - Structural Mechanics (3 cr.)

Prerequisites
CENG 3153

Description
Structural Mechanics: normal stress and strain due to normal force and bending moment, shear stress and strain due to shear force and torsion, shear center, shear stress in thin-walled sections, general stress state, principal stresses and stress invariants, failure criteria for brittle and ductile materials.
Stability of Structures: overall buckling of columns, local buckling of thin-walled sections, lateral torsion-flexure buckling of beams.
Structural Dynamics: single degree of freedom systems, damping, response to harmonic excitation, response to support excitation, response spectra, multi-degree of freedom systems, modal analysis, mass participation and earthquake analysis.
Introduction to fracture mechanics: Beams on elastic foundation and raft analysis; Introduction to theory of plates and shells.

CENG 4154 - Advanced Design of Reinforced and Prestressed Concrete Structures (3 cr.)

Prerequisites
CENG 4158 - Structural Systems and Advanced Design (3 cr.)

Description
Prestressed concrete: basic concepts of prestressing, fibre stresses in a prestressed beam, load balancing, permissible stress in concrete and steel, prestressing systems, prestress partial losses, flexure, shear and torsion design of prestressed concrete elements, indeterminate PC structures, prestressed concrete slabs. Concrete water structures: design considerations and parameters, water tightness, analysis and design of circular and rectangular tanks.

CENG 4155 - Steel and Concrete Bridges (3 cr.)

Prerequisites
CENG 3153

Description
Types of bridges. Loads; dead, live, impact, wind and other loading. Basic design and

construction of various types of bridges; truss, beam and plate girder, slab, box girder. bearings and expansion details.

CENG 4157 - Tall Buildings and Large Span Structures (3 cr.)

Prerequisites
CENG 3152 or CENG 3153

Description
Structural systems for modern tall buildings: gravity load systems; transfer floor systems; lateral load systems for resisting wind and earthquake forces; design considerations for tall buildings. Roof systems for large span areas and arenas: shell structures; folded plates; tensile structures and canopies.

When Offered
Offered occasionally.

CENG 4158 - Structural Systems and Advanced Design (3 cr.)

Prerequisites
CENG 3152 or CENG 3153

Description
Structural design process, structural performance criteria, choice of structural system, design topics for reinforced concrete and steel structures including: rigid frames, ribbed and flat floor systems, torsion, biaxial bending, deflections, composite construction.

CENG 4212 - Construction Materials and Quality Control II (3 cr.)

Prerequisites
CENG 3211

Description
Various types of advanced concrete, metals, and highway materials. Examples are concrete admixtures, special concretes, special construction alloys, soil stabilizers, and bituminous materials and high strength low alloy steels. Advanced mechanics of components incorporating

innovative materials. Environmental-friendly use of materials and incorporation of waste materials. Advanced quality control techniques. Laboratory experiments are conducted for demonstration purposes.

CENG 4252 - Methods and Equipment for Construction I (3 cr.)

Prerequisites
ARCH 2551 or ARCH 3562 , CENG 3112 or CENG 3153

Concurrent
ARCH 3331 or CENG 3211
Description

Techniques of building construction. Methods, materials, tools and equipment of construction. Traditional, mechanized and prefabrication construction systems. Applications on site management and safety, Selection of construction equipment. Applications on influence of construction methods on design and details. Emphasis in applications will be provided based on student Program.

Hours
1.5 hour class period, 1.5 hour field trip and 3 hour lab period.

CENG 4253 - Methods and Equipment for Construction II (2 cr.)

Prerequisites
CENG 4252

Description
Civil construction; methods, materials, tools and equipment; traditional and modern construction technologies. Evaluation and selection of appropriate construction technology. Sizing, operation and maintenance of construction equipment, design of temporary construction elements such as: concrete formwork, scaffolding systems, cofferdams.

When Offered
Offered in fall and spring.

CENG 4313 - Soil Mechanics (4 cr.)

Prerequisites
CENG 2211, CENG 3511, CENG 3312

Description
Soils' index properties and engineering classification; soil composition and structure; lab and field soil compaction; water seepage and water flow net in soil media, stresses in soil, soil stress-strain properties; consolidation in soil; shear strength of soils, basic theory of lateral earth pressure of soils; analysis of soil slope stability. Experimental testing, measurements and reporting.

Hours
Three class periods and three-hour lab period.
When Offered
Offered in fall and spring.

CENG 4314 - Design and Construction of Foundations and Retaining Structures (3 cr.)

Prerequisites
CENG 4313

Description
Subsurface soil exploration and reporting; types of foundations systems and design criteria; theory of bearing capacity, design of shallow foundations, dimensioning footings; structural design of footings; isolated, combined and strap beam, design of deep foundations; bases for design of retaining structures; construction methods; effects of construction of nearby structures.

When Offered
Offered in fall and spring.

CENG 4315 - Applications in Geotechnical Engineering (3 cr.)

Prerequisites
CENG 4314 or concurrent.

Description

Geotechnical analysis and design concepts applied to engineering projects: stability of natural and man-made soil and rock slopes, reinforced earth, deep soil stabilization, cofferdams, mat foundation, deep foundation under various loading conditions.

When Offered
Offered occasionally.

CENG 4351 - Transportation Engineering (3 cr.)

Prerequisites
CENG 2111 and CENG 3211

Description
Introduction to transportation planning and engineering; transportation planning tools, concepts of geometric and structural design and construction of highways, and concepts of geometric design of railways.

When Offered
Offered in fall and spring.

CENG 4352 - Highway Facilities (3 cr.)

Prerequisites
CENG 4351

Description
Analysis of factors in developing highway transportation facilities, traffic estimates and assignment, problems of highway geometric and design standards, planning and location principles, intersection design factors, structural design of pavement and highway maintenance.

When Offered
Offered occasionally.

CENG 4410 - Introduction to Construction Management and Cost Estimating (3 cr.)

Prerequisites

ENGR 3222, (CENG 3153 or CENG 3151), (ARCH 3562 or ARCH 2551)

Description
Introduction to construction management: participants involved types of construction project life cycle. Estimating techniques and procedures: approximate estimating, quantity surveying, detailed estimating procedure, costing of labor, material, equipment, overhead costs, cash flow analysis, financing costs, cost recording and cost accounts, Quality Management, and Safety Management; basics of company's organization and HR management.

When Offered
Offered in fall and spring.

CENG 4420 - Construction Project Specifications, Bids, and Contracts (3 cr.)

Prerequisites
CENG 4410

Description
Participants in a construction contract. Contract definition. Types of contracts; formation principles of a contract, performance or breach of contractual obligations. Analysis and comparison of the different kinds of construction contracts. Bidding logistics. Legal organizational structures. Different types and uses of specifications. Different forms of contracts utilized in construction.

When Offered
Offered in fall and spring.

CENG 4430 - Risk Management and Bidding Strategies (3 cr.)

Prerequisites
CENG 4410 and CENG 4440

Description
Introduction to Risk and Uncertainty. Process of Risk Management: Risk Identification, Risk Analysis (Qualitative and Quantitative), Risk Response Planning, Risk Monitoring and Control, Tools and Techniques: Decision Tree, modeling, optimization, linear programming, network optimization, and inventory models. Monte Carlo Simulation and Application. Accounting for

Project Risks. Introduction to Risk Analysis packages (Crystal Ball, PERT Master). Analyzing the Bidding Behavior of Key Competitors and Estimating Optimum Markup.

When Offered
Offered in fall and spring.

CENG 4440 - Techniques of Planning, Scheduling and Control (3 cr.)

Prerequisites
CENG 4410

Description
Project definition and work breakdown structure, deterministic and probabilistic scheduling and control models and techniques. Resource allocation and levelling, optimal schedules, documentation and reporting, time and cost control, progress monitoring and evaluation. Computer applications.

When Offered
Offered in fall and spring.

CENG 4450 - Design, Modeling and Simulation of Construction Systems (3 cr.)

Prerequisites
CENG 3113 and CENG 4252

Description

Building Information Modeling, Computer modeling of construction processes, 4D Simulation of construction operations, Productivity modeling, measuring and forecasting, Sequencing and coordination of construction systems, Post-Optimality Analysis of Integer and Linear Programming Models in construction, discrete event simulation of construction processes.

Hours
Two one-hour class periods and three-hour lab period.

CENG 4460 - Financial Management and Accounting for Construction (3 cr.)

Prerequisites
CENG 4420

Description
Basic accounting terminology, accounting cycle and process, financial statements and analysis, unique aspects of accounting for the construction industry methods of revenue recognition for construction, percentage of completion computations, unbalanced items in construction: costs in excess and billings in excess.

When Offered
Offered in fall and spring.

CENG 4470 - Contract Administration (3 cr.)

Prerequisites
CENG 4420 or concurrent.

Description
Construction project parties' responsibilities pursuant to Civil Code and the Law of Tenders and Auctions (No. 89/1998), tendering procedures, contract negotiation and drafting, document control, international form of contracts (FIDIC), management of the variation process, Claims preparation and evaluation, disputes resolution methods.

When Offered
Offered occasionally.

CENG 4551 - Environmental and Sanitary Engineering (3 cr.)

Prerequisites
CENG 2558 and CENG 3511

Description

Water quality. Material balance relationships and water pollution control. Water demand. Drinking water: collection, treatment, distribution and quality assurance. Domestic and industrial wastewater collection, treatment and disposal. Environmental Impact Assessment.

Hours
Two-hour class period and three-hour lab period
When Offered
Offered in fall and spring.

CENG 4552 - Design of Water Resources Systems (3 cr.)

Prerequisites
CENG 4313

Description
Introduction to water resources engineering. Design of irrigation systems and canals. Hydraulic structures: types, functions, hydraulic design, environmental impact. Urban and rural drainage systems associated with public infrastructure projects: types, design considerations, and hydraulic design.

When Offered
Offered occasionally.

CENG 4553 - Unit Operations in Environmental Engineering (3 cr.)

Prerequisites
CENG 4551 concurrent.

Description
Theory and design of unit operations and processes in environmental engineering, emphasizing water and wastewater treatment; namely: physical, chemical and biological unit processes, sludge handling processes.

Cross-listed
Same as ENVE 5251, but with additional requirements for graduate students.

CENG 4554 - Computer-aided design and construction of environmental and sanitary systems (3 cr.)

Prerequisites
CENG 3511 and CENG 4410 .

Description
Sanitary, storm water and combined sewerage systems: selection, elements, layout, computer-assisted hydraulic modeling and design. Water supply and distribution systems: hydraulic modeling and design. Pipeline asset management, GIS application in pipeline management and Life Cycle Cost Analysis. Pipeline rehabilitation and repair methods. Planning and construction considerations.

When Offered
Offered in fall and spring.

CENG 4555 - Solid and Hazardous Wastes Engineering (3 cr.)

Prerequisites
Senior standing.

Description

Solid wastes - Nature, generation and collection. Local and regional management strategies including recycling and recovery of useful products, landfilling, and incineration. Hazardous wastes - Nature, generation and collection. Risk assessment. Management strategies including source reduction, treatment, recovery, landfilling, and incineration.

CENG 4556 - Design of water and wastewater treatment plants (3 cr.)

Prerequisites
CENG 4551 - Environmental and Sanitary Engineering (3 cr.)

Description
Water impurities, Water quality regulations, drinking water standards; process and hydraulic design of water purification works: Flash mixing, flocculation, sedimentation, clariflocculator, sand filtration, membrane filtration, and disinfection. Wastewater characterization; process and hydraulic design of wastewater treatment works: Preliminary and primary treatment; secondary

biological treatment units. Layout design of water treatment plants and wastewater treatment plants.

CENG 4557 - Functional design and construction of tunnels and bridges (3 cr.)

Prerequisites
CENG 4352 - Highway Facilities (3 cr.)

Description
Bridges and tunnels as part of road and/or rail networks, geometric features of bridges and tunnels, conceptual designs of substructure and superstructure of bridges and tunnels, geotechnical investigations; ramps, design of intersections and interchanges, earthwork configuration and stability, soil-structure interaction, methods of construction.

CENG 4911 - Selected Topics in Construction Engineering (3 cr.)

Prerequisites
Prerequisite: senior standing.

Description
Specialized topics in construction engineering will be selected and presented.

When Offered
Offered in fall and spring.

CENG 4921 - Special Problems in Construction Engineering (1-3 cr.)

Prerequisites
Prerequisite: consent of instructor and department chair on the basis of a well-defined proposal.

Description
Independent study in various problem areas of construction may be assigned to individual students or groups.

When Offered

Offered in fall and spring.

Repeatable

May be repeated for credit if content changes.

Notes

Readings assigned and frequent consultations held.

CENG 4951 - Practical Training (1 cr.)

Prerequisites

Prerequisite: completion of 96 credit hours.

Description

Each student is required to spend a minimum of eight weeks in industrial training in Egypt or abroad. A complete account of the experience is reported, presented and evaluated. Professional ethics: theories and analysis of ethical case studies.

When Offered

Offered in fall.

CENG 4952 - Construction Intern Development (3 cr.)

Prerequisites

Department Approval

Description

Students will spend 12 weeks as full-time engineers-in-training in construction companies. During their engagement, the students will partake in activities related to one or more experience areas related to construction engineering, such as Tendering, Planning and Progress Control, Contract Administration, Construction Execution, Advanced Construction Materials, Technical Office, BIM Engineering, Procurement, Quality Management, Pre-stressing, Structural Design, Infrastructure Systems.

Students will be assigned daily tasks and responsibilities, and they will actively contribute to the progress of their assigned construction projects.

CENG 4980 - Senior Project I (1 cr.)

Prerequisites
At least 4 of the 5 following courses CENG 3211 , CENG 4351 , CENG 4158 , CENG 4314 ,CENG 4551

Description
A capstone project. Topics are selected by groups of students according to their area of interest upon advisors' approval. Projects address solutions to open ended applications using an integrated engineering approach.

When Offered
Offered in fall and spring.

CENG 4981 - Senior Project II (2 cr.)

Prerequisites
CENG 4980, CENG 4440, CENG 4420, CENG 4252

Concurrent
CENG 4460
Description
An applied cap stone project. Continuation of senior project I topics is encouraged. Actual construction projects are selected by groups of students upon advisors' approval for analysis. The management and technology aspects of construction are simulated and investigated.

When Offered
Offered in fall and spring

CENG 5121 - Assessment, Protection and Repair of Structures (3 cr.)

Description
Types, mechanisms and analyses of deterioration of concrete and steel structures, approaches and means of damage assessment, assessing structural stability and integrity of existing structures, development of sound strategy for repair and restoration. Protection and repair materials, techniques, design and economic aspects.

CENG 5151 - Advanced Design of Steel and Composite Structures (3 cr.)

Prerequisites
Dept. Approval for undergraduate students
Admission to CENG graduate programmes

Description
Structural steel: LRFD design philosophy, structural steel systems, vertical and lateral resisting systems, construction of steel structures. Elements design: structural behaviour of members, local buckling and cross section classification, tension members, struts and axially loaded columns, bracing systems, beams, beam-columns and framed structures. Connections (bolted and welded): types of bolts, bolts subject to shear, tension and combined shear and tension, eccentric bolted connections, types of welds, weld subject to shear, tension and combined shear and tension, eccentric welded connections. Miscellaneous structural elements and systems: stairs, end gable columns and girts, portal frames, plate girders, composite steel concrete elements.

CENG 5152 - Advanced Composite Materials in Infrastructure Applications (3 cr.)

Prerequisites
Department approval for undergraduate students or Admission to CENG graduate programmes

Description
Advanced Composite Materials (ACMs) and Fibre Reinforced Polymers (FRPs), Mechanical properties, Flexural strengthening of reinforced concrete slabs using FRP strips, Flexural and shear strengthening of beams using FRP strips and sheets, strengthening of columns using FRP sheets, Concrete reinforced with FRP bars, ACMs new structures.

CENG 5155 - Pavement Management Systems (3 cr.)

Description

Pavement as infrastructure asset. Essential features of pavement management systems (PMS). Data inventory for PMS; collection and analyses. Criteria of pavement performance in PMS. Mechanistic-Empirical pavement design (MEPDG) versus pavement performance. Maintenance and rehabilitation techniques. Pavement network management optimized decision making.

CENG 5210 - The Finite Element Method in Structural Engineering (3 cr.)

Prerequisites
Prerequisite: consent of instructor.

Description
Fundamentals of the Finite Element Method (Equilibrium Equations, Virtual Work and Potential Energy, Interpolation and Shape Functions, Convergence, and Computer Programming), One-Dimensional Elements (Truss, Beam, and Frame Elements), Two-Dimensional Elements (Plane Stress and Plane Strain Elements, and Isoparametric Formulations), Three-Dimensional Elements (General and Axisymmetric Solids), Surface Elements (Flexure in Plates, General and Axisymmetric Shells), Analyses (Vibration Analysis, Stability Analysis, and Nonlinear Analysis), and Finite Element Surface Packages.

CENG 5220 - Advanced Construction and Building Materials (3 cr.)

Description
Recent developments in the areas of concrete, highway materials and metals. Examples are concrete admixtures, light weight aggregates, polymers, prestressed concrete, soil stabilizers, bituminous materials and high strength low alloy steels. Advanced mechanics of components incorporating innovative materials. Environmental-friendly use of materials and recycling of solid waste.

CENG 5225 - Advanced Systems Analysis for Construction Engineering (3 cr.)

Prerequisites
Consent of instructor.

Description
Systems analysis approach; systems modeling; systems approach to engineering and management; closed versus open systems; modeling construction organizations as open systems. Decision analysis: Artificial intelligence techniques: evolutionary algorithms, prediction and behavior detection, regression analysis, artificial neural networks, knowledge representation, fuzzy logic and fuzzy sets, fuzzy knowledge based systems.

Notes
Not open for students with MENG 5251 .

CENG 5227 - Advanced Systems for Construction (3 cr.)

Prerequisites
Consent of instructor.

Description
Construction details, materials, equipment, manufacture, fabrication and erection of special building structures: high rise buildings, wide span structures, underground buildings, large scale projects, specialized buildings, etc. Construction organization, advanced construction materials with cost implications; Advanced Delivery Techniques for projects; Company organization and funding of projects.

CENG 5241 - Infrastructure Asset Management (3 cr.)

Prerequisites
Consent of instructor.

Description
Urban infrastructure systems. It presents a generic framework for asset management that includes: information management and decision support systems, condition assessment, deterioration prediction, life cycle cost analysis, risk management, performance measures, and budget allocation. Elements of this framework are presented within the context of civil infrastructure systems; Roads, Buildings, Water networks, and Sewer networks.

CENG 5242 - Simulation Applications in Construction (3 cr.)

Prerequisites
Consent of instructor

Description
Simulation Paradigms, discrete event simulation, systems dynamics simulation, agent based simulation, elementary queuing theory applications in construction, validating simulation models, visualizing techniques in simulation, sampling from non-uniform distributions, introduction to special purpose simulation languages for construction, simulation modeling techniques and analysis.

CENG 5243 - Construction Leadership and Management Skills (3 cr.)

Prerequisites
Prerequisite: consent of instructor.

Description
Successful construction practices are impacted not only by the technical skills but also by the leadership and management personal skills of the project team. This course outlines indispensable leadership and management skills including time management, communication skills, capacity and team building as well as the ethical components in construction. International and local case studies are provided to illustrate these issues and quantify both the positive and negative impacts. A final project is submitted where with situational analyses and lessons learned.

Notes
Not open for credit for M.S. students.

CENG 5244 - Advanced Construction Management (3 cr.)

Prerequisites
Prerequisite: consent of instructor.

Description
The course covers advanced topics in the area of construction management including advanced scheduling techniques, cost schedule integration, bidding models applied to the construction industry emphasizing the difference in view points between owners and contractors, risk in construction, contingency and mark-up allocations, risk versus return relationship including models to determine the cost-of-capital for construction firms and projects.

CENG 5245 - Claims and Disputes in the Construction Industry (3 cr.)

Description
The course provides an in-depth coverage of the litigious environment within the construction industry and outlines the appropriate techniques to handle such environment. Claims and disputes from both owners and contractors perspectives are covered. The course also outlines the use of techniques such as scheduling as mechanisms for the efficient resolution of claims.

CENG 5247 - Resource Management and Delay Analysis for Construction Projects (3 cr.)

Prerequisites
Consent of instructor.

Description

This course analyzes construction resource planning and control in construction projects, with emphasis on optimization of labor, materials, and equipment under time and cost constraints. Topics include material procurement logistics, accountability, and cost modeling; labor productivity measurement and utilization analysis; and equipment production rates, owning/operating cost optimization and crew balance techniques. The course also covers forensic schedule delay analysis methods such as Time Impact Analysis (TIA), As-Planned vs. As-Built, Windows Analysis, and Collapsed As-Built. Emphasis is placed on delay quantification, responsibility allocation, acceleration assessment, and time-related financial impacts.

When Offered
Offered in spring.

CENG 5248 - Managing Multiple Projects (3 cr.)

Prerequisites
Consent of instructor.

Description

Principles and practices of financing and managing multiple concurrent construction projects within a portfolio environment. Topics include organizational structures, contractual arrangements, financing methods, financial analysis, resource optimization, crashing, and monitoring/control. Emphasis is placed on integrating financial, contractual, and managerial perspectives to improve portfolio performance in large-scale construction programs.

CENG 5250 - Principles of International Contracts and Arbitration (3 cr.)

Prerequisites
CENG 4420 and CENG 4440

Description

Foundations of construction contracts using the UNIDROIT principles of International Commercial Contracts and the Egyptian Civil Law. Commercial Remedies for breach of contracts will be studied in detail. Elaboration on the Arbitration process and its enforcement in courts through the application of the New York Convention.

CENG 5291 - Independent Study in Construction Engineering (3 cr.)

Description

Independent study in various problem areas of engineering may be assigned to individual students or to groups. Readings assigned and frequent consultations held.

Notes

(Students may sign for up to 3 credits towards fulfilling M. Sc. requirements).

CENG 5292 - Advanced Topics in Construction Engineering (3 cr.)

Prerequisites

Consent of instructor.

Description

Topics to be chosen every year according to specific interests.

Repeatable

May be taken for credit more than once if content changes.

CENG 5980 - Research Guidance Thesis (3 cr.)

Prerequisites

ENGR 5940

Description

Consultation on problems related to student thesis.

When Offered

Offered in fall and spring.

Notes

Must be taken twice for a total of 6 credits.

CENG 6211 - Structural Stability (3 cr.)

Prerequisites

Consent of instructor.

Description

Fundamental concepts in elastic stability: equilibrium equations, stability criteria and post-buckling behavior. Various aspects of instability: buckling of columns, frames, arches, plates and shells, dynamic buckling, nonlinear problems, torsion and flexural buckling. Approximate methods for stability analysis. Interactive buckling phenomena in light metallic constructions.

CENG 6212 - Structural Dynamics (3 cr.)

Prerequisites

Consent of instructor.

Description

Dynamics of discretized systems; one degree of freedom systems; free and forced vibration; response to base excitation, stochastic excitation, impact. Lumped - mass multidegree systems: free and forced vibration of two degrees of freedom systems in response to harmonic and step functions, pulses, and general type. Matrix formulation for multiple degrees of freedom, natural frequencies, Lagrange equations, modal analysis. Flexural vibrations of beams, plates and frames. Dynamic response to impact and moving loads.

CENG 6213 - Earthquake Engineering and Seismic Design (3 cr.)

Prerequisites

Consent of instructor.

Description

Earthquake ground motion and response spectra, dynamic response of buildings and structures to seismic loads, lateral load resisting systems, seismic design considerations, drift and lateral

stability, code considerations, design of reinforced concrete, masonry and steel structures, design of nonstructural systems, structures with seismic mitigation systems: active and passive damping and base isolation.

CENG 6222 - Specialty Materials for Construction (3 cr.)

Prerequisites
Consent of instructor.

Description

Review of applied mechanics of materials. Asphalt concrete; components, conventional and SUPERPAV characterization of asphalts, asphalt concrete conventional and SUPERPAV mix design, mechanistic and environmental performance. Special types of concrete; e.g. high strength, high durability, corrosion resistant, self compact. Non-conventional construction materials.

CENG 6223 - Preserving, Repair and Sustainability of Structures (3 cr.)

Prerequisites
CENG 5121 or Equivalent Course/Experience

Description

Protection of masonry, wood, concrete and steel and composite structures. Preserving historic structures. Condition assessment using innovative techniques. Equations and formulae for condition assessment with lab field visits. Complex repair of structures subjected to moderate to sever damage. Durability and sustainability of strategic structures. Repair life cycle cost.

CENG 6231 - Highways Pavement Systems and Design (3 cr.)

Prerequisites
Consent of instructor.

Description

Pavement systems, structures and design factors. Flexible pavements; materials characterization, traffic loading and volume, stresses and strains models, sensitivity analysis, pavement performance, reliability, design criteria, traditional and contemporary methods of design. Rigid pavements; stresses and deflections in rigid pavements due to curling, loading and frication, design criteria, methods of design, design of joints. Design project.

CENG 6291 - Independent Study in Structural and Material Engineering (3 cr. max.)

Description
Independent study in various problem areas of structural and material engineering may be assigned to individual students or to groups. Readings assigned and frequent consultations held.

CENG 6292 - Advanced Selected Topics in Construction Engineering (3 cr.)

Prerequisites
Approval of instructor.

Description
Topics chosen according to special interests of faculty and students. May be repeated for credit more than once if content changes.

When Offered
Offered in fall and spring.

CENG 6980 - Research Guidance Dissertation (3 cr.)

Description
Consultation on problems related to student thesis. To be taken 11 times for credit.

Core Curriculum

CORE 1010 - Freshman Seminar (3 cr.)

Prerequisites

Taken concurrently with RHET 1010 .

Description
This course is a cluster of distinct courses (topics may vary semester to semester) with shared goals and learning outcomes. All sections of CORE 1010 aim to introduce students to university-level academic study and the meaning and values of a liberal arts education. Through varied section topics, readings, films and other media, discussions and assignments, CORE 1010 will help students adapt and succeed in today's university environment, as they develop their skills in critical thinking, information literacy, teamwork, and effective reading and communication. Courses focus on issues of lasting value and current relevance for students, and address questions such as "Who am I?" "What do citizenship and civic responsibility mean?" "How do I know what is true?" and "What is a good life?"

When Offered
Fall and Spring. Summer only for students repeating the course.

CORE 1099 - Selected Topics for Core Curriculum (3 cr.)

Description
Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

CORE 1130 - The Human Spirit (3 cr.)

Description
This interdisciplinary course explores the different facets of what it means to be human and how the human spirit is manifest in various human endeavors and situations. Students will discuss or debate readings in various genres, watch films, analyze various perspectives, write, and draw on their own experiences to formulate conclusions about how and why the answers to these essential and enduring questions involve complexity and multiple points of view.

CORE 1140 - Community Matters (3 cr.)

Description
This course aims to deepen students' understanding and broaden their perspective on the issues and methods of civic and community engagement. Students will analyze the needs of

various groups and develop a critical, reflective understanding of the role of context, interconnectedness, and respect of d9difference. Some sections may integrate Community Based Learning; please check prior registration.

CORE 1930 - Selected Topics for Core Curriculum (3 cr.)

Description
Course addressing broad intellectual concerns in the Pathways One category and accessible to all students, irrespective of major.

When Offered
Every semester.
Repeatable
yes

CORE 2096 - Selected Topics for the Core Curriculum in Global Studies (3 cr.)

Description
Course addressing broad intellectual concerns and open to all students, irrespective of major.

CORE 2097 - Selected Topics for The Arab World (3 cr.)

Description
Topics investigating diverse regional issues in the Arab world; open for all students irrespective of major.

CORE 2098 - Selected Topics on Egypt (3 cr.)

Description
Topics investigating diverse issues relating to Egypt; open for all students irrespective of major.

CORE 2099 - Selected Topics for Core Curriculum (3 cr.)

Prerequisites
RHET 1010

Description
Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

CORE 2142 - Profiles in Civic Leadership and Civic Project Development (3 cr.)

Prerequisites
RHET 1020

Description
This course uses an interdisciplinary approach to examine human rights, social justice, civic engagement and leadership, with a special focus on the university and the opportunities it can provide for service learning and student leadership. Students will learn about the structure and role of various types of institutions including the state, international and civil society institutions within development planning and practice, as well as fund raising and grant writing. While others work on a Civic Leader Project, MEPI students will develop their " Civic Service Project", required formally in their senior year.

CORE 4198 - Selected Topic for Core Curriculum (3 cr.)

Prerequisites
RHET 1020

Description
Interdisciplinary seminar addressing broad current topics and concerns from a variety of intellectual and professional perspectives; open and accessible to all senior students, irrespective of major.

SEMR 1011 - The Human Quest: Exploring the "Big Questions" (3 cr.)

Description
This is an interdisciplinary survey course aimed at helping new undergraduate students acquire an attitude of engaged curiosity, a widened worldview, and enhanced self expression as they begin to discover how a university education can help them find their places in the world. Using an interdisciplinary approach combining geography, history, biology, political science,

anthropology, sociology, literature, and the arts, it aims to introduce students to the process of raising and exploring life's enduring "Big Questions," through readings, music, debates, films, and technology, and thus they acquire some of the knowledge, skills, and attitudes needed by a university student in the 21st century.

SEMR 1012 - "Who Am I?": Explorations in Consciousness and Self Across the Disciplines" (3 cr.)

Description

Self-awareness allows us to perceive both limits and possibilities. This course will be a practical and theoretical exploration of different approaches to consciousness and the self in the sciences, psychology, philosophy and religion, among others.

SEMR 1023 - Celebrating Ideas: A Voyage Through Books, film, Art and Theater (3 cr.)

Description

This course aims at exposing students to a wide range of key landmarks in human intellectual and cultural development. This is achieved through reading a number of texts, each important, simulating, often groundbreaking and discussing the ideas and concepts embodied in these texts. The topics and themes raised through the readings will be further explored and enhanced through exposure not just to the written word but through film, art and theater, all modes in which humankind has been able to express its intellectual development and creative energy.

SEMR 1099 - Selected Topics in Core Curriculum (3 cr.)

SEMR 1110 - Creative Thinking & Problem Solving (3 cr.)

Description

Pathways 2 freshmen level course inter-disciplinary course taught by 5 instructors over 2 sections using a modular approach to themes and content.

The course examines the nature of creative thinking, problem solving and innovation, across a variety of contexts and disciplines, and seeks to awaken and foster students' creativity, as something innate in all of us. Students will participate in a variety of assignments and mini-projects over the course of the semester with both individual and group work, focusing on relevant and engaging real-life problems. The course brings a multi-disciplinary, modular

approach to an examination of creativity as a 21st century skill vital for students in all fields of study.

SEMR 2010 - Core Seminar (3 cr.)

SEMR 2099 - Selected Topics in the Humanities (3 cr.)

SEMR 3099 - Core Seminar (3 cr.)

SEMR 4018 - East-West Dialogue: Cross-Cultural Perceptions and Reflections (3 cr.)

Description

This course provides a unique opportunity for students at AUC to share their educational experience with students in the west. The medium for this shared experience will be videoconferences held over the Internet with university classes in the United States and other Western countries. For each videoconference, we will be reading the same texts as the students at our partner institutions. The videoconferences provide not only the medium for the shared component of this course; they also suggest its substantive theme. For, while we encounter the apparent cultural other over the Internet, we will be exploring with them the question of our relationship to the other- especially how our perceptions of the other have developed over time and how they continue to influence the political interaction between "East" and "West" today.

Notes

SEMR 4018 cannot be taken as a capstone class "within the major" by political science students.

SEMR 4028 - The Arab Spring in Arab Eyes: Perceptions and Reflections from the Arab World (3 cr.)

Description

This videoconference dialogue course offers a comparative view of the 2011 Egyptian Revolution in relation to the Arab revolts that have swept the region since the beginning of 2011, in what became known as the Arab Spring. This course shall use an interdisciplinary approach to explore the social, economic, political and cultural contexts that led up to these popular uprisings. In this light, AUC will be holding videoconferences with various partner universities and institutions in order for the class to share perspectives and first-hand experiences relating to the Arab Spring with the partners. Specific readings will be assigned by AUC and the partnering universities, offering a general introduction of the countries that will be

studied and a specific background with regards to the linkage these countries/geographical areas have with the Arab Spring. This is an interdisciplinary course that can be relevant to students from different backgrounds and disciplines, especially those that have an interest in contemporary Middle East issues.

SEMR 4038 - South-South Dialogue: Perceptions and Reflections from the Global South (3 cr.)

Description

This videoconference dialogue course aims at offering a comparative view of and a fresh perspective on the 'Global South.' The course shall use an interdisciplinary approach to explore the social, economic, political and cultural contexts of some of the countries/regions that constitute what is known today as the 'Global South' in an attempt to outline the commonalities as well as the differences that exist within this global conglomerate of nation-states. In this light, AUC will be holding videoconferences with various partner universities and institutions in order for the class to share perspectives and first-hand experiences relating to the themes and topics of discussion with the partners. Specific readings will be assigned by AUC and the partnering universities to have a general introduction to the countries that will be studied and a specific background on the linkage these countries/geographical areas have with the Global South as an economic and a political amalgam. This is an interdisciplinary course that can be relevant to students from different backgrounds and disciplines, especially those that have an interest in contemporary development issues.

Data Science

DSCI 1411 - Fundamentals of Data Science I (3 cr.)

Description

Introduction to the fundamentals of the data science domain. Fundamentals of the R programming language and related tools for usage in Data Science. Problem Solving using R. Basic statistics, data gathering, preparation, and analysis, data visualization, case studies, and some ethical issues.

DSCI 2410 - Fundamentals of Data Science II (3 cr.)

Prerequisites

DSCI 1411 or MACT 2222

Description

Fundamentals of Python programming in the context of Data Science with a focus on relevant packages. Coverage of techniques for database handling, data manipulation, visualization and summarization. Study of statistical inference including confidence intervals, hypothesis testing and goodness of fit tests. Applications in Business.

DSCI 2411 - Data Visualization (3 cr.)

Prerequisites
DSCI 2410 and (MACT 2222 or MACT 3223 or MACT 3224)

Description

The amount and complexity of information produced in science, engineering, business, and everyday human activity is increasing at staggering rates. The course discusses visual representation methods and techniques that increase the understanding of complex data. Good visualizations not only present a visual interpretation of data, but do so by improving comprehension, communication, and decision making. In this course, you will learn how the human visual system processes and perceives images, good design practices for visualization, tools for visualization of data from a variety of fields, and programming of interactive visualizations using 3D.

DSCI 3411 - Fundamentals of Simulation (3 cr.)

Prerequisites
DSCI 1411 and MACT 2132 and (MACT 3223 or MACT 3224)

Description
This course is an introduction to fundamental tools in designing, conducting, and interpreting simulation experiments. Topics covered include Random number generation; Continuous, discrete, and rare event simulations. Variance reduction techniques, Bootstrap and Jacknife; Simulation; Markov Chain Monte Carlo. The course includes an applied project (a thorough application of simulation to real-world problems such as finance, statistics) using computer programming language such as R or Python).

DSCI 3413 - Biostatistics (3 cr.)

Prerequisites
MACT 4231

Description
This course is an introduction to important topics in biological, medical, health, and environmental statistical concepts and reasoning. Topics include: Introduction to Biological data Processing and Analysis, Hypothesis testing, nonparametric tests, Logistic regression, Poisson regression, Statistical methodologies in analysis of survival data (Kaplan-Meier estimator, Cox's proportional hazards models, time-dependent covariates, multiple failure outcomes). Typical biomedical applications, including clinical trials. The course includes an applied project using computer programming language such as R or Python.

DSCI 3415 - Fundamentals of Machine Learning (3 cr.)

Prerequisites
(DSCI 2410 or CSCE 1101) and (MACT 3223 or MACT 3224)

Description
Data Preparation and Preprocessing, Feature Extraction and Engineering, Supervised Learning Methods including Probabilistic Classifiers (Naive Bayes and Bayesian Networks), Rule-based Methods (Decision Trees and Random Forests), Instance Based Learning (KNNs), Support Vector Machines, and Introduction to Neural Networks, Unsupervised Learning Methods including k-means Clustering, MLE, Expectation Maximization, and Affinity Propagation.

Cross-listed
CSCE 3602
When Offered
Offered once a year.

DSCI 4411 - Fundamentals of Data Mining (3 cr.)

Prerequisites
DSCI 3415 or CSCE 3602

Description
Introduction to the fundamental concepts of data mining, motivation for and applications of data mining, text and web mining, and survey of techniques and models. Topics include: data pre-processing, frequent pattern mining, clustering, classification, and case studies using data sets taken from real-life applications, and use of data mining software.

Cross-listed
CSCE 4605

DSCI 4412 - Introduction to Big Data Technologies (3 cr.)

Prerequisites
(DSCI 1411 or CSCE 1101) and (DSCI 2410 or MACT 2222 or MACT 3223 or MACT 3224)

Description
The course introduces Big Data problems and associated frameworks and technologies. First, the course motivates the topic using real-world big data problems. Second, it sheds light on handling big data, from data collection, to monitoring, storage, analysis and reporting. The course also includes programming models used for scalable big data analysis. It also introduces one of the most common Big Data frameworks, namely Hadoop, in addition to the Map-Reduce Programming Model. Finally, it solves sample case studies using the covered Big Data analytics tools.

DSCI 4413 - Analysis of Categorical Data (3 cr.)

Prerequisites
(MACT 2132 or ECON 3061) and (MACT 3223 or MACT 3224 or ECON 2081)

Description
The analysis of discretely measured responses such as counts, proportions, nominal variables, ordinal variables, discrete interval variables with few values, continuous variables grouped into a small number of categories, etc. Topics include: Detection of outliers in categorical data; Inference and distributions for discrete data; Inference for contingency tables; Generalized linear models for count data; Models for binary and multinomial response (logistic regression, Poisson regression, Loglinear models); Classification and regression trees; Cluster analysis for categorical data; The course includes an applied project using computer programming language such as R or Python.

DSCI 4415 - Advanced Machine Learning (3 cr.)

Prerequisites
DSCI 3415

Description
Perceptron and multilayer neural networks, Gradient descent, Back-propagation, Convolutional Neural Network (CNN), pooling layers, CNN applications, Recurrent Neural Networks (RNN), vanishing gradient problem, case studies: object detection, and stock price estimation, GANs.

DSCI 4416 - Capstone l (Data Science Senior Project l) (1 cr.)

Prerequisites
Senior standing

Description
A capstone project divided between two courses DSCI 4416 and DSCI 4417. With the approval of the advisor, topics/data in an area of applications are selected by groups of 1 to 3 students who have common interests in the same area of application. A preliminary data examination, pre-processing, and exploratory data analysis are carried out on the selected data. Students will decide on the data science techniques, models, and methods to be used for the analysis. Students will submit a brief written proposal specifying their plan of work that they will follow in DSCI 4417.

DSCI 4417 - Capstone II (Data Science Project II) (2 cr.)

Prerequisites
DSCI 4416

Description
This is a continuation of DSCI 4416, where students will implement their plan for the completion of the project. Students will develop and write well-documented computer programs to illustrate the iterative process of Data Science and business solutions are sought. The students will submit a carefully written project. The project is then submitted and presented orally to the advisors.

DSCI 4930 - Selected Topics in Data Science (3 cr.)

Prerequisites
Consent of instructor.

Description

Topics chosen according to interests of students and faculty.

When Offered
Offered occasionally.

DSCI 4950 - Industrial Training (1 cr.)

Prerequisites
Consent of department chair or program director.

Description

This course consists of participation in a full-time or part-time internship experience, related to the student's field of study under the supervision of both an approved internship provider and a faculty adviser. This culminating course provides practical, hands-on training in a relevant industry to enhance classroom learning and allows senior students to apply the knowledge and skills they have acquired in their program to real-world problems.

When Offered
All semesters.

DSCI 4980 - Senior Thesis (3 cr.)

Prerequisites
Restricted to seniors.

Description
The Senior Thesis serves as a culminating course that allows senior students to put together the knowledge and skills they have acquired in their program. Students work under the direction of a faculty adviser to plan and conduct research on a topic of interest. The senior thesis could be

an application of data science in various domains such as business, computer science, mathematics, sciences (biology, physics, chemistry) or engineering. This research effort begins with creative inquiry and systematic research. It culminates in a written thesis and an oral defense.

When Offered
Offered in Fall and Spring.

Economics

ECON 1099 - Selected Topics for Core Curriculum (3 cr.)

Prerequisites
RHET 1010

Description
This course introduces the concept of economic rationality while exploring applications of this logic to historical and contemporary problems facing individuals, firms, and societies. The course will explore the fundamentally economic nature of the human condition specifically addressing issues such as scarcity, public goods, poverty and inequality, environmental conservation, underground markets, and health care.

When Offered
Offered in fall and spring.
Notes
This course does not count as part of Economics major or minor requirements.

ECON 2011 - Introduction to Microeconomics (3 cr.)

Description
Fundamental economic concepts and methods of economic analysis with emphasis on microeconomic issues. Analyzes basic principles of market economics including resource allocation, opportunity cost, core elements of demand and supply, market equilibrium, elasticity, pricing, market structure, and trade exchange. Labor and capital markets, market efficiency, regulation, and social welfare implications.

When Offered
Offered in fall and spring.

ECON 2021 - Introduction to Macroeconomics (3 cr.)

Description
Fundamental economic concepts and methods of economic analysis with emphasis on macroeconomic issues. Analyzes aggregate economic activity in relation to the level, stability and growth of national income. Topics analyzed include the determination and effects of national income, consumption, investment, unemployment, inflation, interest rates, and how these may be influenced by monetary, fiscal and other policies.

When Offered
Offered in fall and spring.

ECON 2051 - Economic History of the Modern Middle East (3 cr.)

Description
Historical survey of the economic conditions, systems, and institutions of the Middle East with special emphasis on the period 1800-1945.

When Offered
Offered in fall and spring.

ECON 2061 - Mathematics for Economists I (3 cr.)

Prerequisites
MACT 1111 or equivalent.

Description
Algebraic methods. Calculus of a single variable. Composite functions, limits and asymptotes, continuity, simple and implicit differentiation, Taylor's theorem, maxima and minima and points of inflection, logarithmic and exponential functions. Introduction to integral calculus. Applications to economic theory and business finance.

Students cannot take both MACT 1121 and ECON 2061 for credit.

When Offered
Offered in fall and spring.

ECON 2081 - Statistics for Economists (3 cr.)

Prerequisites
MACT 2222 or DSCI 1411

Description
The course covers descriptive and sample inferential statistical techniques, including main descriptive statistics and data sources and types. Topics include point estimation and statistical estimators' desirable properties, hypothesis testing, correlation, and analysis of variance (ANOVA). Applications in Economics and Business are emphasized.

When Offered
Offered in fall and spring.
Notes
Students who have successfully completed MACT 3211 and MACT 3223 can have the two courses substitute for ECON 2081.

ECON 3011 - Intermediate Microeconomic Theory (3 cr.)

Prerequisites
For Economics students ECON 2011 and ECON 3061

For Actuarial science students ECON 2011 and (MACT 2132 or ECON 3061)

Description
Preferences, utility theory, and derivation of consumer demand. Convergence conditions in consumer choice. Slutsky decomposition. Supply, cost structure, factor inputs, and technology. Properties of production functions including the Euler Theorem. Monopoly, duopoly (Bertrand and Cournot), oligopoly, monopolistic, and competitive markets. The extent of market entry. Labor choice, the capital asset pricing model, and technological innovation. Introduction to game theory. General equilibrium and welfare economics.

When Offered
Offered in fall and spring.

ECON 3021 - Intermediate Macroeconomic Theory (3 cr.)

Prerequisites
ECON 2021 and (ECON 2061 or MACT 1121).

Description
This course covers aggregate economic behavior using Keynesian and Neoclassical macroeconomic analysis. Various theories of how a nation's income, employment and price level behave under static and dynamic conditions are examined. Topics covered include: income determination, unemployment, price stability, budget deficits, balance of payments equilibrium and economic growth, in addition to the impact of fiscal, monetary and exchange rate policy on macroeconomic performance.

When Offered
Offered in fall and spring.

ECON 3041 - Monetary Economics (3 cr.)

Prerequisites
FINC 2101 plus ECON 2021 and ECON 2011

Description
This course emphasizes the evolution of money, the payment system and the commercial banking. The role of central banks, use of monetary tools, the interaction between banking sector and financial markets in impacting domestic macroeconomic performance and the global economy. Topics include: monetary theory and policy; central banking; management of the banking system; financial regulations; and the nexus between monetary policy, financial markets and macroeconomic performance. The course combines theoretical formalization with empirical investigations.

When Offered
Offered in fall and spring.

ECON 3053 - Economic Development (3 cr.)

Prerequisites
ECON 2021 and ECON 2011

Description
Major economic problems of developing countries. Alternative explanations of underdevelopment and theories of development. Major domestic and international aspects of development including population growth, capital accumulation and international economic relations. Sustainable development.

When Offered
Offered in fall and spring.

ECON 3054 - Environmental and Natural Resource Economics (3 cr.)

Prerequisites
ECON 2021 and ECON 2011

Description
The course discusses basic environmental and natural resource models and environmental policies as applied to energy, minerals, water, fisheries, pollution control, and sustainable development. It includes an Community Based Learning (CBL).

When Offered
Offered once a year.

ECON 3055 - The Digital Economy: Artificial Intelligence, the Future of Work and Development (3 cr.)

Prerequisites
ECON 2021

Description

This course examines the impact of digital technologies, particularly Artificial Intelligence (AI), on global economies and development, with a focus on developing countries. Key themes include the future of work, gig and cloud work, big data, digital inclusion, and the digital gender divide. It explores how AI and data-driven innovations are transforming business models, market structures, and societal dynamics, raising critical questions about equity and inequality in the digital age.

When Offered
Offered in fall and spring.

ECON 3061 - Mathematics for Economists II (3 cr.)

Prerequisites
MACT 1121 or ECON 2061

Description
The first part of the course is matrix algebra which covers the following: determinant, rank, matrix inverse, Cramer's rule, eigenvalues and eigenvectors. The second part discusses multivariate functions and partial derivatives as well as unconstrained and constrained optimization. Homogeneous and homothetic properties of multivariate functions are also discussed. The third part of the course is advanced integral calculus. Economic applications are emphasized throughout the course.

When Offered
Offered in fall and spring.

ECON 3071 - Labor Economics (3 cr.)

Prerequisites
ECON 2021 and ECON 2011

Description
The course offers a general treatment of modern theoretical and empirical labor economics. Topics to be covered include: operation of labor markets; wage determination; firm, industry and public sector labor demand; human capital investment; race and gender employment and

wage discrimination; public policy effects. The relation of labor market outcomes and attendant public policy to poverty, income distribution and economic growth is covered. (The course includes community-based learning components)

When Offered
Offered in fall and spring.

ECON 3081 - Introduction to Econometrics (3 cr.)

Prerequisites
(ECON 2081 or (MACT 3211 and MACT 3223)) and (ECON 3061)

Concurrent
ECON 3082
Description

The course covers regression methods for analyzing data in economics, including multiple regression with indicator variables, regression with heteroskedastic and correlated errors, hypothesis and diagnostic testing. The course emphasizes practical applications using econometrics software.

When Offered
Offered in fall and spring.

ECON 3082 - Practicum (1 cr.)

Concurrent
ECON 3081
Description

This practicum is structured to run parallel with ECON 3081. It is conduced as an application of the tools studied in ECON 3081 to solve practical problems using econometrics software.

ECON 3099 - Special Topics in Economics (3 cr.)

Prerequisites

Pre-requisites vary depending on the topic of the course.

Description
Guided reading and research of special topics chosen by the instructor in theoretical policy or applied economics.

When Offered
Offered occasionally.
Repeatable
May be taken for credit more than once if content changes.

ECON 4000 - Independent Study (1-3 cr.)

Prerequisites
Consent of instructor and unit head, senior standing.

Description
Guided reading, research, and discussion based on a subject of mutual interest to a student and faculty member.

When Offered
Offered in fall and spring.

ECON 4002 - Senior Thesis (3 cr.)

Prerequisites
Senior Standing.
Minimum GPA Requirement may apply.

Description
This course provides students with the opportunity to conduct original research work, in accordance with university regulation, on a selected topic of mutual interest between the student and the faculty supervisor. Individual guidance is then provided to the student on qualitative and quantitative research methodology, with the aim of producing a high-quality, original thesis. After the submission of the thesis, the student presents a defense seminar in front of a panel of faculty members. Subsequently, the thesis is approved and finalized upon the successful incorporation of faculty comments and suggestions.

ECON 4012 - Feasibility Study (3 cr.)

Prerequisites
ECON 2011 and ECON 2021

Description
This course develops the analytical tools and applied case study analysis to financial and economic project evaluation. Cost-benefit analysis, shadow pricing, multiple criteria for project feasibility, economic worth of investment projects, cash flow discounting, and financial and economic rates of return. Applications to real life cases including investment and development projects as well as entrepreneurship ventures and risk assessment.

When Offered
Offered occasionally

ECON 4013 - Behavioral Economics (3 cr.)

Prerequisites
ECON 2011

Description
The course will expose students to the science of behavioral economics. It will cover a range of topics including individual decisions, markets and public choice. Topics include extensions and shortcomings of the rational choice model and deviations from the Expected Utility Theory; Prospect theory and preference dependence; time preferences; social preferences, behavioral trust and fairness.

When Offered
Offered in spring.

ECON 4014 - Public Economics and Policy Analysis (3 cr.)

Prerequisites
ECON 2021 and ECON 2011

Description

This course covers analysis of public policy with special focus on Egypt and the MENA Region. It discusses issues related to market failure, equity and efficiency, public goods, tax policy and externalities. The course gives students the chance to do applied policy research in this area.

When Offered
Offered in fall and spring.

ECON 4015 - Applied Econometrics (3 cr.)

Prerequisites
ECON 3081

Description
This is an application course where students use real world examples and put into practice theories they learned in statistics and econometrics courses. It concentrates on expanding students' experience of practical applications of key econometrics methods in the different fields of economics such as microeconomics, macroeconomics, labor, development, and program impact evaluation.

When Offered
Offered in fall and spring.

ECON 4031 - International Trade (3 cr.)

Prerequisites
ECON 3021 and ECON 3011

Description
International Trade Theory: Mercantilist Theory, comparative costs, and post- Ricardian theories including economies of scale and imperfect competition. Protection Theory; Effective Protection. Terms of trade, national income and the balance of payments. Fluctuations in trade. Foreign exchange markets, exchange rates and adjustment in the balance of payments. International resource movements.

When Offered
Offered in fall and spring.

ECON 4041 - Financial Economics (3 cr.)

Prerequisites
ECON 2081, ECON 3011 and FINC 2101 .

Description
This course provides a rigorous introduction to modern financial economics. It is designed to equip students with theoretical tools and practical case studies necessary to understand the dynamics of financial markets and their interaction with other spheres of the economy including asset pricing, risk management, and financial regulation schemes.

When Offered
Offered occasionally.

ECON 4050 - CopyrightX: The Economics of Copyright and Creativity (3 cr.)

Prerequisites
Minimum junior standing.

Description

The course examines ways in which the copyright system seeks to stimulate and regulate creative expression, impacting creative industries and pertinent business models. The course also critically reviews the main theories of copyright, with emphasis on the economics of knowledge production in varying contexts. Students engage with world issues and debates related to copyright and creativity, with an eye to the interests of developing countries and their position in global debates. A central question raised in the course is whether and how copyright legislation should be reformed to address new technologies, incentivize novel business models and help bridge the developmental divide. Students will gain an understanding of the basic principles of copyright and how it affects creativity and innovation in a wide variety of artistic and technical fields. While there will be reference to US law in the recorded video lectures, supplementary class discussions and reading materials will provide students with understandings of the legal copyright systems in Egypt and other countries.

When Offered
Offered in spring.

ECON 4051 - Seminar on Economic Development and Policy in the Middle East (3 cr.)

Prerequisites
ECON 2021 or Consent of Instructor.

Description

This course explores the application of key concepts relating to economic development and policy in the Middle East and North Africa (MENA). The focus is on evidence-based policy analysis in areas such as macroeconomic adjustment, population and migration policies, labor market performance, poverty and inequality reduction.

The course adopts an interdisciplinary approach, with special emphasis on cross-cutting themes in MENA development such as: sustainability and diversification in resource rich economies, gender equality of opportunity, social inclusion, decent work and regional cooperation in economic policy frameworks.

When Offered
Offered in fall and spring.

ECON 4061 - Mathematical Economics (3 cr.)

Prerequisites
ECON 3061

Description
The course starts with a discussion of quasiconcave programming (Kuhn-Tucker theorem), then moves on to linear (first- and second-order) and nonlinear difference equations. This is followed by linear and nonlinear differential equations, including stability analysis, steady-state equilibrium, convergence and phase diagrams. In addition, systems of differential equations (the saddle path) are also studied. The final component of the course is dynamic optimization covering finite- and infinite-horizon problems as well as discounting. Economic applications are emphasized throughout the course.

When Offered
Offered in fall.

ECON 4081 - Econometrics (3 cr.)

Prerequisites
ECON 3081 and concurrent with ECON 4082

Description
The first part of the course covers extensions of the classical linear model including departures from the basic assumptions of the general model: multicollinearity, autocorrelation, heteroskedasticity, endogenous regressors and GMM estimation. The second part discusses models with limited dependent variables (e.g. logit and probit models) and their applications. The third part explores panel data, covering issues related to estimation and inference in panel datasets as well as applications.

When Offered
Offered in fall.

ECON 4082 - Practicum (1 cr.)

Prerequisites
Concurrent with ECON 4081

Description
This practicum is structured to run parallel with ECON 4081. It is conduced as an application of the tools studied in ECON 4081to solve practical problems using econometrics software.

When Offered
Offered in fall.

ECON 4091 - History of Economic Thought (3 cr.)

Prerequisites
ECON 2021 and ECON 2011

Description
This course investigates the historical evolution of economic theory by examining the development of Mercantilism, Physiocracy, Classical, Marxian, Neoclassical theory, Austrian-

Keynesian and post-Keynesian economics.

When Offered
Offered in fall and spring.

ECON 4094 - Economics of Egypt (3 cr.)

Prerequisites
ECON 2021 and ECON 2011 . Junior standing or higher.

Description
This course is an application of economic tools to explore the performance, analyze major problems and propose reform agendas for the contemporary Egyptian economy. Among the topics discussed are the path of economic development, macroeconomic performance, sectorial behavior, and institutional restructuring since the Nasser era and up to the present time. The course gives the students a chance to conduct applied research and to design policy solutions related to challenges facing the Egyptian economy.

When Offered
Offered in fall and spring.

ECON 4099 - Seminar: Selected Topics in Economics (3 cr.)

Prerequisites
Pre-requisites vary depending on the topic of the course

Description
Guided reading, research, and discussion of specific topics chosen by the instructor in theoretical policy or applied economics.

The course is offered as a research based, writing intensive course.

When Offered
Offered occasionally.
Repeatable
May be taken for credit more than once if content changes.

ECON 5200 - Independent Study (1-3 cr.)

Description
Guided reading, research, and discussion based on a subject of mutual interest to a student and faculty member. Must obtain the approval of the Faculty Advisor of Graduate Program and Chair of the Department.

ECON 5201 - Research Workshop (3 cr.)

Prerequisites
ECON 5211, ECON 5221 and ECON 5281.

Note: Consent of professor is needed if one of the courses is to be taken concurrently.

Description
This course offers an overview of different research methods and processes, resulting in the completion and presentation of a major research paper by each student.

When Offered
Offered once a year.

ECON 5202 - Research Guidance and Thesis (3 cr.)

Description

Under the guidance of a supervisor, this course consists of the writing and the defence of a Master Thesis in Economics. Students shall formulate a research question of relevance within the field of study, choose a methodology, use concepts, theories and methods to address the research questions. The supervisor will advise the student in the research task included in the course and in the writing of the thesis.

ECON 5211 - Advanced Microeconomic Theory (3 cr.)

Prerequisites
ECON 4061

Description
Axioms of consumer preferences and rational utility representation. Derivation of Marshallian, Hicksian and Engel demands. Consumer theory under uncertainty. Advanced theory of the firm. Market structure and competition including Counot, Bertrand, and Stackelberg competition for homogeneous and differentiated products. The Envelope Theorem and its applications including Roy, Sheppard, and Hotelling Lemmas. The equilibrium number of firms and business cycle behavior. General equilibrium theory.

When Offered
Offered once a year.

ECON 5213 - Project Evaluation (3 cr.)

Prerequisites
ECON 5250 or ECON 5251 or ECON 3011 or FINC 5201

Description
Analysis of economic criteria (cost benefit analysis) applied in evaluating development projects for economic policy and planning, following a review of the project cycle from inception to impact evaluation.

When Offered
Offered in fall.

ECON 5215 - Competitive Strategy and Game Theory (3 cr.)

Prerequisites
ECON 3011 or FINC 5201 and Consent of Instructor.

Description
Analysis of competitive strategy and game theory including Nash equilibrium and its refinements. Subgame perfection, Bayesian equilibrium, and information uncertainty. Repeated games. Game theory applications to various economic themes such as in trade, labor, industry, education, stock markets, insurance, and R & D.

When Offered
Offered in spring.

ECON 5217 - Health Economics in Developing Countries (3 cr.)

Prerequisites
ECON 4061 or ECON 5282 .

Description
This course explores health economics and its unique features in relation to the developing world. Students will learn about the supply and demand for services provided by the health care sector and gain an understanding of the markets for health professionals and health care provider firms specifically extant in the developing world. The course will also explore the roles of insurance, managed care and HMO's, professional licensure, for-profit and not-for-profit provider firms, and asymmetric information problems in health care markets. Finally, the course will explore issues within the developing world pertaining to regulation, government financing of health care, and health care reform.

When Offered
Offered occasionally.

ECON 5219 - Health Care Financing (3 cr.)

Prerequisites
ECON 5282 or (ECON 3021 and ECON 3011)

Description
This course explores how health care systems in the developing world raise revenue, the advantages and disadvantages of varying methods of doing so, and how health systems strike a balance between public and private revenue sources. The course also explores how policy makers choose which services to include in publicly-financed health systems, the allocation of resources to those 'purchasing' health care, and the degree to which there is a role for competition in this realm. This course will also explore how resources are allocated to health care providers and the incentives associated with different payment methods.

When Offered
Offered occasionally.

ECON 5221 - Advanced Macroeconomic Theory (3 cr.)

Prerequisites
ECON 4061

Description
Analysis of the equilibrium and disequilibrium macroeconomic activity of an open, monetized economy with a government sector. Theories of aggregate consumption and investment behavior.

When Offered
Offered once a year.

ECON 5231 - Advanced International Trade (3 cr.)

Prerequisites
ECON 3021 and ECON 3011

Description
Analysis of topics in the pure theory of international trade. International aspects of monetary mechanisms, nature and effects of foreign investment, significance of trade theory and monetary movements for developing countries.

When Offered
Offered in spring.

ECON 5233 - International Finance (3 cr.)

Prerequisites
ECON 5221

Description
This course focuses on the fundamental open macroeconomic issues whether theoretical or empirical. Topics covered include the economics of exchange rates, models of speculative attacks, Mundell-Fleming model, regime credibility, predicting currency and financial crises, international capital flows, and international contagion.

When Offered
Offered in spring.

ECON 5241 - Financial Economics (3 cr.)

Prerequisites
ECON 4061 and consent of instructor

Description
Analysis of financial assets and institutions. The course emphasizes modern asset valuation theory and the role of financial intermediaries, and their regulation, in the financial system. State-preference theory and optimal portfolio decision mean-variance portfolio theory, measuring portfolio risk and return, Capital Asset Pricing model (CAPM), Arbitrage Pricing Theory (APT), Option Pricing Theory, the Black-Scholes formula, Asymmetric information and rational expectations, term structure of interest rates.

When Offered
Offered in fall.

ECON 5242 - Financial Econometrics (3 cr.)

Prerequisites
ECON 4081 and ECON 5241 .

Description
This course aims to advance students' understanding of modern econometric techniques related to financial issues. This course will cover frontier tools of financial econometrics and empirical finance. The interaction between financial theory and econometric analysis is emphasized. Topics include: non-normality of financial data, volatility clustering and asymmetric volatility, time series models, Vector Autoregressive (VAR) models and continuous time and threshold models. The course is also designed to train students in formulating, estimating and testing models for financial time series using EViews software.

When Offered
Offered in spring.

ECON 5250 - Economic Setting for Development I (3 cr.)

Description
This course covers the theory foundation for Economic development dealing with:

1. Microeconomic aspects pertinent to development.
2. Macroeconomic variables and issues concerned with the functioning of an economy.

Special attention is given to concepts and tools applicable to challenges facing developing countries whose economies often lack the maturity that more developed countries have in terms of institutional and policy settings.

Notes
Does not count for credit in the M.A. degree in Economics.

ECON 5251 - The Economic Setting for Development II (3 cr.)

Prerequisites
ECON 5250 or professor consent.

Description

This course covers contemporary development theory and issues viewed through the lenses of macroeconomics and microeconomics. This process will be undertaken while also ensuring that the ideas themselves are placed within a proper historical and cultural context. This course is regional and historical in nature, while also addressing more detailed issues in development as well as the manner in which economic policy can influence the development process. These issues will include, but not limited to, political stability food security, international trade, natural resource policy and population policy. Exploration of development policy will also extend beyond traditional economic analysis and also ask more distributional and normative questions pertaining to race, gender, class and the environment.

ECON 5252 - Economic Development in Middle East Countries (3 cr.)

Description
This course explores the economic structures, institutions, and policy challenges in the Middle

East and North Africa (MENA). Topics investigated include: the demographic transition, the participation of women in the workforce, regional migration, growth and structural change, poverty, inequality, and regional integration.

When Offered
Offered in spring.

ECON 5254 - Economic Growth & Development (3 cr.)

Prerequisites
ECON 3011

Description
Growth models and their limitations in developing countries, role of capital, investment, and inflation in economic development, non-economic factors, criteria, and choices of techniques in the process of development.

When Offered
Offered once a year.

ECON 5255 - Advanced Environmental and Natural Resource Economics (3 cr.)

Description
The course discusses environmental and natural resource models and environmental policies as applied to energy, minerals, water, fisheries, pollution control, and sustainable development.

ECON 5256 - Ethical Issues in Development (3 cr.)

Prerequisites
ECON 5251 or ECON 3021 .

Description
This course issues of an ethical nature that are related to the development process, decision-making and implementation of development projects. The course will first consider ethical and moral concepts and their philosophical underpinnings and review different schools of thought.

Against this background, selected issues specific to development strategies and practices will be dealt with. The course will make use of case studies to illustrate and help analyze issues of concern.

When Offered
Offered occasionally.

ECON 5257 - Economic Strategies for Sustainable Development (3 cr.)

Prerequisites
(ECON 5251 and ECON 5282) or (ECON 3021 and ECON 3011)

Description
This course explores economic strategies achieving balanced and sustainable development from Keynesian, Structuralist, and Neoclassical perspectives. Development policy concerned with short term resource allocation, medium term economic adjustments, and sustainable long term economic growth with technical progress will be studied. Comparative country studies will conclude the course.

When Offered
Offered in spring.

ECON 5259 - Research Practicum (3 cr.)

Prerequisites
Completion of at least 3 core courses.

Description
This course is a 200-hour assignment requiring that students gain extensive experience with a relevant development-related institution either locally or abroad. It is to be completed over a 4-6 week period providing students exposure and work experience in a development setting. Students are then required to prepare, under faculty supervision, a substantial research-based paper drawing on their practicum experience.

When Offered
Offered in spring.

ECON 5261 - Mathematical Economics (3 cr.)

Prerequisites
ECON 4061

Description
Introduction to economic models: models of the single sector, the trade cycle, growth with employment, medium- and long-term planning, and cyclical growth. Economic regulation, the treatment of technical progress, input-output models.

When Offered
Offered occasionally.

ECON 5271 - Advanced Labor Economics (3 cr.)

Description
The course delivers an advanced treatment of mainstream and alternative approaches to labor economics emphasizing an integration of theoretical and empirical models. Topics to be covered include the life cycle human capital models, search theoretic models, internal markets, reservation wages, migration, inequality, and poverty.

ECON 5281 - Time Series Econometrics (3 cr.)

Prerequisites
ECON 4081

Description
The course covers the theory and practice of time series econometrics, including ARMA and VAR models and their applications. Non-stationary time series is analyzed such as unit roots, co-integration and error correction model. Further topics are volatility models (GARCH models) that model the conditional variances and covariances of time series data. Forecast evaluation and model selection methods are also discussed.

When Offered
Offered once a year.

ECON 5282 - Empirical Methods in Development Economics (3 cr.)

Description
The course aims to ensure that students understand, master and apply quantitative techniques used in modeling and decision-making related to development. More specifically, the course introduces the basic concepts of quantitative approaches to decision making. It also utilizes wide applications of quantitative techniques to analyze a variety of economic and social problems. Topics include: regression analyses, factor and cluster analysis, panel data and qualitative models.

When Offered
Offered once a year.

ECON 5291 - An Advanced History of Economic Thought (3 cr.)

Description
This course will explore, using bothprimary and secondary sources, the ideas put forth by the great economic thinkers. Class discussion will center on the immediate social impact of these ideas and the factors influencing the course of their evolutionary or revolutionary change over time. Further, this class will encourage students to think critically about the writings of the great economists and explore the possibility that ideological bias is an inexorable feature of science.

When Offered
Offered occasionally.

ECON 5299 - Advanced Topics in Economics (3 cr.)

Prerequisites
Consent of instructor

Description
Guided readings, research, and discussion in special topics in Economics. May be taken for credit more than once if content changes.

When Offered
Offered occasionally.

Education

EDUC 1099 - Selected Topics for the Core Curriculum (3 cr.)

Description
A course that addresses broad intellectual concerns and is accessible to students from any major or class level. The course is offered as part of the Freshman Level of the Core Curriculum.

EDUC 2011 - Education and Society (3 cr.)

Description
Given our unique life experiences, we all have different worldviews regarding how education serves humanity and how it impacts the development of our societies. This introductory course will shed lights on the relationship between educational leadership and the sociology of education. Specifically, it will introduce you to a sustained inquiry into the social, cultural, historical and contemporary dynamics of education in the 21st century. You will (a) explore how formal and informal education relate to local, regional, and global trends; (b) examine, critique, and explain education in light of its origins, major influences, and consequences using a model that employs disciplines form the humanities, social sciences, and STEM (science, technology, engineering, mathematics); (c) create potential solutions that address local and global educational issues; and (d) construct meaning from readings about what education is and how culture influences teaching and learning.

EDUC 2021 - Fundamentals of Teaching and Learning (3 cr.)

Description
The overall goal of this course is to help students gain an understanding of the fundamental concepts of how students learn and how teachers teach. The former is achieved through a study of major classical and contemporary learning theories, while the latter is achieved through a study of knowledge of the fundamental teaching theories and what it takes to be an effective teacher. The connection between learning theories and teaching strategies will be made to link learning and teaching together. Students will be introduced to the main theories derived from

neuro-scientific research. This focus will help students understand the roles of classroom teachers and how this should be based on explicit knowledge of learning theories. In addition, the basics of classroom assessment and lesson planning will be covered.

EDUC 2041 - Education in Historic & Modern Cairo (3 cr.)

Description

How were Egyptian citizens educated during different historical periods? This course explores the answer of this question through the experiential learning pedagogy based on Kolb's theory of learning that requires concrete experience, reflective observation, abstract conceptualization and active experimentation. With this theoretical background, the course includes field trips to "Historic Cairo" and its distinguished masterpieces of medieval art and architecture, museums, churches and mosques of central significance in Egyptian history. The overall goal of this course is to help undergraduate students take advantage of the various learning opportunities that are available in the rich laboratory of Cairo through a comprehensive interdisciplinary course. The course brings together students from various disciplines, such as engineering, arts, and the sciences.

EDUC 2099 - Selected Topics in Core Curriculum (3 cr.)

Description

This course addresses contemporary issues in education and is open to all students regardless of major. May be taken more than once if content changes.

EDUC 3011 - Educating Children and Youth for a Sustainable Future (3 cr.)

Description

The natural resources available on planet earth are declining due to people's misuse of these resources. This course presents the knowledge, skills and dispositions children and youth need in order to successfully meet the challenges and opportunities that await them as agents of change in a sustainable global development context, to preserve the planet's resources. Through this course, students will achieve an understanding of education for sustainable development (ESD), how is it defined, why it is needed and how to infuse it into the educational system. ESD is perceived as a need for this generation and future generations in Egypt and elsewhere, for thinking about a future in which environmental, societal, and economic considerations are balanced, in the pursuit of development and improved quality of life.

EDUC 3021 - Designing and Assessing Instruction with Digital Technologies (3 cr.)

Description

Drawing from international trends in course design and redesign, this course focuses on the importance of a carefully thought-out instructional design (ID) process and aims at the application of assessment practices in any course format (face-to-face, blended, and online). In the course, we will go through the process of establishing achievable teaching objectives and measurable learning outcomes at the course level, and through a range of assessment options, we will decide what types of evidence will provide information as to whether the learners are meeting those objectives and outcomes. Students will follow a systematic approach to create their own instructional activities and to align assessment with the help of digital technologies (e.g., Web 2.0 tools, Virtual Reality technology...)

This is a project-based course, in which active and collaborative participation in the course activities is required. Thus, participants will be encouraged to complete readings, engage in face-to-face and online discussions, and prepare a technology-enhanced project that is relevant to their learning/teaching context, both individually and in groups.

EDUC 3031 - Role of Civil Society Organizations in Global Education and International Development (3 cr.)

Description

This course explores the changing roles of civil society in education and development, with a special emphasis on intergovernmental organizations, NGOs, community-based associations, and grassroots movements. The course introduces students to different educational ideologies for analyzing the relationships among civil society, citizenship and human development. Included are the corresponding themes of: democratic citizenship; national and global models of education for a competitive global free market; local and global network of human rights and peace education; and environmental movements and education in a global civil society. This is an interdisciplinary course for students interested in philosophical, social, economic, political or global studies.

EDUC 4031 - Gender and Education (3 cr.)

Description

This class addresses the changing, but continuing, patterns of marginalization, power, authority, and unequal expectations, opportunities, and treatment through educational and social systems

for all students, female and male. The focus is on historical, contemporary, and cultural contexts. A number of ways will be explored on how gender is played out, structured, reproduced and transformed in contemporary formal settings (classrooms from preschool to university) and informal settings (non-classrooms). Foundational issues to be investigated include: how gender complicates disciplinary knowledge (and vice versa), the (de) constructing and reinforcing of genders (via science, schooling, and social expectations), implications for teaching, society, and social justice as well as relationships among different cultural categories. Different narrative sources will be utilized, including biography, popular culture, primary source materials, and artifacts. This will be a multi-disciplinary class with material drawn from sociology, gender & women's studies, history, and other fields, with specific application to educational policy and practice.

EDUC 4098 - Selected Topics for Core Curriculum (3 cr.)

Description
Participants in this seminar will consider a significant current educational issue from multiple academic and professional perspectives. Open to all senior students regardless of major.

Repeatable
Can be taken more than once only if the topic is different.

EDUC 5201 - Foundations of Educational Research (3 cr.)

Description
The fundamental aim of this course is to assist MA candidates to develop the knowledge and skills essential to the identification and critical evaluation of educational research relevant to their professional interests and contexts. In the process, learners will become familiar with fundamental concepts, principles, and techniques of educational research, differentiate between qualitative and quantitative educational research, distinguish between good and poor research, and apply basic research skills to develop research proposals.

Notes
This pre-requisite course must be taken in the first or second semester of study.

EDUC 5202 - Social Foundations of Education (3 cr.)

Description
Using a multidisciplinary approach, the course will examine the underlying issues within contemporary educational policies, practices and theories. The course will draw on humanities and social science disciplines to foster the development of MA student's interpretive, normative and critical perspectives on education both inside and outside of schools. It will also assist students as they explore the relationship of education (formal and informal) to societal, regional and global issues.

Notes
This pre-requisite course must be taken in the first or second semester of study.

EDUC 5203 - Introduction to International & Comparative Education (3 cr.)

Description
This course introduces MA students to the origins and development of the field of international and comparative education. The course addresses current educational concerns both on local and international levels, such as purposes of schooling, educational access and opportunity, education accountability and authority, teacher professionalism, and impact of globalization on education. The course also explores the relationship between education and national development, and deepens student's understanding of methodological approaches to comparative and international education research.

EDUC 5204 - Human Development & Learning Theory (3 cr.)

Description
This course provides an introduction to human growth and development from infancy to adulthood. Emphasis is placed on the integration of various aspects of development, including cognitive, linguistic, social-emotional, and motor. Students will study theoretical and empirical advances in learning, including neuro-cognitive research, to understand learning from formal (school, university) perspectives, as well as social, informal perspectives.

EDUC 5205 - Foundations of Instructional Practice (3 cr.)

Description
This course provides an introduction to methods of instruction at primary, secondary, and

higher education levels. While pragmatic concerns such as classroom management, lesson planning, differentiation, modes of learning, and standards-based instruction will all be covered, the course will emphasize theories and empirical evidence regarding various strategies, techniques, and philosophies of instruction. Curriculum development, assessment, and student-centered learning approaches will be covered.

EDUC 5211 - Globalization, Development, and Educational Reform in the Arab World (3 cr.)

Description

This course surveys policy and reform issues of education in the Arab World, with focus on specific initiatives and how they fit into the context of policy, culture, and economics. The course will examine traditional and non-traditional methods of teaching, school organization, and educational policy-making and will seek to understand how globalized reform initiatives, often instigated through development projects, have impacted those methods. Resulting modes of governance, policy and practice will be analyzed.

EDUC 5212 - Comparative Gender, Youth, and Human Development Policy (3 cr.)

Description

This course will explore gender, youth, and human development policy from a global perspective. The course will examine issues of gender with regard to social and education disparities, as well as women's rights in comparative and international perspectives. It will also target the changing roles of youth in society and their rights and responsibilities. Particular attention will be given to the relationships between educational practices, systems, and policies and their relationship to life-work outcomes.

EDUC 5213 - Educational Evaluation & Assessment (3 cr.)

Description

Contemporary educators are expected to know how to assess and evaluate the knowledge and performance of students, teachers, staff members, and themselves. In today's reform-minded, information-based society, practitioners must be able to frame problems accurately, collect appropriate data, and analyze the information using acceptable approaches. This course will use a comparative approach, to help MA students learn to: (a) frame a problem using various approaches; (b) identify appropriate data; (c) analyze data; and (d) develop and evaluate

alternative solutions to a defined problem. Students will also learn how to utilize current models and methods of assessment in educational contexts.

EDUC 5214 - Human Rights-based Education (3 cr.)

Description

This course surveys issues and specialized topics in human rights-based education policy, practice, and research. The course focuses on issues of educational availability and access in terms of gender, location, and fees; additionally, it focuses on access to education in conflict areas. The course also focuses on the rights of children in both formal educational environments and within communities. The course will explore these issues through cases and empirical research.

EDUC 5215 - Educational Policy Analysis (3 cr.)

Description

This course explores the policy cycle and contextual factors that influence decisions, by enabling and refining student's analytic skills. Topics will include the analysis of how policy is created; the ideal and actual forms of the policy cycle; how to create sustainable feedback systems; how to use appropriate analytic approaches to the study of data; and how to use appropriate analytic techniques to analyze policy choices.

EDUC 5216 - Research-Based Comparative Approaches to Educational Reform (3 cr.)

Description

Following an interdisciplinary approach, the course focuses on the reform of educational policy and practices at national, regional, and international levels. The course aims at acquainting students with educational reform trends and approaches including sector reform and school-based reform; developing students' analytical skills of reform initiatives and outcomes in different countries; developing students' research skills related to the monitoring and evaluation of reform projects; and promoting the approach of lifelong learning among students as researchers and reflective practitioners.

EDUC 5217 - Strategic Educational Planning and Development (3 cr.)

Description
Education and development are often considered strategically together. This course will examine, from an educational lens, the implications of educational planning in a country's development. In particular, the course will examine the role of educational policy on the economy, cultural hegemony, and politics. Students will study human capital theory in relationship to various educational strategies. Students will also understand the economic tradeoffs in education as a strategy for development.

EDUC 5221 - Transformational Education (3 cr.)

Description
Effective leaders recognize the interrelated nature of organizations and their environments. They understand that they need different leadership behaviors for different situations and contexts and are aware of how various constituents (i.e., administrators, teachers, parents, and students) interact within and across the domains of an organization. Finally, effective leaders behave in ways that nurture a desire in others to increase their individual and collective effectiveness. This course looks specifically at leadership in multiple educational venues within a global setting by looking at the cognitive (theoretical), intrapersonal (characteristics of a leader) and interpersonal (relational & contextual) aspects of leadership. This includes looking at organizations, team leading, formal and informal leadership.
In addition, this course will introduce students to leadership theories which they will use to analyze organizational structures and determine the leadership style needed to transform educational settings. Specifically, Students will examine elements of leadership and explore how effective leaders create successful school change and innovation. Students will analyze case studies and leadership styles. The course content and activities encourage and promote students to be educational change agents. Students will study leadership traits, negotiation skills and change strategies in their own leadership and consider the effectiveness of these characteristics in different circumstances and/or cultural settings. Attention will also be directed to using facilitative power to make second order changes.

EDUC 5222 - School Governance and Management (3 cr.)

Description
This course examines the allocation of resources to support both student and faculty learning and the effective management of school operations to insure a safe and secure environment, conducive to learning. The course will cover the application of research on effective schools,

models of supervision and leadership theory and implementation; it will also investigate the interconnectedness of instructional supervision, educational leadership and school governance and management.

EDUC 5223 - Organizational Theory and Educational Institutions (3 cr.)

Description

Educational organizations - schools in particular - are complex environments that are considered to have competing demands. This course seeks to identify the organizational facets of educational institutions that either enhance or obstruct meaningful educational reform. By examining sociological, political, economic, and technical features of educational organizations, this course will expose opportunities for leadership-based change in these organizations.

EDUC 5224 - Research-based Instructional Leadership (3 cr.)

Description

The task of improving teaching and learning in the classroom is one that all school administrators face. This course explores the theory and practice of instructional supervision within a school culture and its critical importance to student achievement. It focuses on the principal as the instructional leader in the school.

EDUC 5231 - Online and Blended Learning Design and Instruction in Developing Countries (3 cr.)

Description

Online and blended learning have become commonplace instructional modalities all over the world. Integrating them into developing countries and Arab contexts presents its own challenges and opportunities. The first part of the course will focus on research related to the latter. The main part of the course will focus on design, assessment, and teaching principles for online and blended learning. Students will engage in real-world projects that involve the application of these principles to their own contexts. The final part will discuss the implications of some trends such as MOOCs and social media for instruction in the region. The course is relevant for educators and designers in both K-12 and higher education settings.

EDUC 5232 - Literacy, Learning and Education (3 cr.)

Description
The primary goal of this course is to introduce new views of what literacy and learning are, and the consequent changes in their relationship to education.Topics will include: differentiating elite from mass literacy; the role of literacy in schooling; the application of these concepts to instruction in classroom settings (Pre-K-12 and higher education); and how the continuing evolution of these concepts may change their relationship to education yet again in future.

EDUC 5233 - Action Research (3 cr.)

Prerequisites
EDUC 5201

Description
This course will lead students into action research, a form of self-reflective systematic inquiry by practitioners on their own practice. The process of action research will assist students in assessing needs, documenting the steps of inquiry, analyzing data, and making informed decisions that can lead to desired educational outcomes. The course will equip students with research tools that can be used to contribute to school renewal and instructional improvement. Students will also learn about the four types of action research: collaborative, critical, classroom, and participatory. Finally, the course will critically examine a selected number of case studies from various regions.

EDUC 5234 - Reaching Diverse and Underserved Learners (3 cr.)

Description
Traditional methods of teaching have been unable to meet the needs of all learners. Students with physical and learning disabilities, students for whom the language of instruction is not their first language, and students who come from impoverished backgrounds all tend to struggle to learn and demonstrate academic proficiency in traditional models of education. This course explores the methods of differentiation and the theoretical foundations of special education, second language instruction, and education of impoverished students. It provides an introduction to each of these areas by providing explicit classroom strategies while providing the underlying theoretical conditions for these strategies.

EDUC 5236 - Education for Sustainable Development (3 cr.)

Description

The overall goal of this course is to help MA candidates achieve a deeper understanding of Education for Sustainable Development as a societal need for Egypt with an emphasis on STE2 AM education. We will examine the goals, strategies, and elements of Education for Sustainable Development as we consider "What is Education for Sustainability?" Our work will focus on using the "lens of sustainability"-- considering the overlapping perspectives of the environment, the economy, equity and social justice- to frame learning in formal and non-formal/ informal education settings and partnerships and collaboration between them. What knowledge, skills and dispositions do students need in order to successfully meet the challenges and opportunities that await them as agents of change in an ESD global context? What pedagogies could be utilized to present ESD issues in an interdisciplinary manner bringing together disciplines of science, technology, engineering, arts, humanities, and mathematics? Through exemplars and case studies, participants will be provided with opportunities to critically evaluate ESD policies and practices through an international lens focusing on theories and pedagogical practices. Furthermore, there will be analysis to different curricula design for sustainability components and to the challenges they encounter. This will help focus on how to develop interdisciplinary learning material that is the core essence of ESD and STEAM education and relevant to the community local needs in Egypt.

EDUC 5238 - Programs and Environments for Inclusive Education (3 cr.)

Description

This course presents theoretical information as well as practical examples of programs and environments that can benefit all learners. Methods of instructional planning will be covered, with a focus on how teachers can provide enriched learning environments for all learners.There is a focus on both the cognitive and social-emotional development of learners, in order to enable the educators enrolled in the class to create a cohesive community of learners in their future classrooms.

EDUC 5241 - Pedagogy & Theory of Modern Teaching & Learning in Higher Education (3 cr.)

Description

This course provides students with an overview of trends, theories, principles, and practices in higher education instruction, including online learning and associated instructional models. Beginning with a focus on adult learning theory, as well as learning theories especially

associated with traditional university-aged students, the course will provide both general and disciplinary-specific trends in content delivery and skill development. The course will examine new models of delivery in contexts of both learning theories and institutional missions. Students will conduct research projects that involve classroom observation, student outcome data analysis, and teacher and learner interviews, all with the purpose of providing specific guidance on instructional improvement from both and an organizational a classroom perspectives.

EDUC 5242 - Theories of Student Development in Higher Education (3 cr.)

Description

This course examines patterns of intellectual, identity, and social development among older adolescents and adults, and how these relate to learning and development of desired outcomes of postsecondary education. It is designed to introduce graduate students to major theoretical perspectives, the research based on these theories, and how this body of theory and research can be used to guide the design of educational policies and practices in colleges and universities to promote college student learning and development.

EDUC 5243 - Policy and Administration in Higher Education (3 cr.)

Description

This course provides an overview of both the organizational theories associated with higher education and the trends and practices in policy and administration of higher education. The course includes the role of governance and how it influences organizational structure, policy, and leadership. In addition, the course provides comparative knowledge on the impact of policies and organizational structures on resource allocation, learning outcomes, student satisfaction, labor market satisfaction, and other characteristics. Along with certain traditional elements of college and university life, we will be examining powerful forces radically altering post-secondary education.

EDUC 5250 - Fundamentals of Curriculum Design, Theory, & Practice (3 cr.)

Description

This course is designed to provide students with a comprehensive orientation to curriculum theory from both historical and contemporary contexts and as it applies to practice in design. Students will understand the foundations of the field through a global survey of curriculum theorists. Using contemporary and global understandings of curriculum as applied in governmental educational systems, students will also learn about strategies and best practices in curriculum development. Specific attention will be given to principles of curriculum design for all levels of student learning.

EDUC 5259 - Selected Topics in International & Comparative Education (3 cr.)

Description
This course presents students with major education debates, practices and challenges which face educators around the world. The course addresses both persistent and emerging themes in learning, teaching, policy making, and educational leadership in schools and in higher education. The course may be taken twice if the topic is different.

EDUC 5265 - Applied Projects in Inclusive Education (3 cr.)

Prerequisites
PSYC 5205 , EDUC 5204 , EDUC 5238

Description
This is a hands-on course that will help students integrate theoretical acquired knowledge into their professional practice. The course will enhance the student's ability to utilize reflective, experiential, and pragmatic pedagogic approaches in order to teach for diverse learners effectively. The course aims at promoting the facilitation of learning through peer observation, critical friends groups, and cognitive coaching. The 5265 course should be taken in the final semester of the diploma, after the student has completed PSYC 5205, EDUC 5204, and EDUC 5238. It can be taken concurrently with either PSYC 5255 or EDUC 5232

Cross-listed
PSYC 5265

EDUC 5281 - Supervised Fieldwork (3 cr.)

Description

This practical course provides participants with opportunities to interact in fieldwork settings, whether as classroom teachers or school-level educational leaders. Students complete 30 hours of supervised fieldwork, with the distribution of activities based on the student's background and interests, and with the agreement of the student's advisor. Each student must participate in at least three different types of fieldwork activities, which could include peer observation, group-based interaction, observation by a qualified supervisor or mentor, or other parallel activity. Required of MA students who have never taken a documented fieldwork course with extensive classroom and/or school-based experience.

Notes
This course will be graded Pass-Fail.

EDUC 5282 - Independent Study in International & Comparative Education (3 cr.)

Description
Independent study in various areas of International & Comparative Education. To be assigned to individual students or to groups. Readings and assignments are required, and frequent consultations are held.

EDUC 5288 - Comprehensive Exam (1 cr.)

Prerequisites
Final semester before graduation

Description
Students prepare for comprehensive examinations, in lieu of a thesis.

EDUC 5293 - Capstone Project (3 cr.)

Prerequisites
EDUC 5201 and EDUC 5202 .

Description
Students undertake a capstone project related to their concentration, approved by student's

advisor and two faculty readers. The capstone should be an applied project, firmly grounded in a theoretical framework and a rigorous literature review.

EDUC 5299 - Research Guidance and Thesis (2 cr.)

Description
Guidance and approval of thesis research.

Egyptology

EGPT 1080 - Coptic Lives (3 cr.)

Description

This course examines the role of Coptic monasticism in shaping the understanding of Coptic archaeology, and more specific aspects of Coptic life, including food, agriculture, and craft productions.

EGPT 1099 - Selected Topics for the Core Curriculum (3 cr.)

Description
Course addressing broad intellectual concerns and accessible to students as part of the Freshman Level of the Core Curriculum.

EGPT 2020 - Ancient Egypt: An Introduction (3 cr.)

Description
An introduction to history, society, religion, art and architecture of Ancient Egypt, including a description of the nature and character of the field of Egyptology. The continuing impact of Ancient Egypt on subsequent societies and cultures including that of modern Egypt will be examined.

When Offered
Offered each semester.

EGPT 2030 - Introduction to Egyptian Architecture (3 cr.)

Prerequisites
Only open to declared architecture majors and Egyptology majors.

Description
A basic class on Egyptian architecture, comprised of a brief introduction to the culture of the ancient Egyptians, followed by a series of lectures dealing with Egyptian architecture, the typology of Egyptian architecture, and the role it played in Egyptian society and culture. The raw materials and tools used by the Egyptians will be covered, as well as some of the motifs used in the buildings, and their ideas about architecture, including their use of light, water, and space in the buildings. The course includes sections on temples, tombs, and, with a brief discussion of urban planning. The course will conclude with a section on Egypt's legacy to architecture, and how the use of the grammar of architecture changes over time. Field-trips will also constitute an important part of the course and will, in some cases, take the place of class-time.

EGPT 2099 - Selected Topics for Core Curriculum (3 cr.)

Prerequisites
RHET 1010

Description
Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

When Offered
Offered occasionally.

EGPT 2210 - Introduction to Archaeology (3 cr.)

Description
The methods and theories of archaeological excavation and interpretation; archaeological evidence of human cultural development; archaeology as a social science.

When Offered
Offered occasionally.

EGPT 2250 - Voices from Ancient Egypt: Ancient Egyptian Literature in Translation (3 cr.)

Description

The course will analyze Ancient Egyptian literary texts, including folk tales, myths, wisdom literature and poetry, in order to present ancient Egyptian culture through its literature and make students appreciate the depth and high level of this advanced culture in such an early period of Egypt's long history.

When Offered

Offered occasionally.

EGPT 3010 - Temples, Tombs and Hieroglyphs (3 cr.)

Prerequisites

Instructor's consent

Description

The class examines Egypt's history and geography and devotes special attention to the effect of geography and natural resources upon the development of Ancient Egyptian history, art, and civilization.
Prerequisites instructors consent

When Offered

Offered occasionally.

EGPT 3201 - Art and Architecture of Ancient Egypt I (3 cr.)

Prerequisites

EGPT 2020 or consent of instructor.

Description

The course covers the period between the Predynastic and the Middle Kingdom and includes:

reliefs, statuary, architecture, and minor arts, illustrated with images. The class focuses on learning how to look at and to analyze Egyptian art and to place it in its context. This course involves a significant amount of memorization that enables the student to create a mental data-bank that is useful when putting excavated material in context and in analyzing Egyptian art. There will be field-trips to the museum and to Giza and Saqqara durign the semester.

When Offered
Offered in fall.

EGPT 3202 - Art and Architecture of Ancient Egypt II (3 cr.)

Prerequisites
EGPT 2020 or consent of instructor.

Description
The course covers the period betweem the Middle Kingdom and the Ptolemaic Period. It includes: reliefs, statuary, architecture, and minor arts, illustrated with images. The class focuses on identifying the basic principles of Egyptian art and architecture, learning how to look at and to analyze Egyptian art and to place it in its context. There will be field-trips to the museum and to other sites, possibly including Luxor, during the semester.

When Offered
Offered in spring.

EGPT 3211 - History of Ancient Egypt I: Pre-Dynastic Through Middle Kingdom Egypt (3 cr.)

Description
This course covers the history of Egypt from the Predynastic period to the Middle Kingdom. The course focuses on the 'official' history of Egypt rather than the cultural/social history which is covered in a separate course. The scope of 'official' history includes: the rise of the Egyptian state, the different rulers of Egypt and their contributions to the state in terms of buildings, religious changes and foreign policy, the economy, social organization, and Egypt's foreign

relations. Literary souces will be augmented by archaeological evidence. Field trips to archaeological sites in the Cairo area are an obligatory aspect of the course.

When Offered
Offered in fall.

EGPT 3212 - History of Ancient Egypt II: Middle Kingdom through Ptolemaic Egypt (3 cr.)

Description
This course covers the history of Egypt from the Middle Kingdom to the end of Pharaonic history. The course focuses on the 'official' history of Egypt rather than the cultural/social history that is covered in a separate course. The scope of 'official' history includes: the different rulers of Egypt and their contributions to the state in terms of buildings, religious changes and foreign policy, the economy, social organization, and Egypt's foreign relations. Literary sources will be augmented by archaeological evidence. Field trips to archaeological sites are an important component of the course.

When Offered
Offered in spring.

EGPT 3251 - Hieroglyphics I (3 cr.)

Description
The course introduces the student to the study of classical Egyptian script, grammar and hieroglyphic texts of the Middle Kingdom.

When Offered
Offered in fall.

EGPT 3252 - Hieroglyphics II (3 cr.)

Prerequisites

EGPT 3251

Description
The course is a continuation of EGPT 3251. Students will concentrate on the verbal forms of classical Egyptian.

When Offered
Offered in spring.

EGPT 4030 - Independent Study in Egyptology (1-3 cr.)

Description
Independent research projects in Egyptology, with consent of instructor and student's adviser.

When Offered
Offered every semester.

EGPT 4151 - Hieroglyphics III (3 cr.)

Prerequisites
EGPT 3252

Description
Students will read a number of Egyptian texts and learn how to translate and interpret written documents.

When Offered
Offered in fall.

EGPT 5100 - Living Like an Egyptian: Ancient Egyptian Society (3 cr.)

Prerequisites
Consent of instructor.

Description

The course will cover the cultural, technological, and social history of ancient Egypt, with an emphasis on using primary sources and, if appropriate, experimental work. The subject matter covered includes the social organization of Egypt, the economy, agriculture, food, medicine, crafts, building methods, family structure, etc.

EGPT 5110 - Egypt in the First Millennium BC (3 cr.)

Prerequisites
EGPT 3211 and EGPT 3212 , or instructor's consent.

Description
The course covers the history of Egypt during the first millennium BC (1069-332 BC), a period characterized by much internal conflict and long periods of foreign domination. It examines the factors that led to the demise of Egypt's New Kingdom, traces the rise of the Libyan and Nubian dynasties, and the subsequent annexation of Egypt by the Persian Empire. Special Attention will be devoted to the last dynasties of the Pharaonic tradition, Dynasties XXI-XXX.

When Offered
Offered occasionally.

EGPT 5111 - Egyptomania (3 cr.)

Prerequisites
Consent of instructor.

Description
This course will enable students to recognize Egyptianizing art and architecture in Egypt and around the world and to understand its religious, social, and ideological origins. Students will also gain an understanding of Ancient Egypt's cultural impact on the world.

EGPT 5120 - History of Egypt in the Graeco-Roman Era (3 cr.)

Prerequisites
EGPT 3211 and EGPT 3212 , or instructor's consent.

Description
The course will study the history of Egypt in the Graeco-Roman period and the momentous confrontation between Greek and Egyptian culture between 300 BC and 700 AD. It will also examine the social consequences of the spread of Christianity in Egypt and the rise of Coptic culture.

When Offered
Offered occasionally.

EGPT 5130 - Art, Societies, and Cultures of the Ancient Near East (3 cr.)

Prerequisites
Consent of instructor.

Description
This course provides students with an overview of the prehistory and early historical periods of the ancient Near East. Considerable attention is given to the fundamental transitions which occurred in this region. In particular, we will examine: (1) the first emergence of settled village life, hierarchical social organization and the domestication of plants and animals during the Neolithic period; (2) the rise of urban centers, temple and palace elites and writing; (3) the emergence and spread of the states and subsequent militaristic empires which became the dominant political force in the ancient Near East for several millennia. This course examines both archaeological and historical evidence with a heavy emphasis on material culture, primary archaeological and historical data and the process of scholarly interpretation.

EGPT 5140 - Societies and Cultures of Ancient Nubia (3 cr.)

Prerequisites
Consent of instructor.

Description
This course is intended to serve as a broad survey of the development of history, culture and society in Nubia and the Northern Sudan from the earliest era of food production (ca. 6000-4000 BCE/BC) to the development of the medieval kingdoms of Nubia (ca. 600-700 CE/AD). Special attention will be devoted to the question of the relations - cultural, commercial, technological, political - between Ancient Egypt and Ancient Nubia. For the purposes of this class, the term "Nubia" will mean the long stretch of the Nile Valley that extends between the Nile's First Cataract (located in Southern Egypt just south of the city of Aswan) and its Sixth Cataract (located in the Sudan some distance north of the city of Khartoum). The term "Nubian" will describe the people of this specific area as well as all the distinctive languages and cultures that flourished here from the beginning of recorded history to the early modern period.

EGPT 5144 - Ancient Egyptian Religion and Ethics (3 cr.)

Prerequisites
Instructor's permission.

Description

The course will examine in detail the beliefs and religious institutions of the Ancient Egyptians. Special attention will be devoted to official and popular religions, and to their manifestation in architecture as well as in the literature of Ancient Egypt.

When Offered
Offered occasionally.

EGPT 5150 - Introduction to Coptic (3 cr.)

Prerequisites
EGPT 3252

Description
Coptic represents the last stage of the ancient Egyptian language. The course will include reading of selected texts in two Coptic dialects.

When Offered
Offered occasionally.

EGPT 5152 - Introduction to Hieratic (3 cr.)

Prerequisites
EGPT 3252

Description
Hieratic is a script derived from hieroglyphics used mainly on papyrus. The course is a study of this script through reading selected texts literary, religious, or administrative- related to daily life in ancient Egypt .

When Offered
Offered occasionally.

EGPT 5153 - Hieroglyphics IV (3 cr.)

Prerequisites
EGPT 4151

Description

The course consists of further reading of Egyptian texts with an introduction to the new Egyptian language of the later periods of Pharaonic history. In order to introduce students to epigraphy, they are required to copy and study texts from the Cairo Museum.

When Offered
Offered every other year.

EGPT 5154 - Late Egyptian (3 cr.)

Description
This class introduces students to the language and literature of Egypt's New Kingdom. Late Egyptian is a unique stage of Egyptian in which the vernacular found its way into the textual record. By the end of this course, students will be able to read a variety of literary and non-literary texts.

EGPT 5160 - Selected Topics in Coptic Studies (3 cr.)

Description

This course allows instructors to offer a topic in Coptic Studies. The topic will be chosen from year to year in coordination with the departments concerned and the dean of the School of HUSS, and according to the individual interests and areas of expertise of the instructors. Topics chosen may include various aspects of Coptic art and history, monasticism, folklore, or other subjects. The course may be taken more than once if the topic changes.

Cross-listed
Same as ARIC 5132
When Offered
Offered in fall.
Repeatable
The course may be taken more than once if the topic changes.
Notes
Students in these majors may petition preferably before registration to have the course included in their major requirements.

EGPT 5170 - Selected Topics in Cultural Resource Management and Museology (3 cr.)

Prerequisites
Consent of instructor.

Description
The course deals with different types of cultural heritage present in Egypt and their physical and cultural environment, and with the various methods of managing them in order to ensure their proper preservation while making them accessible to tourists and scholars. At the instructor's discretion, the course may also provide an understanding of the role of museums in the modern world and the basic methodology and practice of museum management.

When Offered
Offered occasionally.
Repeatable
Can be taken more than once if the subject matter changes.

EGPT 5180 - Advanced Method and Theory: Archaeological and Historical (3 cr.)

Prerequisites
Consent of instructor.

Description
This seminar is geared to providing a methodological basis and theoretical approach for both the disciplines of archaeology and history. More time and emphasis will be put on the archaeological, however, as it is the more basic discipline in Egyptology.

EGPT 5191 - Selected Aspects of Field Work (3 cr.)

Prerequisites
Permission of instructor.

Description

This course allows students to gain hands-on experience and engage in practical aspects of fieldwork, offering qualified students the opportunity to participate in archaeological and epigraphic projects as well as museum internships. Preference will be given to majors in Egyptology, anthropology, and related fields. Inquiries concerning the course must be made no fewer than seven months prior to the start of the summer semester for participation in archaeological and/or epigraphic fieldwork in Egypt. Sites and projects will vary.

When Offered
Offered occasionally.
Repeatable
May be repeated for credit when content changes.

EGPT 5199 - Selected Topics in Egyptology (3 cr.)

Prerequisites
Junior standing and/or consent of instructor.

When Offered
Offered occasionally.

Repeatable
May be repeated for credit when content changes.

EGPT 5230 - Settlement and Daily Life in Ancient Egypt (3 cr.)

Description
This seminar introduces students to the material culture of the ancient Egyptians, specifically that of their settlements and daily life. The seminar concentrates on the archaeological evidence from settlements of the three most important periods of ancient Egyptian civilization: the Old, Middle and New Kingdoms. The seminar will first discuss urban settlement patterns in ancient Egypt, and secondly the processes by which material assemblages form in settlements. The plans and structure of dwellings will also be considered along with the material evidence found inside of them.

EGPT 5240 - Death and Burial in Ancient Egypt (3 cr.)

Prerequisites
Consent of instructor.

Description
This course will cover the funerary practices and beliefs of ancient Egypt from the Old Kingdom to the Graeco-Roman period. The subject matter covered will include the process of mummification and the spells used during the operation; the development of coffins, sarcophagi, amulets, canopic jars, canopic chests, shabtis, and other tomb furnishings; the evolution of the tomb, both royal and private, and any symbolic values that might be attached to the decoration and architecture; funerals, the cult of the dead, economic foundations supporting the tomb, and the religious rituals associated with funerals, the afterlife, and the mortuary cult. Experimental archaeology (mummification) might be involved in this class.

EGPT 5299 - Independent Study and Guided Readings (3 cr.)

Prerequisites
Department approval.

Description
Guided individual readings and/or research on a subject of mutual interest to student and faculty member that is beyond the scope of what is offered.

When Offered
Offered in fall and spring.
Repeatable
May be taken only twice.

EGPT 5320 - The Romano-Byzantine World and Egypt (3 cr.)

Prerequisites
Consent of the instructor.

Description
This course is designed to familiarise students with the material and historical culture of the Late Antique and Byzantine periods, with an emphasis on the geographical area of the eastern Mediterranean and Egypt. This course includes direct experience with actual works of Late Antique and Byzantine visual culture.

EGPT 5330 - Coptic Art and Architecture (3 cr.)

Prerequisites
Consent of the instructor.

Description
A course designed to introduce students to Coptic art and architecture, with an emphasis on monasticism. Field trips are required.

EGPT 5420 - Material Culture: Looking at Artifacts in Context (3 cr.)

Prerequisites
Consent of instructor.

Description
The course will provide an overview of different types of objects from funerary, ritual, and quotidian contexts, with special museum sessions. It is designed to familiarize students with different types of material culture of ancient Egypt so that they can identify and work with objects confidently, in museums or on excavations.

EGPT 5430 - Site Analysis (3 cr.)

Prerequisites
Consent of instructor.

Description
This course is intended for students to learn about the history of a site in preparation for working at it, or on excavated material from it. They will choose sites and research its excavation history, as well as tracing back any documentation culled from the accounts of Eastern and Western travellers and historians. Understanding, using, and critiquing site reports will form part of the course, as well as learning to ask questions of the data. Site visits, local accounts, and modern imaging techniques should be used in order to understand and explore the past and present of the chosen site.

EGPT 5440 - The Iconography of Ancient Egypt (3 cr.)

Prerequisites
A course In Egyptian art.

Description
The civilization of ancient Egypt left behind a vast material culture, both inscribed and decorated. An important part of a student's understanding of ancient Egypt is to be able to recognize and understand the attributes and symbols recorded and depicted on ancient Egyptian monuments. This class is designed to draw upon students' understanding of hieroglyphs, art and religion, and apply their knowledge to the comprehension of the iconography in tombs, temples, and in the minor arts.

EGPT 5510 - Advanced Hieratic (3 cr.)

Prerequisites

EGPT 5152 or equivalent.

Description
The class consists of more advanced readings from the different stages of the hieratic writing, the different hands encountered, and the different categories of texts. Although this course will focus primarily on Palaeography, the translation of these texts will also familiarize students with aspects of the culture they may not necessarily have come across as undergraduates. They will also enhance their training in grammar and improve their knowledge of the Ancient Egyptian Language in general.

EGPT 5520 - Introduction to Demotic (3 cr.)

Prerequisites
Equivalency to advanced hieroglyphs.

Description
Demotic is a cursive script derived from Hieratic, and rooted in Hieroglyphics. It emerged in the 7th century B.C. and remained in use in parallel with Hieroglyphics and Hieratic, and later also with Coptic until the Byzantine Period, when the latter language took over. The Egyptian Language in its Demotic manifestation has further developed and new grammatical forms and vocabulary have appeared. In this class students will learn Demotic and work on a series of different texts.

EGPT 5540 - Advanced Coptic Texts (3 cr.)

Prerequisites
Basic Coptic.

Description
An advanced course in Coptic that permits students to read a variety of texts. The subject matter changes regularly, and the course can be taken more than once as long as the material is different.

EGPT 5550 - Selected Advanced Readings in Ancient Egyptian Religion Texts (3 cr.)

Prerequisites
EGPT 3251, EGPT 3252

Description

This course is designed to study ancient Egyptian religious texts in depth, including their form, their content, their various usages, whether in temple rituals, in funerary religion, or in magical compositions etc. and the development of the religious expression across history. By the end of the course students should have learned about religion as well as modes of expression of certain beliefs, as well as grammatical structures unique to sacred forms of expression.

Repeatable
May be repeated for credit when content changes.

EGPT 5560 - Selected Advanced Readings in Historical Literature from the Old Kingdom to the Late Period (3 cr.)

Prerequisites
EGPT 3251, EGPT 3252

Description

This course is designed to cover readings from all period of Egyptian history to expose students to different types of historical literature, and to allow them to be able to select the period they prefer for further research.

When Offered
Offered occasionally.
Repeatable
May be repeated for credit when content changes.

EGPT 5991 - Research Seminar: Research Design and Writing (3 cr.)

Prerequisites
Consent of instructor.

Description
The course is intended to give students an opportunity to clarify and structure their thesis planning, particularly by way of identifying the major problem they wish to explore, its possible scope and dimensions, and justifying the theoretical perspectives and methodology appropriate for the purpose. This course will also ensure that students are taught the expectations and the culture of their specific academic discipline so that they can participate successfully in it.

EGPT 5992 - Thesis (3 cr.)

Prerequisites
Completion of required coursework.

Description
For the MA degree in Egyptology a thesis of 25,000 words, exclusive of Bibliography and appendices is required on a topic that has been approved by the thesis committee. The committee should be made of the chief and second advisor. Additional advisors will be added if extra specialties are needed.

Electronics and Communications Engineering

ECNG 1501L - Exploring Electrical Engineering (1 cr.)

Prerequisites
CSCE 1001

Description
This course utilizes programming in the context of simple electrical engineering applications and also teaches elements of sensor and actuator operation, communications, control, and circuit theory.

When Offered
Offered in fall and spring

ECNG 1502 - Programming Elements for Electrical Engineering (3 cr.)

Prerequisites
CSCE 1001 and ECNG 1501L (or concurrent)

Description
The objective of this course is to engage students and help reinforce their traditional programming assignments with practical hardware applications. This course covers advanced C programming techniques. It introduces the fundamentals of real-time operating systems (RTOS).

When Offered
Offered in fall and spring

ECNG 2101 - Digital Logic Design (3 cr.)

Prerequisites
CSCE 1001

Concurrent
Concurrent with ECNG 2108L

Description
The nature of digital logic and numbering systems. Basic gates, Boolean algebra, Karnaugh maps, memory elements, latches, flip-flops, design of combinational and sequential circuits, integrated circuits and logic families, shift registers, counters, multiplexers, demultiplexers, decoders, encoders, and parity circuits, Number systems, 1's and 2's complements, arithmetic circuits, fixed-point and floating-point representations, memory types, design of circuits using ROMs and PLAs. Exposure to logic design automation software. Introduction to FPGAs and HDL.

When Offered
Offered in fall and spring

ECNG 2105 - Circuit Analysis I (3 cr.)

Prerequisites
PHYS 1021

Description
Ohm's law, Kirshoff's law, Mesh current method, node-voltage method, superposition theorem,

reciprocity theorem, Thevenin's theorem, Norton's theorem, maximum power transfer theorem, compensation theorem, T and II networks, transformation equations II to T and T to II. Transients in RC and RL circuits, time constants, mutual inductance and transformers. Time domain behavior of inductance and capacitance, energy storage.

When Offered
Offered in fall and spring.

ECNG 2106 - Circuit Analysis II (3 cr.)

Prerequisites
ECNG 2105 and concurrent with MACT 2141 and ECNG 2109L

Description
Alternating current circuit analysis using complex numbers (phasors), complex impedance and complex admittance. Series resonance and parallel resonance, half power points, sharpness of resonance, the Q-factor, maximum power to an alternating current load, Decibels, power level measurements. The s-plane and poles and zeroes of the transfer function. Forced and natural response of circuits using complex frequency analysis. Three-phase circuits. Two-port networks and the y, z, h and ABCD parameters. Reciprocal networks. Laplace transform techniques.

When Offered
Offered in fall and spring.

ECNG 2108L - Digital Logic Design Lab (1 cr.)

Prerequisites
Concurrent with ECNG 2101

Description
The laboratory component will cover experiments in digital design and experiments illustrating material of course ECNG 2101 including an FPGA-based project.

When Offered
Offered in fall, spring and summer.

ECNG 2109L - Circuit Analysis Lab (1 cr.)

Prerequisites
Concurrent with ECNG 2106

Description
Experiments illustrating material of course ECNG 2106.

When Offered
Offered in fall and spring.

ECNG 3105 - Electronics I: Basic Electronic Devices & Circuits (3 cr.)

Prerequisites
ECNG 2106

Description
Devices and Basic Circuits: Introduction to Electronics, Operational Amplifiers, Active Filters, Diodes, Bipolar Junction Transistors (BJT's) (DC and small signal analysis), MOS Field Effect Transistors (MOSFET's) (DC and small signal analysis).

When Offered
Offered in fall and spring.

ECNG 3106 - Electronics II: Analog Circuits (3 cr.)

Prerequisites
ECNG 3105 , concurrent with ECNG 3109L .

Description
Differential and Multistage Amplifiers, Frequency Response, Feedback, Output Stages and Power Amplifiers, Analog Integrated Circuits, Filters and Tuned Amplifiers, Signal Generators and Waveform Shaping Circuits.

When Offered
Offered in fall and spring.

ECNG 3108 - VLSI Design (3 cr.)

Prerequisites
ECNG 2101 and ECNG 3105

Description
Introduction to fabrication techniques for silicon very large integrated circuits (VLSI), Introduction to MOS transistor. Details of CMOS inverter, transmission gates. Design of Complex CMOS gates; combinational and sequential design techniques in VLSI. CMOS technology and rationale behind various design rules. Design and synthesis using hardware description languages(HDL) such as Verilog. Use CAD tools to design, layout, check and simulate some basic circuits. Design, layout and simulation of a project.

Hours
Two class periods and one three-hour lab period.
When Offered
Offered in fall and spring.

ECNG 3109L - Electronics Lab (1 cr.)

Prerequisites
Concurrent with ECNG 3106 .

Description
Experiments illustrating material of course ECNG 3106

When Offered
Offered in fall and spring.

ECNG 3201 - Signals and Systems (3 cr.)

Prerequisites
ECNG 2105 and MACT 2141

Description

Basic properties of signals and systems, linearity, stability, step and impulse response,superposition integral, block diagrams, Fourier series and Fourier transform for discrete

and continuous time signals, sampling theorem, Z-transform.

When Offered
Offered in fall and spring

ECNG 3202 - Automatic Control Systems (3 cr.)

Prerequisites
ECNG 3201

Description
Principles of closed-loop feedback control systems, control systems design criteria, block diagrams, signal flow graphs, state space representation of linear systems, general feedback theory, transfer functions of control systems, Routh criterion, root locus theory and methods. Several experiments are conducted in the Control Lab to illustrate material covered in the course.

When Offered
Offered in Fall and Spring.

ECNG 3401 - Electromagnetic Theory (3 cr.)

Prerequisites
PHYS 2221 and MACT 2123

Description
Electric field and potential. Gauss's law; divergence. Conductors, dielectrics and capacitance. Poisson's and Laplace's equations. Electrostatic analogs. Magnetic field and vector potential. Time varying fields; displacement current. Maxwell's equations in differential form, Poynting's theorem and Electromagnetic waves in vacuum and in matter.

Cross-listed
Same as PHYS 3023.
When Offered
Offered in fall and spring.

ECNG 3503 - Microcontroller system design (3 cr.)

Prerequisites
ECNG 1502, ECNG 2101, ECNG 3105 and concurrent with ECNG 3509L.

Description

Microcontroller ARM architecture. Assembly language, Interrupts, serial and parallel Input/Output, Timers, Analog-to-Digital conversion, Watchdog, Interfacing to keypads and display devices, AC control, Bus protocols (I2C, UART, ...), DMA, Introduction to RISC and CISC.

When Offered
Offered in fall and spring.

ECNG 3509L - Microcontroller system design lab (1 cr.)

Prerequisites
Concurrent with ECNG 3503

Description
Experiments illustrating material of course ECNG 3503

When Offered
Offered in fall and spring.

ECNG 3601 - Power and Machines (3 cr.)

Prerequisites
ECNG 2106 and PHYS 2221

Description

Power system components, basic concepts and operating characteristics of transformers, DC and AC machine fundamentals, theory of operation and basic concepts of induction motors, transmission line construction and operation, renewable energy sources, fault analysis and protection system elements, Electrical Installations in Buildings, Elements of Power Electronics, Switching, Converters, Applications of PE in Power systems (FACT, SVC), Harmonics in Power Systems.

When Offered
Offered in fall and spring.

ECNG 3801 - Technological Innovation and Product Development (3 cr.)

Prerequisites
ECNG 1501L

Description
The course covers the 'what, why and who' of technological innovation management. The course will cover technology trends, innovation tools, and aspects of technology S-Curves. Students will learn how to establish a technological business concept by understanding the market, defining the product description, business models, channels, and estimate the needed technological resources. Finally, the course highlights the principles of product innovation and the product development economics behind it. This includes the ethics of technology management that pertains to respecting and protecting the intellectual property of others and own (patents and copyright).

ECNG 4101 - Solid-State Devices (3 cr.)

Prerequisites
Prerequisite: consent of instructor.

Description
Theory of semiconductor surfaces, field effect transistors, application in static logic design, semiconductor sensors and transducers.

When Offered
Offered occasionally.

ECNG 4103 - Testing of Digital Circuits (3 cr.)

Prerequisites
ECNG 2101

Description

Basic concepts behind testing digital circuits. Causes of permanent and temporary failures. Test pattern generation techniques including exhaustive, Pseudo-exhaustive, Path sensitization, Critical path, Random and Pseudo-random Testing. Design for testability methods for testing Integrated Circuits. Techniques for testing Printed circuit boards.

When Offered
Offered occasionally.

ECNG 4104 - High Level Digital ASIC Design Using CAD (3 cr.)

Prerequisites
ECNG 3105

Description
Design of digital application-specific integrated circuits (ASICS) using synthesis CAD tools. Topics include the following: design flow, hierarchical design, hardware description languages such as VHDL, synthesis, design verification, IC test, chip-scale synchronous design, field programmable gate arrays, mask programmable gate arrays, CMOS circuits and IC process technology. For the project, students will design and implement a significant digital system using field programmable gate arrays.

Hours
Two class periods and one three-hour lab period.
When Offered
Offered occasionally.

ECNG 4105 - Integrated Circuit Fabrication: Materials and Processes (3 cr.)

Prerequisites
ECNG 3106

Description
Microfabrication techniques for silicon very large integrated circuits (VLSI), unit processes including lithography, native film growth, diffusion, ion implantation, thin film deposition and etching. Metal interconnects. Process integration for CMOS, BiCMOS, ECL and MEMS.

When Offered
Offered occasionally.

ECNG 4301 - Fundamentals of Communications I (3 cr.)

Prerequisites
ECNG 3201 , MACT 3224 ,ENGR 3202 , concurrent with ECNG 4314L

Description
Review of signal representation and classification, time and frequency domains, Fourier transform; Energy and power spectral density. Basics of analog communication: amplitude, angle, and pulse modulation; modulators and demodulators; frequency division multiplexing. Introduction to digital communication: Review of sampling and quantization; pulse code modulation (PCM), Delta Modulation, Differential PCM, time division multiplexing, line codes; the matched filter. Introduction to Random Processes. Noise in communication systems.

When Offered
Offered in fall and spring.

ECNG 4302 - Fundamentals of Communications II (3 cr.)

Prerequisites
ECNG 4301

Description
Fundamentals of Digital Communications. Geometric Representation of Signals; Binary and M-ary Modulation and their Performance Analysis and Spectral Efficiency. Introduction to Information Theory and Source and Channel Coding; Channel Capacity; Block and Convolutional Codes. Introduction to broadband communications; OFDM. A course project is assigned.

When Offered
Offered in fall and spring

ECNG 4304L - Photonics and Optical Communication Laboratory (1 cr.)

Prerequisites

Concurrent with ECNG 4310 .

Description
Experiments in fiber optics illustrating concepts pertaining to fiber dispersion, attenuation measurements, characterization of light sources (LEDs and Laser diodes) and detectors (photodiodes), optical multiplexing and demultiplexing, optical and interferometric sensors.

When Offered
Offered occasionally.

ECNG 4306 - Computer Communication Networks (3 cr.)

Prerequisites
ECNG 4301 .

Description
Introduction to communication networks including basic networking concepts, OSI and TCP/IP models; Transport layer protocols, Data link layer, multiple access, wireless LANs; Network layer including logical addressing, Internet Protocol (IP), data forwarding and routing.

When Offered
Offered in fall and spring.

ECNG 4308 - Telecommunications Systems (3 cr.)

Prerequisites
ECNG 4301, ECNG 4306

Concurrent
ECNG 4306
Description
Telecom system fundamentals including infrastructure, transmission, switching, capacity planning and Broadband Telecom systems; Voice over IP network basics including major techniques such as H.323 and SIP; Satellite communications including configurations and characteristics of satellite communication systems, Services, Orbits and Satellite networks.

When Offered
Offered occasionally.

ECNG 4310 - Optical Communication Systems (3 cr.)

Prerequisites
ECNG 3401 and PHYS 2221 , concurrent with ECNG 4304L .

Description
Operating principles of optical communication systems and fiber optic communication technology. Characteristics of optical fibers, laser diodes, and laser modulation, laser and fiber amplifiers, detection and demodulation, dispersion compensation, and network topologies. System topology, star networks, bus networks, layered architectures, all-optical networks.

When Offered
Offered occasionally.

ECNG 4312 - Mobile Communication Systems (3 cr.)

Prerequisites
ECNG 4302, or concurrent.

Description

The architecture, techniques, and operation of mobile communications systems. Propagation models and fading in wireless systems. Cellular networks and multiple-access techniques; Trunking. Capacity enhancing techniques in cellular networks. Overview of cellular standards including 5G; MAC-related concepts. Current topics in mobile networks are introduced. A course project is assigned.

When Offered
Offered occasionally.

ECNG 4314L - Communications Lab (1 cr.)

Prerequisites
Concurrent with ECNG 4301

Description
Experiments illustrating material of course ECNG 4301 .

When Offered
Offered in fall and spring.

ECNG 4402 - Electromagnetic Waves (3 cr.)

Prerequisites
ECNG 3401

Description
Review of Maxwell's equations. Transmission lines. Signal matching, Smith chart, Stub matching. Parallel plate, rectangular, and optical waveguides. Antennas and radiation of electromagnetic energy. Boundary Value problems. Several experiments are conducted in the Microwave Lab to illustrate material covered in the course.

When Offered
Offered in fall and spring

ECNG 4407 - Microwave Systems (3 cr.)

Prerequisites
ECNG 4402

Description
Introduction to microwave engineering and wave equation review. Wave propagation and cutoff considerations. Transmission line power and mode limits. Planar and microstrip lines. Obstacles in transmission lines. Impedance matching and tuning. Quarter-wave transformer design. Microstrip transitions. Transmission line and cavity resonators. Sacttering-parameters and applications. Microwave transistor amplifier gain and stability design. Microwave filter design by insertion loss method.

When Offered
Offered occasionally.

ECNG 4504 - Embedded Systems for Wireless Communications (3 cr.)

Prerequisites
ECNG 3503

Description
Contemporary wireless communication systems are mostly system-on-chip-based. This course will therefore be focused on hardware and software co-development. It includes the following topics. Overview of embedded systems elements, structure, challenges and applications; firmware and drivers, boot process, advanced RTOS fundamentals and scheduling techniques; Bare-metal programming, The course will rely considerably on hands-on practice of state-of-the-art wireless embedded design tools through practical assignments and projects. It includes the development and verification of the medium-access layer design and major protocols (e.g. IEEE low-power WiFi, ZigBee, Ethernet, etc.) of a real-world wireless communication system including interactions with the PHY-related items. The course includes hidden labs.

ECNG 4505 - Computer Architecture (3 cr.)

Prerequisites
(CSCE 2301 or ECNG 2101) and CSCE 2303

Concurrent
Must be taken concurrently with ECNG 4508L
Description
Instruction set architectures design, CPU microarchitectures including datapath and control unit design, register transfer language, single-cycle implementation, pipelining, hazards, branch prediction, I/O systems and busses, Instruction-level parallelism, static and dynamic multiple-issue architectures, dynamic scheduling, speculation, SIMD and vector architectures, synchronization, virtual memory, and cache coherence.

Cross-listed
Same as CSCE 3301.
When Offered
Offered in Fall and Spring.

ECNG 4506 - Industrial control systems (3 cr.)

Prerequisites
ECNG 2101 and ECNG 3202 (for ECNG students); MENG 4756 (for MENG students).

Description
PLCs and DCS in industrial automation, Basic components of a PLC and DCS, Programming of PLCs by ladder logic, Internal markers, Timers, Counters, PLC program development for control applications, Interlocking and sequential logic, Advanced Sequential Control Techniques, Data handling instructions, A/D and D/A PLC modules, Industrial communication busses.

When Offered
Offered occasionally.

ECNG 4508L - Computer Architecture Lab (1 cr.)

Prerequisites
Concurrent with ECNG 4505

Description
The laboratory will cover experiments in computer architecture and hardware design and experiments illustrating material of Course ECNG 4505 .

Cross-listed
Same as CSCE 3302.
When Offered
Offered in fall and spring.

ECNG 4510 - Fundamentals of Wireless Sensor Networks (3 cr.)

Prerequisites
ECNG 4301

Description
Overview of IoT concepts, WSN elements, structure, challenges and applications, WSN topologies, WSN engineering (deployment) techniques, medium-access layer design and major protocols (e.g. IEEE 802.15.4, ZigBee), routing in WSNs with emphasis on data-centric routing techniques, energy-efficient operation and techniques; related contemporary issues. The course

will rely considerably on hands-on practice of state-of-the-art WSN design tools through practical projects.

When Offered
Offered occasionally.

ECNG 4601 - Product Design and Development (3 cr.)

Prerequisites
Senior level standing.

Description
The focus of the course is integration of the marketing, design, and manufacturing functions to create a new product. The course is intended to provide you with the following benefits:

- Competence with a set a tools and methods for product design and development.
- Confidence in your own abilities to create a new product.
- Awareness of the role of multiple functions in creating a new product (e.g. marketing, industrial design, engineering, production).
- Ability to coordinate multiple, interdisciplinary tasks in order to achieve a common objective.
- Reinforcement of specific knowledge from other courses through practice and reflection in an action-oriented setting.
- Enhanced team working skills.

ECNG 4920 - Special Problems in Electronics and Communications Engineering (1-3 cr.)

Prerequisites
Consent of instructor and departmental approval

Description
Independent study in various problem areas of electronics engineering may be assigned to individual students or to groups. Readings assigned and frequent consultations held.

When Offered
Offered in fall and spring.

Repeatable
May be repeated for credit if content changes.

ECNG 4930 - Selected Topics in Electronics and Communications Engineering (3 cr.)

Prerequisites
Senior standing.

Description
Course content will be selected each semester from current developments in the field of electronics engineering.

When Offered
Offered occasionally

ECNG 4950 - Industrial Internship (1 cr.)

Prerequisites
Completion of 8 weeks of industrial training AFTER the completion of 85 credit hours

Description

Each Student is required to spend a minimum of eight weeks in industrial training in an ECNG related field. The training may be in Egypt or abroad, but at least four weeks must be with a single employer. A complete account of the experience is reported, presented and evaluated. Each Student is also required to be trained for 15 hours in the Mechanical Engineering workshops to the study fundamentals of manufacturing processes (forming, welding and machining) prior to, or while, taking the course.

When Offered
Offered in fall and spring.

ECNG 4980 - Senior Project I (1 cr.)

Prerequisites
Prerequisite: senior standing.

Description
A capstone project. Topics are selected by groups of students according to their area of interest and the advisor's approval. Projects address solutions to open-ended applications using an integrated engineering approach.

When Offered
Offered in fall and spring.

ECNG 4981 - Senior Project II (2 cr.)

Prerequisites
ECNG 4980

Description
A continuation of the capstone project.

When Offered
Offered in fall and spring.

ECNG 5210 - Advanced Solid-State Devices (3 cr.)

Prerequisites
Graduate standing in engineering and physics. Electromagnetics, vector algebra, differential equations, and MATLAB programming.

Description
This course covers crystal structures, band gap theory, ionic equilibrium theory, fundamentals of carrier transport, compound semiconductors III-V. This course will make special emphasis on the properties of various types of junctions (p-n junctions, heterojunctions, metal-semiconductor junctions) leading to various electronic devices such as field effect transistors (FETs), metal oxide-semiconductor FETS (MOSFETs), high electron mobility transistors (HEMTs), etc. Short Channel effects and nanoscale phenomena will be emphasized throughout the course and their impact on device modeling in analog and digital circuits.

Cross-listed
Same as NANO 5261.

ECNG 5214 - Advanced ASIC Design (3 cr.)

Prerequisites
ECNG 3105 or equivalent

Description
The course addresses the complete design flow using of digital ASIC chips using state-of-the-art technologies, implementations, methodologies, and CAD tools. The course utilizes hardware descriptive language (HDL)-based design and introduces the design of large-scale systems and the associated methodologies and tools. Recent advancements due to Moore's law have resulted in significant challenges in physical design, including interconnection, power consumption, reliability, and verification. These challenges are explored at a fundamental level as well as solutions in modern CAD tools.

ECNG 5216 - Analog Integrated Circuit Design (3 cr.)

Prerequisites
ECNG 3106

Description
Design techniques for analog and mixed-signal VLSI circuits. Amplifiers: operational amplifiers, transconductance amplifiers, finite gain amplifiers and current amplifiers. Linear building block: differential amplifiers, current mirrors, references, cascoding and buffering. Performance characterization of linear integrated circuits: offset, noise, sensitivity and stability. Layout considerations, simulation, yield and modeling for high-performance linear integrated circuits. CAD tools: Cadence.

ECNG 5217 - Digital Integrated Circuit Design (3 cr.)

Prerequisites
ECNG 3105 and ECNG 3106

Description
The Diode (DC and Dynamic Behavior), The MOSFET (DC and Dynamic Behavior as well as short channel effects), The CMOS inverter (Static and Dynamic Behavior - Power / Speed Tradeoffs), Combinational Logic Gates (Static CMOS Design, Transistor Sizing, Static vs. Dynamic logic styles,

Power / Speed Tradeoffs), Sequential Logic Circuits (Static and Dynamic circuits/flipflops, Power / Speed Tradeoffs), Low Power Circuit Techniques, Memory circuit design and power / reliability consideration, arithmetic logic blocks (adders/ multipliers) and its design.

ECNG 5218 - Advanced Integrated Circuit Design (3 cr.)

Prerequisites
ECNG 3108

Description
The objective of this course is to provide the students with the knowledge of designing emerging nanoelectronic devices and using these devices to build future computing systems. After an introduction to CMOS devices and circuits, the course will cover CMOS design and simulation topics. More attention will be paid to the applications of these devices in the implementation of future computers. The memory and logic architectures that take advantage of the properties of the emerging devices will be discussed. Particularly, signal integrity and timing issues, as well as power consumption will be emphasized.

Cross-listed
Same as NANO 5262.

ECNG 5219 - High-Performance Integrated Circuit Modeling (3 cr.)

Prerequisites
ECNG 3108 or equivalent content form other similar courses

Description
Nano-meter CMOS devices (short channel effects, velocity saturation, device leakage, thermal effects, degradation effects NBTI, etc), Dynamic, short-circuit, and leakage power consumption of CMOS circuits, low power design, DC-DC converters and power management, Classic I/O Modeling and design, The interconnect bottle-neck (modeling and analysis), Noise in integrated circuits, Approximate temporal information in RC and RLC trees (Elmore, Wyatt, Penfield-

Rubinstien delay models, and equivalent Elmore delay for RLC trees), Model order reduction (AWE, PRIMA, numerical issues, stability, etc),3-D Modeling, Thermal effects in integrated circuits, Power distribution network models, electromigration, Ldi/dt noise, and RI drops, High-speed clock distribution network issues: Retiming, register allocation, skew control, and clock scheduling.

ECNG 5223 - Fault-Tolerant Computing and Reliability Modeling (3 cr.)

Prerequisites
ECNG 3503

Description
Faults, errors, fault modeling, redundancy techniques, error detecting and correcting codes, self-checking circuits, reliability and availability modeling, performability.

ECNG 5225 - Digital Signal Processing (3 cr.)

Prerequisites
ECNG 3201 or equivalent.

Description
Fundamentals of digital signal processing and filter design. Topics covered include Z-transform, Discrete Fourier transform (DFT), fast Fourier transform (FFT), finite impulse response (FIR) filter design, infinite impulse response (IIR) filter design, multirate signal processing, polyphase structures, short-time Fourier analysis, applications to communication systems and speech processing.

ECNG 5226 - Networked Control Systems Design & Applications (3 cr.)

Prerequisites
ECNG 3202 and ECNG 4306

Description
Introduction to Networked Control Systems, real-time systems, network architecture, wired and wireless network protocols, international standards, NCS in industrial control, NCS in terrestrial transportation systems, Study of different software packages and simulation tools for NCS.

Cross-listed
Same as RCSS 5234.

ECNG 5230 - Probability and Stochastic Processes with Applications (3 cr.)

Prerequisites
MACT 3224 or equivalent.

Description
Review of probability and sampling methods; modeling of random experiments; linear and nonlinear transformations of random vectors; discrete-time and continuous-time random processes; analysis and processing of random signals; Markov chains. Applications will span diverse areas such as communication networks, genetics, financial markets, ... etc. A project on selected applications will be assigned.

ECNG 5231 - Advanced Digital Communications and Emerging Technologies (3 cr.)

Prerequisites
ECNG 4302 and ECNG 5230

Description
Digital communications over noisy and dispersive channels. Signal space analysis; Optimal detection over noisy channels; Detection with uncertainty; Digital modulation over band-limited channels and Inter-Symbol Interference (ISI); Time- and frequency domain equalization. Emerging topics will be presented and a course project or paper is assigned.

When Offered
Offered occasionally

ECNG 5233 - Wireless Communication Systems (3 cr.)

Prerequisites
ECNG 4302 or equivalent.

Description

Communication over wireless channels. Topics include indoor and outdoor propagation models and path loss analysis; time- and frequency-selective fading channels; Fading countermeasures including diversity, Rake, adaptive modulation and coding, and interleaving; spread-spectrum communications; synchronization; current topics will be discussed and wireless communications standards will be cited. Simulation projects and literature readings are included.

ECNG 5234 - Enabling Technologies for High Date Rate Communications (3 cr.)

Prerequisites
ECNG 5230 or equivalent.

Description
MIMO and space-time coding; multicarrier modulation, OFDM, OFDMA, and SC-FDMA; interference suppression; current and emerging topcis will be discussed. Wireless standards will be cited including 4G, WLAN/MAN/RAN. Practical receiver techniques will be discussed. Simulation projects and literature readings are included.

ECNG 5236 - Information Theory and Coding (3 cr.)

Prerequisites
ECNG 4302 or equivalent.

Description
Introduction to information theory and source and channel codes and their decoders. Topics include measures of information, entropy, and channel capacity in single and multiple antenna systems; Shannon's source and channel coding theorems; Rate distortion theory; Linear block codes including Reed-Solomon codes; convolutional codes; Turbo codes and LDPC codes. Emphasis on decoder implementation and reference to usage of different codes in communications standards.

ECNG 5238 - Advanced Computer Networks (3 cr.)

Prerequisites
ECNG 4306

Description
An overview of the internet layered architecture and functionality, network architecture classifications, advanced routing strategies with emphasis on state-of-the-art routing techniques, multimedia networking, quality of service (QoS) issues and techniques, securing network access via techniques such as VPN, contemporary networking systems and paradigms. The course work includes course projects that involve researching advanced networking topics.

When Offered
Offered occasionally

ECNG 5241 - Microwave Circuit Analysis and Design (3 cr.)

Prerequisites
ECNG 4402 or equivalent.

Description
Microwave circuit theory and techniques. Emphasis on microwave integrated circuits (MIC). Maxwell's equations, planar transmission lines, transmission line theory, impedance, scattering and transmission parameters, Smith chart, impedance matching, power dividers and directional couplers, active two port networks, devices for microwave amplification. Low noise amplifier design, power amplifier design, stability of microwave circuits.

ECNG 5247 - RF and Microwave Systems (3 cr.)

Prerequisites
ECNG 5241 or equivalent.

Description
The general hardware components, system parameters, and architectures of RF and microwave wireless systems. Practical examples of components and system configurations. Communication systems are used to illustrate the applications. Design of basic RF transceiver systems. Requirements allocation to RF units.

ECNG 5248 - RF Integrated Circuit Design (3 cr.)

Prerequisites
ECNG 5241 or equivalent.

Description
Introduction to RF terminology, technology tradeoffs in RFIC design. Architecture and design of radio receivers and transmitters. Low noise amplifiers, power amplifiers, mixers, oscillators, and frequency synthesizers.

ECNG 5249 - Antennas Design and Applications (3 cr.)

Prerequisites
ECNG 5241 or equivalent.

Description
Introduction to frequency spectrum, Maxwell's equations, propagation in free space, infinitesimal dipole antennas, antennas parameters. Aspects of wired antenna will be covered: small dipole, finite length dipole, image theory, monopole, folded dipole, matching techniques, infinitesimal loop antenna, small loop antennas, and helical antennas. Review on rectangular waveguides, rectangular horn, equivalence theory, Love's equivalence theory, H-plane sectoral horn, E-plane sectoral horn, pyramidal horn, parabolic reflectors. Two element array, uniform array, array factor, broadside and end fire arrays, phase scanning arrays, non uniform array, Binomial array, Dolph-Chebyshev array in addition to broadband antennas such as Yagi-Uda, log-periodic antennas. The course will introduce the fundamentals of microstrip antennas.

ECNG 5271 - New Product Design and Development (3 cr.)

Description
The course covers the following topics: Development Processes and Organizations, Identifying Customer Needs, Product Specifications, Concept Generation, Concept Selection, Concept Testing, Product Architecture, Industrial Design, Design for Manufacturing, Prototyping, Robust Design, Patents and Intellectual Property, Product Development Economics, Managing Projects. The focus of the course is integration of the marketing, design, and manufacturing functions to create a new product.

ECNG 5910 - Graduate Independent Study (1-3 cr.)

ECNG 5930 - Advanced Topics in Electronics and Communications Engineering (3 cr.)

Description
Students are allowed to register for this course for a maximum of two times, if content changes.

ECNG 5980 - Research Guidance Thesis (3 cr.)

Prerequisites
ENGR 5940

Description
Consultation on problems related to student thesis.

Notes
Must be taken twice for a total of 6 credits.

ECNG 6211 - Nanoscale CMOS (3 cr.)

Description
The increasing complexity of nanoscale CMOS technology imposes important constraints on the design of analog integrated circuits: while circuit performance using downscaled CMOS is largely improved in terms of speed, other analog figures of merit, such as transistor gain, are degraded. Reduced voltage headroom often requires the adoption of ultra-low-voltage techniques particularly in moderate inversion. Furthermore, variability is an important bottleneck impairing design in scaled technologies. The course covers issues ranging from technology and compact modeling aspects, to analog circuit design retargeting and methodologies for variability reduction using digital tuning, and optimization aspects on the system level.

ECNG 6219 - Design and Analysis of High-Performance Integrated Circuits (3 cr.)

Prerequisites
Consent of instructor.

Description

Issues that arise in the design and anlysis of VLSI circuits at high speeds. Examples are: impact of variations, power management, static and statistical timing analysis, clock distribution and Model Order Reduction. The course will stress intuition in VLSI circuits rather than using blind trial and error approaches. Historic development in key topics and the current state-of-the-art status of these topics, enforcing scientific thinking and problem solving approaches using these real life examples.

ECNG 6235 - Detection, Classification, and Estimation Theory (3 cr.)

Prerequisites
ECNG 5230

Description
Bayesian parameter estimation; linear least squares Estimation; Cramer-Rao lower bound; minimum variance unbiased estimator (MVUE); maximum likelihood estimation (MLE); Kalman filtering; statistical decision theory: Bayes, min-max, Neyman/Pearson, simple and composite hypotheses; optimum (map) demodulation; application to coherent communications, signal processing, and classification including coherent and non-coherent signal detection; M-ary hypotheses testing.

ECNG 6930 - Advanced Selected Topics in Electronics and Communications Engineering (3 cr.)

Prerequisites
Consent of instructor.

Description
Advanced topics selected from current developments in electronics engineering.

ECNG 6931 - Advanced Topics in Wireless Communications (3 cr.)

Prerequisites
ECNG 5233

Description
The course covers advanced and current topics in wireless technology: Practical issues in

wireless receiver design including receiver gain optimization, noise figure and intermodulation products, and automatic gain control; Non-idealities in OFDM technology including phase noise, and frequency and phase offset. Selected current and emerging technologies are also covered. Simulation projects and literature readings are required.

ECNG 6980 - Research Guidance Dissertation (3 cr.)

Description
Consultation on problems related to student thesis. To be taken 11 times for credit.

Engineering

ENGR 1001 - Introduction to Engineering (1 cr.)

Description
History of engineering. Engineering fields of specialization and curricula. The engineering profession: team work, professionalism, ethics, licensing, communication and societal obligations. Engineering support personnel and activities. Engineering approach to problem solving. Examples of major engineering projects. Course project.

When Offered
Offered in fall and spring.
Notes
The course must be taken in the year of admission to the engineering program.

ENGR 1005 - Descriptive Geometry and Engineering Drawing (2 cr.)

Description
Introductory descriptive geometry. Orthographic and pictorial drawing. Sectional views, auxiliary views, and conventions. Dimensioning. Free hand sketching, and both manual and computer-aided drafting.

Hours
One class period and one three-hour lab period.
When Offered
Offered in fall and spring.

ENGR 2102 - Engineering Mechanics I (Statics) (3 cr.)

Prerequisites
MACT 1121 and PHYS 1011

Description
Fundamentals of mechanics. Equilibrium of practices, forces in space, equivalent systems, equilibrium of rigid bodies, distributed forces, center of gravity, internal actions, analysis of simple structures and machine parts. Friction. Moment of inertia.

When Offered
Offered in fall and spring

ENGR 2104 - Engineering Mechanics II (Dynamics) (3 cr.)

Prerequisites
MACT 1122 and ENGR 2102

Description
Kinematics and kinetics of a particle, system of particles, and rigid bodies. Energy and momentum methods. Engineering applications.

When Offered
Offered in fall and spring

ENGR 2105 - Engineering Mechanics (3 cr.)

Prerequisites
MACT 1122 and PHYS 1011

Description
Fundamentals of mechanics, statics of particles and rigid bodies, center of gravity and moment of inertia, internal forces in members, kinematics and kinetics of particles and rigid bodies. Engineering applications.

When Offered
Fall and spring

ENGR 2112 - Strength and Testing of Materials (4 cr.)

Prerequisites
ENGR 2102

Description
Concept of stress and strain in components, mechanical behavior of materials under tensile, compressive, and shear loads, hardness, impact loading, fracture and fatigue. Analysis of stresses and the corresponding deformations in components, axial loading, torsion, bending, and transverse loading. Statically indeterminate problems. Transformation of plane stresses, and Mohr's circle..

Hours
Three class periods and one three-hour lab period
When Offered
Offered in fall and spring.

ENGR 2122 - Fundamentals of Fluid Mechanics (3 cr.)

Prerequisites
PHYS 1021 and (ENGR 2104 or ENGR 2105)

Description
Fluid properties, fluid statics, fluid flow. Conservation of momentum, energy, continuity and Bernoulli's equations. Viscous efforts for laminar and turbulent flow. Steady state closed conduit and open channel flow.

Hours
Two class periods and one three-hour lab period.
When Offered
Offered in fall and spring.

ENGR 2412 - General Programming Lab (1 cr.)

Prerequisites
MACT 1121

Description

This lab is intended for students with no programming background. It teaches students problem-solving via the principle of programming and computing employing a programming language and techniques of current use in engineering. Topics covered include data types, arithmetic, scripts, user- defined functions, inputs, outputs, conditionals, loops, arrays, and modular programming. An emphasis is given to the visualization and graphical representation. Basics of software engineering introduced (code maintenance, debugging, and documentation). Accuracy and speed are discussed as limitations of engineering/scientific computation.

When Offered
Offered in fall and spring and occassionally in winter and summer.

ENGR 3202 - Engineering Analysis and Computation I (3 cr.)

Prerequisites
CSCE 1001 (or MENG 2202 or ENGR 2412) and MACT 2141

Description
Solution of sets of linear equations, roots of equations, curve fitting (interpolation), numerical integration and differentiation, numerical solution of ordinary differential equations, boundary value problems and introduction to the finite difference method of computer programs for problem solving. It includes a programming based project.

When Offered
Offered in fall and spring.

ENGR 3212 - General Electrical Engineering (3 cr.)

Prerequisites
PHYS 1021 and MACT 1122

Description

Active, reactive and apparent power, three-phase systems, electrical measurements, transformers, motors: types, performance and selection generation, transmission and distribution of Electrical Energy, protective and earthing systems, energy management and cost.

When Offered
Offered in fall and spring

ENGR 3222 - Engineering Economy (3 cr.)

Prerequisites
MACT 1121

Description
Economic and cost concepts, the time value of money, single, multiple and series of cash flows, gradients, functional notation, nominal and effective interest rates, continuous compounding, rates of return. Computation and applications, economic feasibility of projects and worth of investments, comparison of alternatives. Replacement, deprecation and B.E. analysis. Introduction to risk analysis.

When Offered
Offered in fall and spring

ENGR 3322 - Fundamentals of Thermofluids (3 cr.)

Prerequisites
PHYS 1011 . Open for Electronics Engineering major only.

Description
Introduction to thermodynamics concepts and definitions; pure substance and ideal gases; the first law of thermodynamics, the concepts of the second law of thermodynamics, continuity; momentum and energy equations; introduction to laminar and turbulent flows; flow in conduits; introduction to turbomachinery; conduction heat transfer: one-dimensional and fins; forced and natural convention heat transfer.

When Offered
Offered in fall.

ENGR 3920 - Special Problems in Engineering (1-3 cr.)

Prerequisites
Consent of instructor and approval of the associate dean for undergraduate studies based on a well-defined proposal.

Description
Independent study in various problem areas related to the offered general engineering (ENGR) courses to supplement the transferred topics in that particular course to match the corresponding ENGR course at AUC.

When Offered
Offered in fall and spring.

ENGR 4990 - Entrepreneurial Development and Innovation (3 cr.)

Prerequisites
Senior Standing

Description
This capstone course provides a general introduction to Entrepreneurship and New Venture Creation. It develops a perception of being an "entrepreneur" in the mind of the student. Students analyze the concepts, elements, processes and behaviors associated with successful entrepreneurship, and develop an insight into how to evaluate and launch ventures and enterprises in all sectors, including business, culture, and society. The course is structured around lectures, interactive sessions, visiting speakers, case study analysis, and community-based learning. The skills of critical and creative thinking, communication, presentation, analysis, synthesis and persuasion are emphasized.

ENGR 5101 - Cross Talk: Implementation Science and Engineering (3 cr.)

Prerequisites
Graduate Standing or Senior Standing

Description
This course has been designed to provide multiple opportunities for students to explore the

interdisciplinary potential of their chosen career path. This course will demonstrate through contemporary literature, class discussion, essential participatory interactions with colleagues and presentations relevant to their major, the value of cross talk between disciplines to provide and implement solutions relevant to today's global community. Each class will be focused on a specific topic or body of knowledge that bring together the natural, behavioral and social sciences together with engineering to articulate a holistic approach to addressing problems in medicine, sustainability, disease diagnosis and mitigation and safety of the built environment with ethical responsibility of earth stewardship. Students will be expected to participate through discussion, questions and a brief capstone presentation. The faculty will set the stage each week in a specific area by providing background information suitable to engage all students, regardless of didactic background. Thus, this course has been designed to build upon concepts relevant to the major and place them in the context of non-traditional application in what has come to be known as implantation science.

ENGR 5202 - Computational Methods in Engineering (3 cr.)

Description

Numerical solution of sets of algebraic and transcendental equations, eigen system analysis, numerical integration and differentiation. Numerical solution of ordinary differential equations, numerical solution of partial differential equations, optimization methods. Applications using MATLAB.

ENGR 5204 - Engineering Statistics (3 cr.)

Description

Probability distributions, sampling distributions, estimation, test of hypotheses, regression, correlation, and nonparametric statistics.

ENGR 5210 - Experimental Methods in Engineering (3 cr.)

Description

Types of experiments. Physical models: type, scale, material selection. Experimental setups. Measurements: electrical measurements and sensing devices; pressure and flow measurements; temperature and thermal measurements; force, strain and motion measurements; computer data storage. Design of experiments: review of statistical inference,

single factor experiments, randomized block and Latin square designs, factorial designs. Regression.

ENGR 5240 - Engineering for a Sustainable Environment (3 cr.)

Description
Solid, industrial and hazardous waste generation and control, with an emphasis on sustainable engineering practices such as environmental impact assessment and performance, waste management, pollution prevention, waste minimization, cleaner production, energy recovery, recycling and reuse.

ENGR 5930 - Selected Topics in Engineering (3 cr.)

Description
A course in contemporary engineering topics.

ENGR 5940 - Graduate Thesis Seminar (3 cr.)

Prerequisites
Completion of 6 cr hrs

Description
Seminars on research topics, research methodology, proposal and thesis writing. The course is intended to serve as a forum in which graduate students can present and discuss their research work and learn various research skills.

When Offered
Fall and Spring

English

ELIN 0399 - Special Topics for English Language Learning (0 cr.)

Prerequisites
Specified per topic

Description
Topics related to innovative English language learning, including academic reading, speaking, and listening.

ENGL 0210 - Academic English for the Liberal Arts (0 cr.)

Description

ENGL 0210 is a non-credit academic integrated English language and content course which provides opportunities for students to develop their necessary communication and critical thinking skills, learning strategies, and attitudes that are essential to success. Sessions are devoted to the comprehension of university-level texts, the development of the reading and listening skills necessary for academic studies with special emphasis on summary writing and higher order reading and thinking skills, the introduction to basic citation tools, the writing of essays on content related topics, as well as the development of oral presentation skills.

ENGL 0211 - Academic English for the Liberal Arts (0 cr.)

Description
ENGL 0211 is a non-credit, concurrent, conference-centered course in which classes meet two days a week for a total of 6 (in-class) instructional hours. Sessions are devoted to the comprehension and summary of university-level texts, student-led discussions, reflective writing, the writing of essays on science and humanities topics, and to the basics of research-based writing within the context of individual conferences.

ENGL 0310 - Effective Writing (for Graduates) (0 cr.)

Description
This course is designed to improve graduate students' academic writing skills. The course provides instruction on academic writing development. Emphasis is given to academic vocabulary building and proper citation skills. Students taking this course are expected to enhance their writing skills through a process approach by producing multiple essay drafts throughout the semester.

ENGL 0311 - Academic Reading (for Graduates) (0 cr.)

Description
This course is designed to improve graduate students' academic reading skills. The course provides instruction on academic reading comprehension, summarizing, and paraphrasing as well as formal outlining. Emphasis is given to academic vocabulary building and reading discussions. Students taking this course are expected to enhance their reading comprehension skills through engaging with and analyzing a variety of texts from different academic fields.

ENGL 0312 - Listening and Speaking (for Graduates) (0 cr.)

Description
This course is designed to improve graduate students' academic listening, speaking and oral communication skills. The course provides instruction on academic note-taking, outlining, presentation and oral communication skills. Emphasis is given to academic vocabulary building and formal presentation skills. Students taking this course are expected to enhance their listening and speaking proficiency skills through engaging with and analyzing a variety of audiovisual materials and academic lectures as well as delivering academic presentations and improving confidence in speaking in academic contexts.

ENGL 0399 - Selected Topic for Core Curriculum (3 cr.)

Description
Course addressing broad intellectual concerns and accessible to all first-year students as part of the Primary Level Core.

Notes
May be taken concurrently with ENGL 0210 .

English & Comparative Literature

ECLT 1023 - Experiencing Creativity: Texts and Images (3 cr.)

Description
The course introduces short literary works juxtaposed to texts and visual material from different fields of knowledge in order to train students to read, differentiate, and interpret texts and images.

ECLT 1099 - Selected Topics for Core Curriculum (3 cr.)

Description
A course that addresses broad intellectual concerns and is accessible to students from any major or class level. The course is offered as part of the Freshman Level of the Core Curriculum.

ECLT 2010 - Introduction to Literature (3 cr.)

Description
For students interested in literature but not necessarily intending to major in the field, this course will enable the student to acquire the tools and learn the methods which would help him/her understand poetry, fiction and drama and develop a deeper appreciation of great literary texts from various places and times.

ECLT 2011 - Survey of British Literature (3 cr.)

Description
The course introduces students to a selection of major works in British Literature from its beginnings to the present. It instructs students to analyze and interpret influential novels, plays, poems, and essays. The course presents the development of British literature historically while emphasizing the cultural and aesthetic dimensions of the texts.

ECLT 2019 - Introduction to American Studies (3 cr.)

Description
This interdisciplinary course is designed to introduce students to key events and texts in the history and culture of the United States. Using films, literature and historical texts, the course will examine American culture within a historical context.

ECLT 3001 - Medieval Literature (3 cr.)

Description
The course introduces the student to the literary culture and counter-culture of the Middle Ages through reading selected autobiographical and fictional texts from St. Augustine, Abelard, Heloise, Dante, Chaucer, Attar and *The Arabian Nights.*

ECLT 3002 - Renaissance and Early Modern Literature (3 cr.)

Description

A survey of Renaissance authors, beginning with Petrarch and the origins of the Renaissance in Italy. The course traces this cultural revolution as it spread from Italy to other parts of the European continent and finally to Tudor England.

ECLT 3005 - Romanticism (3 cr.)

Description

Major European and American ideas and literary works of the period 1760-1848.
Works not originally written in English will be read in English translations.

ECLT 3006 - Nineteenth-Century European Literature (3 cr.)

Description

Major European works of fiction, poetry and drama from the period between 1789-1914.
Works not originally written in English will be read in English translations.

ECLT 3008 - Modern European and American Literature (3 cr.)

Description

Selected readings of American and European authors representing literary trends from 1900 to the present

ECLT 3010 - American Literature to 1900 (3 cr.)

Description

Selected readings of literary works beginning with pre-Columbian oral traditions and moving from the colonial era to the early national period through to the late nineteenth century.

Cross-listed

Same asAMST 3010.

ECLT 3011 - Modern American Literature (3 cr.)

Description
Works of twentieth-century American writers. The reading list may be chosen to reflect changing ethnic and cultural phenomena and will vary from year to year.

Cross-listed
Same asAMST 3011.

ECLT 3014 - Literature and Philosophy (3 cr.)

Description
The course concentrates on the intersection of the literary mode with the philosophical quest in Eastern and Western writing. Students are trained to analyze philosophical myths, tales, poems and dialogues as well as grasp the symbolic structures and expository techniques of philosophers.

Cross-listed
Same as PHIL 3014
When Offered
Offered in Spring.

ECLT 3030 - Literature and Cinema (3 cr.)

Description
The course investigates the relationship between literature and cinema and how they complement each other in representing textually and visually a broad theme, a historical period, or a national concern.

Cross-listed
FILM 3030

ECLT 3032 - World Literature (3 cr.)

Description

The course covers seminal literary works in both Western and non-Western canons, assigned in editions of excellent English translations.

ECLT 3033 - African Literature (3 cr.)

Description
The course concentrates on modern literature of the African continent with special emphasis on sub-Saharan literary works, including their correspondence to North African literature. Texts by prominent writers from Africa (men and women/ black and white) will be analyzed in relation to the indigenous culture and oral creativity, as well as in relation to the colonial and post-colonial experience.

ECLT 3045 - Literature and Gender (3 cr.)

Description
The course investigates gender roles in literary texts and the image of women in different historical periods and cultural settings. Readings include Feminist and anti-Feminist literary and theoretical texts drawn from the North and the South.

ECLT 3046 - Third World Literature (3 cr.)

Description
The course analyzes Third World literary texts from Asia, Africa and South America in their historical context and their contribution to post-colonial discourse.

ECLT 3048 - Contemporary Literature (3 cr.)

Description
The course explores literary texts which marked the period following World War II as well as very recent European and American works in a comparative context.

ECLT 3052 - Recurrent Themes in Literature (3 cr.)

Description
The course revolves around a selected literary theme (such as Romance, Friendship, or Loss

among others), recurring in different cultures and regions of the world or/and recurring through the ages. The literary theme might be in one genre (drama, fiction, or poetry) or in a combination of genres.

ECLT 3053 - Modern Drama (3 cr.)

Description
A study of mainly European drama in the period from Ibsen to the present, including plays by Shaw, Chekhov, Strindberg, Pirandello, Brecht, Sartre, Beckett, Pinter and others, and dealing with related developments in theatre, cultures and society.

ECLT 3060 - Shakespeare (3 cr.)

Description
Analysis of Shakespearean drama, including tragedy, comedy, history and romance. The course begins with an examination of the theatrical and historical content in which Shakespeare lived and wrote. It then focuses on individual plays, paying attention to the details of Shakespearean language, as well as to the broader issues of power, politics and gender.

ECLT 3070 - Creative Writing (3 cr.)

Description
A course on literary writing designed to accommodate the needs of diverse students. Emphasis is on developing one's own story-telling, play-writing, and/or poetic skills by studying the craft of influential authors from different regions and traditions. The students will meet and interact with Cairo-based emerging and established creative writers as part of their course work.

ECLT 3099 - Selected Topics (3 cr.)

Description
Examination of specific topics in genre and other areas of special interest and expertise of the faculty. May be repeated for credit if content changes. In recent years, the following have been offered under this heading: *The Arabian Nights,* The Lyrical Mode (in English, Arabic and French), Autobiographies, Literature and Cultural History, Literature and the Visual Arts,

Literature and Urban Culture, Theory of Narrative, The European Novel, Figures of the Scared, T. S. Eliot, The Bloomsbury Group and Albert Camus.

ECLT 4000 - Independent Study and Readings (3 cr.)

Prerequisites
Consent of department.

Description
Guided readings in selected topics in English and Comparative Literature.

ECLT 4099 - Capstone Seminar: Selected Topics (3 cr.)

Description
Examination of specific themes and other topics of special interest. This coure is designed to meet the requirements of a capstone seminar for the core curriculm. May be repeated for credit if content changes.

ECLT 5101 - Visual, Literary, and Critical Approaches to Gender in MENA (3 cr.)

Description
The course immerses students in the literary, historical, and theoretical debates within the academic fields of Middle East gender and women's studies. Interdisciplinary approaches as well as varieties of theoretical positions and visual representations are discussed critically. Acknowledging the entanglements of regions, scholarly debates and political struggles, this course locates the Middle East/North Africa (MENA) within its worldly context.

Cross-listed
GWST 5101
When Offered
Offered yearly.
Repeatable
Not repeatable

ECLT 5106 - Greek Classics in Translation (3 cr.)

Description
Major works of Greek literature since 700 B.C., chosen on the basis of merit and influence and studied in the most artistic translations.

ECLT 5108 - History of Literary Criticism (3 cr.)

Description
Study of central documents in the history of literary criticism, from Plato to the Romantics.

ECLT 5109 - Modern Literary Criticism (3 cr.)

Description
Analysis of the major trends in modern literary theory, such as Russian formalism, new criticism and post-structuralism.

ECLT 5110 - Renaissance Writers (3 cr.)

Description
Detailed study of the works of selected British or European writers from Petrarch to Shakespeare.

ECLT 5116 - The Romantic Movement (3 cr.)

Description
Selected critical problems in the Romantic movement..

ECLT 5117 - Nineteenth-Century Writers (3 cr.)

Description
Works of selected major nineteenth-century novelists and poets.

ECLT 5123 - Modern Poets (3 cr.)

Description
Readings and analyses of works of major British, European, and American poets from the beginnings of the Symbolist and Imagist movements to the present.

ECLT 5131 - The Modern Novel (3 cr.)

Description
Works of selected novelists of the twentieth century.

ECLT 5140 - Readings in American Literature (3 cr.)

Description
Guided reading.

ECLT 5142 - Readings in French Literature (3 cr.)

Description
Guided reading.

ECLT 5143 - Readings in British Literature (3 cr.)

Description
Guided reading.

ECLT 5199 - Selected Topics (3 cr.)

Description

Guided reading, research, and discussion. In recent years, the following courses have been offered under this heading: The Arabian Nights, The Lyrical Mode (in English, Arabic and French), Autobiographies, Literature and Cultural History, Literature and the Visual Arts, Literature and Urban Culture, Theory of Narrative, The European Novel, Figures of the Scared, T. S. Eliot, The Bloomsbury Group and Albert Camus.

Repeatable
May be repeated for credit if content changes.

ECLT 5255 - Research Methods in Literature (3 cr.)

Description
The course introduces scholarship, debates, methods, and professional trends in the field of literary studies, considering questions of theory, application, interdisciplinary, and textuality. The goal of this course is to train students in the methods that they will use to conduct literary research in their papers and theses, giving careful attention to library resources and academic style.

ECLT 5298 - Research Guidance and Thesis (no cr.)

Prerequisites
Approval of advisor.

Description
Supervision in the preparation and writing of the master's thesis.

Entrepreneurship

ENTR 3102 - Entrepreneurship and Innovation (3 cr.)

Prerequisites
MGMT 3201 or BADM 2001

Description
This is an interdisciplinary course combining skills from all areas of business. It focuses on the creation of new business ventures with an emphasis on personal rather than corporate goals. Special focus is placed on problems encountered by the entrepreneurs in the Middle East and development of solutions to those problems. The course also prepares students for intrapreneur or entrepreneur business careers in startups and small and large corporations. It offers and understanding of the stages of business formation and what activities are appropriate at each stage of business development to meet financial goals including preparations of feasibility studies for business start-ups.

ENTR 3201 - Entrepreneurial Finance and Venture Capital (3 cr.)

Prerequisites
FINC 2101 or instructor approval.

Description

This course teaches about financing of new entrepreneurial ventures. The course will examine both the entrepreneur's and investor's perspective with special emphasis on the venture capital process.

ENTR 4301 - Entrepreneurship Lab: Developing and Launching a New Venture (3 cr.)

Prerequisites
ENTR 3102

Description
This course is specially intended for non-business students, minors in entrepreneurship, and students writing business plans for new ventures. It concentrates on the mechanics of constructing a creative, realistic and effective business plans for a new concept that the student team has generated and developed. Thus, it is intended as a "hands-on" experience that explores the process that a person must go through to put together a proper business plan for a start-up venture.

ENTR 4302 - Corporate Entrepreneurship and Innovation (3 cr.)

Prerequisites
ENTR 3102 or instructor approval.

Description

The course aims at understanding the DNA of entrepreneurial firms through answering the questions of what are the characteristics of renowned corporates, why there is a need for developing corporate innovation and venturing strategies and how to construct the elements of entrepreneurial innovative adaptive strategies. The course will stress on the related issues to creating intrapreneurship through leadership, strategic, financial, organizational as well as other

managerial functions. The course will also tackle strategies for sustaining competitive advantage within the business world.

ENTR 4303 - Social Entrepreneurship, Innovation and Sustainability (3 cr.)

Prerequisites
Junior standing

Description

This course introduces students to the social entrepreneurship phenomenon which combines the passion of a social mission with an image of business-like discipline, innovation, and sustainability. The course discusses how social entrepreneurial practices blur the traditional lines between nonprofit enterprise, government and private sector contributes to the generation of a unique set of opportunities and challenges that characterize this new landscape of entrepreneurship.

ENTR 4501 - Managing and Growing Family Businesses (3 cr.)

Prerequisites
ENTR 3102

Description

This course will examine the causes and consequences of the creation of family fortunes, with a focus on the practical implications for family decision-making and how to create an institutional organization. The course will address challenges facing the family business with an insight on the succession planning and governance. The course will present several case studies of successful family business as well as failures with a stress on the cultural aspects associated with the local Egyptian one. The course also discusses the organizational behavior issues related to family businesses and what are their impacts on the business sustainability.

ENTR 4502 - Innovation and Technology (3 cr.)

Prerequisites
Junior standing

Description

The course is a quest to understand the role of innovation and technology in entrepreneurial organizations as well as in society. The course will cover the different types of innovation in an organization with a special focus on business model innovation. The concept of technology will be addressed through understanding the fundamentals of product/service and process innovation as well as technology management in prominent organizations. Also the concept of intellectual property rights management and protection as well as new product/service development will be covered as contemporary concepts affecting the organizational effectiveness.

ENTR 4503 - Digital Strategy (3 cr.)

Prerequisites
ENTR 3102

Description
This course focuses on the key skills, tools, methods, needed for creating effective digital innovations and building digital platforms that will boost customer acquisition and engagement and the diverse business models for sustaining these platforms. The course will deliberately expose the students to a large number of digital tools and tactics with the aim of addressing digital strategy from a 360 degree view analyzing and improving the design and content of every touch point of your digital platforms.

ENTR 4970 - Special Topics in Entrepreneurship (3 cr.)

Prerequisites
Consent of Instructor.

Description
Considers selected topics of current relevance in Entrepreneurship.

Notes
Enrollment in this course is limited, and priority is given to students from within the major.

ENTR 5201 - Entrepreneurship and Regional Opportunities (3 cr.)

Description

This is the first of two project-based courses that will focus on Entrepreneurial start-ups and Family Businesses in the MBA. It follows an experiential based learning pedagogy which allows students to explore different opportunities in the MENA and Africa markets that might lead to the creation of a business venture. Throughout this course students will scan regional prospects, create and evaluate entrepreneurial opportunities, assess resources, test markets, and form teams driven by creativity and leadership that will lead to development of the first stage of an entrepreneurial venture.

In coordination with AUC Venture Lab, students will develop and practice conducting an entrepreneurial pitch, develop a business model to your proposed venture and go through the experience of assessing the feasibility, and the business model of that venture. Students will explore and discover the different ideas and pivot during that stage in an attempt to improve the viability of their proposed venture.

Some of the activities students will be doing in the course:

1. Assess your personal entrepreneurial capacity
2. Differentiate between ideas and opportunities
3. Differentiate between entrepreneurial and management thinking
4. Scan regional opportunities and evaluate regional start-ups
5. Experiment with idea generation techniques to help create, develop and assess your ideas
6. Formulate a business concept, pitch it, defend it, and determine its feasibility
7. Learn to pivot, modify your business idea as you gain more insights and market information

ENTR 5202 - Developing an Entrepreneurial Venture (3 cr.)

Prerequisites
ENTR 5201

Description
This is the second of two project-based courses that will focus on Entrepreneurial start-ups and Family Businesses in the MBA. It builds on the concepts and skills developed in the first project-based course. It is based on experiential learning with the objective of exposing the students to actual experimentation with their start-up business.

Students will take the business concept, idea and model that was developed in the pre-requisite

course and continue the entrepreneurship journey by establishing an enterprise that will strive to achieve profit and gain first steps towards sustainability.

During this course, students will go through three cycles of reflection on their entrepreneurial venture:

1. Introducing their products/services to the customers and gain first-hand knowledge on the reaction of the market. This includes meeting customers outside the class, pitching their value proposition, and negotiating with customers.
2. Soliciting resources from suppliers/partners, conducting negotiations, quality control and ensuring delivery.
3. Assessing their products, pricing, promotion, and people utilized in the process.

After each phase Students will have an opportunity to pivot by changing their business model as a result of their evaluation of the previous phase and experience.

ENTR 5211 - Developing an Entrepreneurial Mindset (1.5 cr.)

Prerequisites
Co-requisite: ACCT 5211

Description
This course will address entrepreneurship concepts as a prevailing phenomenon that is contributing to the economies of nations, and at the same time enhancing the well being of the human race. The concepts covered includes; innovation, value proposition, business models, resource allocation, competitive advantage, business strategies, lean startups. The course is mainly case oriented where students will relate the different concepts through the analysis of Egyptian as well as international cases. An interactive learning pedagogy will be adopted throughout the course, where discussions, debates, and role playing will be the main tools used. On the other hand, experiential learning will be enhanced through discussions with guest speakers' entrepreneurs' who can share their knowledge with the students.

Environmental Engineering

ENVE 5250 - Water Quality Control (3 cr.)

Description

Water quality parameters: standards and analysis; theory and basic processes for modeling fate and transport of pollutants in surface water bodies; integrated water pollution control strategies.

ENVE 5251 - Unit Operations in Environmental Engineering (3 cr.)

Description
Theory and design of unit operations and processes in environmental engineering, emphasizing water and wastewater treatment; namely: physical, chemical and biological unit processes, sludge handling processes.

Cross-listed
Same as CENG 4553 but with additional requirements for graduate students.

ENVE 5252 - Air Pollution Control Engineering (3 cr.)

Description
Air pollutants sources, sinks, and residence time. Costs of air pollution. Control strategies and systems design. Mathematical models of air pollution. Monitoring and control instruments.

ENVE 5254 - Solid and Hazardous Wastes Engineering (3 cr.)

Description

Solid wastes - Nature, generation and collection. Local and regional management strategies including recycling and recovery of useful products, landfilling, and incineration. Hazardous wastes - Nature, generation and collection. Risk assessment. Management strategies including source reduction, treatment, recovery, landfilling, and incineration.

ENVE 5255 - Environmental Chemistry (3 cr.)

Description
Chemical principles for quantitative solution of environmental engineering problems with a focus on aqueous systems. Concept of chemical equilibrium is developed to determine mass distribution of environmentally significant substances. Applications of acid-base, coordination,

oxidation-reduction, and organic distribution reactions are developed for water and wastewater systems.

ENVE 5258 - Groundwater Hydrology and Contamination (3 cr.)

Description
Groundwater and well hydraulics with applications to water supply and control of contaminants; groundwater contamination; development, solution and application of contaminant transport equations; groundwater remediation; introduction to unsaturated flow.

ENVE 5910 - Independent Study in Engineering (3 cr.)

Description
Independent study in various problem areas of engineering may be assigned to individual students or to groups. Readings assigned and frequent consultations held.

Notes
(Students may sign for up to 3 credits towards fulfilling M. Sc. requirements).

ENVE 5930 - Advanced Topics in Engineering (3 cr.)

Prerequisites
Prerequisite: consent of instructor.

Description
Topics to be chosen every year according to specific interests.

Repeatable
May be taken for credit more than once if content changes.

ENVE 5980 - Research Guidance Thesis (3 cr.)

Prerequisites
ENGR 5940

Description
Consultation on problems related to student thesis.

Notes
Must be taken twice for a total of 6 credits.

ENVE 6250 - Advanced Treatment Processes (3 cr.)

Description
Description, design, and applications of advanced technologies for removal of contaminants from environmental media; membrane technologies - nanofiltration, ultrafiltration, reverse osmosis, membrane bioreactors; adsorption; biological activated carbon; biofilters; pulsators; tube settlers; advanced oxidation processes - ozonation, UV radiation, photo-oxidation, chemical oxidation and reduction; cryogenic and thermal processes.

ENVE 6910 - Independent Study in Environmental Engineering (3 cr. max.)

Description
Independent study in various problem areas of environmental engineering may be assigned to individual students or to groups. Readings assigned and frequent consultations held.

ENVE 6930 - Advanced Selected Topics in Environmental Engineering (3 cr.)

Description
Topics chosen according to special interests of faculty and students. May be repeated for credit more than once if content changes.

ENVE 6980 - Research Guidance Dissertation (3 cr.)

Description
Consultation on problems related to student thesis. To be taken 11 times for credit.

Executive Business Administration

EMBA 5601 - Leading and Navigating Strategic Change (1.5 cr.)

Description

This module is dedicated to unraveling the intricacies of organizational change. It investigates the causes behind the frequent failure of change initiatives and offers essential strategies for leaders to skillfully guide and navigate the change process. The module places significant emphasis on reducing resistance, cultivating unwavering commitment, and fostering a sense of enthusiasm for transformative change. By understanding the complexities, employing effective strategies, and inspiring stakeholders, leaders can successfully drive and embrace organizational change.

EMBA 5603 - Data-Driven Decision Making (1.5 cr.)

Description

In this digital era, using data analytics is not optional anymore, it is a must. Having the skills of data analytics is mandatory and required at all levels of the organization. Decision making process can be carried out qualitative or/and quantitative. In the recent past, qualitative decision making was the dominate method for multiple reasons under which is the urgency in taking the decision because of the lack of quantitative data. Even if qualitative decision making looks faster for many decision makers, there is no way to quantify the impacts and risks. Today, each organization is seeking ways not only to optimize their decision-making process but also to achieve real-time decisions. These can only be accomplished by continuously collecting quantitative data that consists of structural and unstructured nature. This data comes from different sources and possesses temporal characteristics which are totally ignored or overlooked during the qualitative decision-making activities. Successful organizations learned how to gain competitive advantage through building and developing its data analytics capabilities in terms of technology, culture and human capital. In this course, the participants will learn about the different levels of data analytics; descriptive, diagnostic, predictive and finally prescriptive. Moreover, during this course, the participants will learn the quantitative decision-making methodology including identifying the business issue, developing a proper framework, and identifying the required data. Finally, the participants will learn the fundamentals of various quantitative methods that will help them optimize their decision such as Monte Carlo simulation, linear programming, data visualization and forecasting techniques.

EMBA 5604 - Economic Analysis for Business Decisions (1.5 cr.)

Description

This course provides an overview of the economic concepts and tools that are relevant for business decision making in a dynamic and uncertain global environment. The course aims to equip students with the analytical skills and tools to apply economic reasoning and evidence to various business problems and scenarios, and to evaluate the effects and implications of different economic policies and events.

It covers topics such as:
Competition and pricing, global market fluctuations, trade wars and government policy and currency risk.

EMBA 5605 - Financial Statements Engineering (1.5 cr.)

Description

In this new global economy accounting financial statements are very important in making decisions. This module focuses on the development, analysis and use of these statements and what assumptions and concepts accountants use to prepare them, and why they use those assumptions and concepts. The module also focuses on understanding financial statements and how to use them to make decisions. This module also includes discussions of most common accounting shenanigans used by accountants to alternate the results of financial statements to manipulate decisions made.

EMBA 5606 - Financial Management (1.5 cr.)

Description

The course aims to equip students with the analytical skills and tools to apply financial reasoning and evidence to various business problems and scenarios, and to evaluate the effects and implications of different financial policies and events. It covers topics such as financial analysis and planning, Capital budgeting and valuation, risk and return.

EMBA 5607 - Corporate Financial Management (1.5 cr.)

Description

It analysis corporate financial decisions. It introduces the structure of markets, the evaluation of assets and concepts of risk-adjusted returns. It addresses essential topics as market efficiency, capital structure, dividend and stock repurchase policy, and firms' use of options and convertible

securities. By the end of this module, participants should be able to understand the underlying analytical framework for corporate finance.

EMBA 5613 - Effective Leadership (1.5 cr.)

Description

The leadership module moves participants to a deeper understanding of their leadership competencies and personality style through personal analysis and assessments. Participants will be able to integrate managerial skills and effective concepts of leadership (Traits, Competencies and Ethics) of the work place. They will learn how to understand to better coach others when in leadership role and how to flex their styles as needed to lead others more effectively. They will be able to refine and update their personal development goals, as needed in response to circumstances on the job and further feedback in providing leadership solutions. The module also focuses on team building and effective strategies for better group decision making, team leadership, resolving conflict within and across teams, evaluating and rewarding teams' performance and developing a team-focused organizational culture.

EMBA 5614 - Navigating the Frontiers of Strategic Innovation Management (1.5 cr.)

Description

Innovation is regarded as a critical source of competitive advantage in an increasingly volatile environment. This module explores the theory and practice of innovation as a process and as an outcome.

Participants are exposed to the skills, knowledge, tools, and mindset necessary to address the following areas: 1) how to unleash the creative potential of individuals and groups in an organization? 2) how to spot and seize innovation opportunities? 3) how to best manage innovation efforts from the idea to the market? 4) how to align the innovation initiatives with the firm's business strategy to sustain its competitive edge?

The module ought to be of assistance to any manager wishing to understand how to lead their organization to the next level by implementing a holistic approach to strategic innovation management.

EMBA 5616 - Mastering the Art of Negotiation (1 cr.)

Description

It focuses on negotiation as an important process in resolving conflicts that may arise from differences in interests such as goal, priorities or competition from limited resources. It examines stakes, power, interdependence, trust, coalitions, communication, and personal negotiation styles. Participants practice cross-cultural negotiations, dispute resolution, coalition formulation. It addresses multiparty negotiations, extremely competitive negotiations and negotiations via Information Technology (IT).

EMBA 5617 - Designing, Launching and Growing Entrepreneurial Ventures (1.5 cr.)

Description

This module provides participants with an entry to the entrepreneurial business building process, mindset, and supporting ecosystem through real-life case-based analysis of innovative enterprises. We examine the life-cycle of launching and growing entrepreneurial ventures, with a special focus on technology-enabled startups, covering ideation and innovation, product design, go-to-market, growth, investments, and exit, within the local, regional and international entrepreneurship ecosystem.

EMBA 5618 - International Business Tour II (2 cr.)

Description

This program focuses on complementing AUC competences in the host country. It involves meetings with business leaders and attending lectures by host university faculty. The program is an international live-in week that offers diverse perspectives and exploration of new topics. Students actively engage in site visits, fieldwork, case studies, simulations, and interactive workshops, fostering critical thinking and problem-solving skills. The program goes beyond the classroom, providing subject matter insights and cultural exchange opportunities. It equips students with tools and experiences for success in a globalized world, fostering interdisciplinary learning. Overall, it is a transformative educational experience that enriches students' journey.

EMBA 5620 - Corporate Governance and Sustainability in Action (1.5 cr.)

Description

This module focuses on how corporate governance, as a set of processes, customs, policies, laws and institutions, affects the way the organization is directed and controlled. It examines how the quality of corporate governance system influences prices shares of the company and the cost of raising capital and how it complies with the legal and regulatory requirements. It addresses some important topics as the separation of ownership and control, property rights, reconciling conflicts between stakeholders and the role of the board of directors in ensuring accountability, fairness and transparency in the firm's relationship with all its stakeholders.

EMBA 5623 - Capstone Consulting Project: Developing a CEO Mindset for Strategic Business Transformation (4 cr.)

Description

In this integrative capstone project, participants learn how to develop their own "CEO Mindset." They work in a strategy consulting team serving a real-life client to transform their business and respond to an actual business challenge or opportunity. Participants learn how to define the problem, scope their project, develop a rigorous and analytical methodology, collect and analyze real-life data, synthesize and communicate their findings to senior management. This module is focused on integrating the knowledge and skills acquired throughout the program and connecting them to real-life strategic business challenges and opportunities.

EMBA 5624 - Independent Study - Selected Topics in Management (1-3 cr.)

Description

This module has been designed for professionals who want to improve their management skills, either to improve their roles or to progress within their current company. It also offers students the opportunity to develop their critical thinking on different topics and how they relate them to organizational issues of opportunity, inclusion, creativity and innovation and organizational effectiveness, etc.

This will be delivered through supervised guided readings, research, and discussions on specific selected topics in Executive Management studies.

EMBA 5625 - Doing Business in Africa (1.5 cr.)

Description

This course equips students with an appreciation of the challenges and opportunities of doing business in Sub-Saharan Africa (SSA). The course enables students to investigate the multiple prospects for doing business in SSA and deals with the contextual factors that impact the potential success of organizations in SSA. It covers methods to examine the risk of doing business in SSA, be that for a new venture, or geographical expansion of an existing enterprise. This includes sensitizing participants about the different drivers of the ease of doing business in SSA like different regulatory frameworks, exchange controls, immigration requirements and ways of structuring the engagements.

Notes

This course will be offered in cooperation with a partner university.

EMBA 5626 - International Business Tour I (2 cr.)

Description

This program focuses on complementing AUC competences in the host country. It involves meetings with business leaders and attending lectures by host university faculty. The program is an international live-in week that offers diverse perspectives and exploration of new topics. Students actively engage in site visits, fieldwork, case studies, simulations, and interactive workshops, fostering critical thinking and problem-solving skills. The program goes beyond the classroom, providing subject matter insights and business ideas exchange opportunities. It equips students with tools and experiences for success in a globalized world, fostering interdisciplinary learning. Overall, it is a transformative educational experience that enriches students' journey.

EMBA 5627 - The Art of Business Strategy (1.5 cr.)

Description

This module addresses two central questions that top managers ought to answer: 1) What businesses shall we get into or out of (Where to play?), and 2) How to compete (How to win?). Participants are exposed to the latest approaches for crafting, executing, and integrating a firm's corporate, competitive, and functional strategies to improve and sustain its market competitiveness. Participants will also be introduced to the relevant analytical tools for diagnosing the competitive landscape and assessing alternative strategic directions. The ultimate purpose is to help break down the narrow operational outlook that managers may have and let participants appreciate how their different job functions fit into the overall strategic development of the organization.

EMBA 5628 - Dynamic Marketing Strategy (1.5 cr.)

Description

The module helps the participants to apply analytic perspectives focusing on the integrative strategic view of marketing. It introduces the theories underlying marketing decision-making to help in the application of advanced marketing frameworks. A dynamic marketing strategy course covers topics such as: Evaluating the market attractiveness, measuring and improving marketing activities using data and analytics, managing your brand identity and reputation in the market, etc. This course focuses on helping participants develop effective marketing tactics in each phase of the product life cycle and being market-driven and customer-focused.

EMBA 5629 - Marketing Management (1.5 cr.)

Description

This module covers the strategies and tactics used to reach and engage customers through various online platforms. Digital marketing is essential for any business that wants to leverage the power of the internet and digital platforms to create value for its customers and stakeholders. Some of the subtopics in digital marketing are SEO (search engine optimization), SEM (search engine marketing), SMM (social media marketing), content marketing, email marketing, influencer marketing, etc. The module introduces the participants to use web analytics, and data visualization tools to measure and improve the performance of digital marketing campaigns.

EMBA 5630 - Master Class I (1 cr.)

Description

This module is a dive deep into the latest hot topics shaping the market. This module is designed to empower executives with the knowledge and strategies needed to navigate and capitalize on emerging trends such as digital disruption, sustainability, data analytics, innovation, and global market dynamics. Led by industry experts and experienced faculty, participants engage in rigorous discussions, case studies, and experiential learning to develop a holistic understanding of these critical subjects. With a focus on practical application and strategic decision-making, this course equips leaders with the tools and insights to stay ahead in today's rapidly evolving business landscape.

EMBA 5631 - Navigating the Dynamics of Strategic Operations and Supply Chain Management (1.5 cr.)

Description

This course presents a comprehensive framework tailored for executives seeking to navigate the complexities of operations and supply chain management. Participants will develop the expertise required to identify operational challenges, optimize business processes, and instill a culture of sustainability and continuous improvement. Emphasizing data-driven decision-making and key performance indicator assessment, the course addresses the integration, efficiency, and effectiveness of managerial functions in support of organizational strategic goals, enhancing business decisions, and achieving competitive advantage. The course strongly links operations with marketing and business strategy and developing global business networks. Special attention is given to strategic outsourcing strategies, and executives will examine the global logistics landscape, considering its impact on supply chain strategy and international economic influences on product choices, demand and supply dynamics, and marketing and distribution. Addressing executive-level challenges in supply chain management, including factors like trade, politics, and technology, the module prepares leaders to navigate the evolving landscape of supply and demand. This course equips executives with the strategic acumen necessary for effective leadership in the dynamic and interconnected realm of modern supply chain management.

EMBA 5632 - Master Class II (1 cr.)

Description

This module is a dive deep into the latest hot topics shaping the market. This module is designed to empower executives with the knowledge and strategies needed to navigate and capitalize on emerging trends such as digital disruption, sustainability, data analytics, innovation, and global market dynamics. Led by industry experts and experienced faculty, participants engage in rigorous discussions, case studies, and experiential learning to develop a holistic understanding of these critical subjects. With a focus on practical application and strategic decision-making, this course equips leaders with the tools and insights to stay ahead in today's rapidly evolving business landscape.

EMBA 5633 - Master Class III (1 cr.)

Description

This module is a dive deep into the latest hot topics shaping the market. This module is designed to empower executives with the knowledge and strategies needed to navigate and capitalize on emerging trends such as digital disruption, sustainability, data analytics, innovation, and global market dynamics. Led by industry experts and experienced faculty, participants engage in rigorous discussions, case studies, and experiential learning to develop a holistic understanding of these critical subjects. With a focus on practical application and strategic decision-making, this course equips leaders with the tools and insights to stay ahead in today's rapidly evolving business landscape.

EMBA 5634 - Business Challenges and Legal Environment (1.5 cr.)

Description

This module relates business challenges to its legal environment. It provides broad analysis of how laws influence management decisions and strategies, how to review the characteristics of various legal structures and how to set the legal framework for doing business. It focuses on how business decisions and transactions should comply with the law. It looks at how competition law fits in a larger context of economic policy.

Film

FILM 1099 - Selected Topics for Core Curriculum (3 cr.)

Description
A course that addresses broad intellectual concerns and is accessible to students from any major or class level. The course is offered as part of the Freshman Level of the Core Curriculum.

When Offered
Offered occasionally

FILM 2099 - Selected Topics for Core Curriculum (3 cr.)

Prerequisites
RHET 1010

Description
Course addressing broad intellectual concerns and accessible to all students, irrespective of

major.

When Offered
Offered occasionally.

FILM 2120 - Introduction to Film Art (3 cr.)

Description
An introduction to the art of cinema, covering basic film language, aesthetics, history and theory. Narrative feature (fiction), documentary (non-fiction), and avant-garde modes are analyzed in detail, and relevant films are screened in class to stimulate learning and discussion.

When Offered
Offered during Fall and Spring
Notes
Required for the Major and Minor in Film.

FILM 2121 - Introduction to Fiction Filmmaking (3 cr.)

Description
This practice-based course offers an introduction to fiction filmmaking addressing basic concepts of narrative storytelling and its technical skills, including writing, directing, editing, and a survey of camera, lighting and sound. In addition to in-class exercises and assignments, students are expected to produce a short fiction film as a final project.

When Offered
Offered in Fall and Spring.

FILM 2123 - Introduction to Non-Fiction & Experimental Filmmaking (3 cr.)

Description
This practice-based course introduces alternative forms to traditional fiction narrative films by surveying approaches and methods of non-fiction, experimental, and hybrid filmmaking. Students are expected to work on film essays, documentaries, and archive-based projects.

FILM 3030 - Literature and Cinema (3 cr.)

Description
This course investigates the relationship between literature and cinema and how they complement each other in representing textually and visually a broad theme, a historical period, or a national concern.

Cross-listed
ECLT 3030

FILM 3070 - Selected Topics in Film (3 cr.)

Description
In-depth examination of specific topics in film determined by the special interests and expertise of the faculty..

When Offered
Offered occasionally.
Repeatable
May be repeated for credit if content changes

FILM 3071 - Selected Topics in Filmmaking (3 cr.)

Prerequisites
FILM 2121

FILM 2123

Description
In-depth examination of specific topics in filmmaking determined by the special interests and expertise of the faculty.

When Offered
Offered occasionally.
Repeatable
May be repeated for credit if content changes.

FILM 3110 - World Cinema (3 cr.)

Prerequisites
FILM 2120

Description
A survey of key international cinemas from the post-Second World War period to the present day, which have come to be understood retrospectively, during the contemporary period, as "world cinema." Students will gain critical exposure to films and film movements such as Third World cinema, European New Waves and art films, the Japanese New Wave, Brazilian cinema novo, and the more recent North American "indie" cinema. In the process, students will learn how to locate and subject the socio-economic and ideologico-political conditions of world cinema to serious analysis and critique.

When Offered
Offered in Fall or Spring.

FILM 3115 - Topics in American Cinema (3 cr.)

Description
This course provides various outlooks on American Cinema. The topics can include areas that deal with history, genres, filmmakers, trends, political changes, industry, as well as other considerations. This course is designed for students from across disciplines and carries no prerequisites.

When Offered
Offered occasionally.

FILM 3120 - Cinema in Egypt and the Arab World (3 cr.)

Description
This course examines various aspects of cinema in Egypt and the Arab World in order to understand its history, and determine the themes, the styles, and the character of this cinema which has been historically among the most influential in national world cinemas. Topics could include areas such as New Arab Cinemas, classical Egyptian cinema, the Arab film industry, independent Arab cinema, among others.

FILM 3125 - Topics in National Cinemas (3 cr.)

Description
This course variably focuses on a specific national and, where appropriate, regional cinema, such as that of Germany, France, Argentina, Brazil, Japan,Italy, England, Sub-Saharan Africa, India, China, Canada, Mexico, Cuba, Eastern Europe, Iran, Turkey, Russia or Scandinavia. The course considers recent shifts in the study of national cinemas that accounts for understanding the notion of "identity" in a global context. The course is open to students from across disciplines.

FILM 3130 - Film Theory I (3 cr.)

Prerequisites
FILM 2120

Description
This course provides a critical overview of major theoretical approaches to the analysis and critique of cinematic art, including early theories of aesthetics, structure and form; modernist political and avant-garde critiques; theories of audience and spectatorship and the cinematic apparatus; contemporary cultural studies. Films will be screened in class to facilitate understanding of the assigned theoretical readings. Required for Film majors.

When Offered
Offered in fall or spring.

FILM 3132 - Film Theory II (3 cr.)

Prerequisites
FILM 2120

Description

This course maps out origins and developments in spectatorship, audience, and reception theories as they intersect with the broader field of cultural studies. It explores key paradigms-such as the Birmingham School's encoding/decoding model, feminist and queer spectatorship, ethnographic and historical reception studies, and transnational and postcolonial frameworks-and examines how digital media and AI reshape contemporary reception practice.

When Offered

Offered once a year.

FILM 3150 - Topics in Gender and Film (3 cr.)

Description

This course provides a basic history and theorization of issues relating to gender in cinema, including representation, filmmaking, theory, and historical development. The course can engage in various issues relating to gender and provides the basis for mapping out historical and/or perceptual assessments of the significance of gender in filmmaking practices. The course is open to students from across disciplines and should be of strong appeal to students majoring in psychology, sociology, anthropology, and comparative literature.

When Offered

Offered occasionally.

FILM 3160 - The Filmmaker (3 cr.)

Description

A detailed study of the themes, the characteristic style, development, and influence of the director within the world of cinema. The course will assess, compare, and/or contrast combinations of two to three filmmakers.

FILM 3201 - Directing Fiction Films (3 cr.)

Prerequisites

FILM 3252 , FILM 3254 , and at least TWO courses of the Film Studies Required Courses: FILM 3110, FILM 3130, and FILM 3132

Description

This practice-based course takes students through the various stages of fiction film production to explore the thinking behind every artistic and technical decision the filmmaker takes. Students will develop a deep understanding of the filmmakers' tools and elements that form their vision and cinematic language. Students will learn different techniques in script analysis, visualization process, working with actors, managing crew, and creating audiovisual style.

FILM 3252 - Writing for Film (3 cr.)

Prerequisites
FILM 2121 and FILM 2123

Description
Mastering how to write stories considering the audiovisual nature of the cinematic language is a cornerstone in filmmaking. In this practice-based course, students will explore the essential elements of scriptwriting, including dramatic structure, plot development, building character, use of conflict, film treatment, and scene drafting.

FILM 3253 - Cinematography (3 cr.)

Prerequisites
FILM 2123 and FILM 2121

Description
Cinematography is an essential component of a film's structure, often defining its visual language and atmosphere. Creating images that meet the artistic concept of a project is the challenge of any Director of Photography. This practice-based course addresses the aesthetics and technical aspects of cinematography, covering light, optics, and the diverse range of film formats.

When Offered
Offered at least once per year.
Notes
Priority of registration in this course is given to declared Film majors and Film minors.

FILM 3254 - Film Editing (3 cr.)

Prerequisites
FILM 2121 and FILM 2123 or consent of the Director of the Film Program.

Description
This course aims to combine the learning of editing techniques with a reflection on the artistic contribution of the editor to a film project. Topics include editing workflows, media

management, operating editing software, sound editing, and exporting. In addition, montage theory, history, and aesthetics will be surveyed.

When Offered
Offered in fall and spring.
Notes
Priority of registration in this course is given to declared Film majors and Film minors.

FILM 3255 - Film Producing (3 cr.)

Prerequisites
FILM 2123, FILM 2121 and FILM 3252

Description

This course addresses the producer's role in different production models in the film industry. Within a workshop format and through individual and group exercises, students will develop skills and knowledge about the producer's mission and how to balance creativity and strategy throughout the journey of the film.

When Offered
Offered once a year.

FILM 3355 - Internship in Film Production (3 cr.)

Prerequisites
FILM 3201, FILM 3252, FILM 3254, FILM 3402, or consent of the Director of the Film Program.

Description
This course is designed to provide students with the opportunity to gain practical experience and to work and learn within the film community (production, festivals, administration, archives, research) as interns, paid employees, or volunteers. Students interested in enrolling in this course should submit a proposal to the Film Program. The proposal should be submitted for approval at least one month in advance of beginning the work. Students should also include an official letter from the host institution, which has agreed to supervise their project, indicating approval of the proposed student project. The host institution should also agree to provide an evaluation of the quality of the student's performance within two weeks after the end of the

student project.

Repeatable
May be taken more than once.

FILM 3402 - Hybrid Filmmaking (3 cr.)

Prerequisites
FILM 3252 , FILM 3254, and at least TWO courses of the Film Studies Required Courses: FILM 3110, FILM 3130, and FILM 3132

Description

Building on FILM 2123, this critique-based course offers students advanced training to practice with hybrid film forms, moving between fiction, non-fiction, experimental, and essay films. Students will explore their cinematic voices through feedback, discussions, readings, site visits, screenings, assignments, and projects.

FILM 4250 - Senior Film Project I (3 cr.)

Prerequisites
FILM 3252, FILM 3254, FILM 3201, FILM 3402 + 2 courses of level 3000 from the Film Production Electives.

Description
Final film projects are essential in presenting film graduates to the local and international film scene. In this critique-based course mentored by experienced film practitioners, students will work individually and collectively on the development and pre-production phases of their graduation films.

When Offered
Offered once a year.
Notes
This course is a capstone for all senior declared Film Major students.

FILM 4260 - Senior Film Project II (3 cr.)

Prerequisites
FILM 4250 + completing 2 courses of level 3000 from the Film Production Electives.

Description
This critique-based course builds on FILM 4250 - Senior Film Project I (3 cr.) and is mentored by experienced film practitioners. Students will work individually and collectively on the production and post-production phases of their films. This course brings together all the experiences students have learned throughout the production courses to leave the program with a short film that could present them to the local and international film scene.

When Offered
Offered once a year.
Notes
This course is a capstone for completing the Film Major.

FILM 4350 - Philosophy and Film (3 cr.)

Prerequisites
Students other than Philosophy majors must take FILM 3130 prior to registering for this course.

Description
This course considers the relationship between philosophical reflection and aesthetic practice through the lens of cinema, with the purpose of engaging students of both philosophy and film theory in a cross-disciplinary investigation into cinema. The course will draw both from philosophical texts on film, and classical and contemporary film theory. Topics may include epistemological, ontological and ethical questions about film; the role of memory, subjectivity, identity, and desire in cinema; time, space, and the nature of the image; perspectives on sexuality, gender, and race in film; psychoanalytic, feminist, and postcolonial film theory, and analytic and continental approaches to film and philosophy.

Cross-listed
PHIL 5150

FILM 4402 - Independent Study (1-3 cr.)

Prerequisites

This course is restricted to senior level students in the Film Major or Minor. Departmental approval required.

Description
With departmental approval, advanced students may arrange an individualized course topic to be completed under faculty supervision.

When Offered
Offered in fall and spring.

FILM 5170 - Advanced Seminar in Film Studies and Research (3 cr.)

Prerequisites
Consent of instructor or FILM 3110, FILM 3130, FILM 3132 and completion of at least three other Film Studies courses.

Description

This course is designed to provide students with an opportunity to survey and investigate various and specialized areas of film studies. Topics may include history, theory, filmmakers, national cinemas, women in film, etc. Seminars may also discuss film industry and distribution, film media, festivals, production systems, etc. Within the framework of the seminar's general topic, each student develops his/her more focused research project. This project builds upon and develops the material discussed in class and in the required readings.

When Offered
Offered once a year.
Notes
Students may choose to take this course twice, provided the specific area of each of the seminars falls in a different area of study, and pending approval.

Finance

FINC 2101 - Business Finance (3 cr.)

Prerequisites

ACCT 2001 and (MACT 2222 or MACT 3223 or MACT 3224 or PSYC 2000 or SOC 3103) and (ENGR 3222 or ECON 2011 or ECON 2021)

Description

The study of the principles of finance and their application to business enterprises. Special emphasis on financial analysis, management of working capital, cost of capital, capital budgeting, long term financing, dividend policy and internal finance.

When Offered
Offered in fall and spring.
Notes

Enrollment in this course is limited, and priority is given to students from within the major, students enrolling in this course to complete a collateral requirement in another major, and students who have declared business administration as a minor.

FINC 3201 - Investment Analysis (3 cr.)

Prerequisites
FINC 2101

Description
Introduction to the theory of investments. Topics include risk and return, the theory of portfolio selection, asset pricing models, valuation for stocks, bond pricing and the term structure of interest rates and options.

When Offered
Offered in fall and spring.
Notes

Enrollment in this course is limited, and priority is given to students from within the major, students enrolling in this course to complete a collateral requirement in another major, and students who have declared business administration as a minor.

FINC 3301 - Non-Banking Financial Institutions (3 cr.)

Prerequisites

FINC 2101

Description

This course provides a comprehensive understanding of non-bank financial institutions (NBFIs) and their role in the modern financial system. It delves into the diverse range of NBFIs, their operations, and their impact on the economy. Students will gain insights into the regulatory environment, risk management practices, and innovative strategies employed by NBFIs.

FINC 3401 - Applied Banking (3 cr.)

Prerequisites
FINC 2101

Description
Measuring returns and risks in banking, evaluation of a bank's performance, introduction to lending techniques and risk rating methods. Analyzing creditworthiness of business firms and financial institutions. Credit-management techniques such as asset protection, asset conversion and cash-flow analysis are introduced.

When Offered
Offered twice a year.
Notes

Enrollment in this course is limited, and priority is given to students from within the major, students enrolling in this course to complete a collateral requirement in another major, and students who have declared business administration as a minor.

FINC 3501 - International Finance (3 cr.)

Prerequisites
FINC 2101

Description
The effect of the international financial environment on the major financial decisions of business. The international financial institution and their effect on firms operating in the international environment.

When Offered
Offered occasionally.
Notes

Enrollment in this course is limited, and priority is given to students from within the major, students enrolling in this course to complete a collateral requirement in another major, and students who have declared business administration as a minor.

FINC 3601 - Debt Markets (3 cr.)

Prerequisites
FINC 2101

Description

This course provides a comprehensive introduction to debt securities markets, focusing on the analysis and valuation of fixed-income instruments. Students will learn essential concepts, including yield curves, duration, convexity, and credit spreads, while developing practical skills in bond pricing and risk measurement. The course also covers money market instruments and contemporary interest rate benchmarks.

FINC 4202 - Capital Markets (3 cr.)

Prerequisites
FINC 2101 .

Description
The objective of this course is to provide students with a thorough understanding of the structure and mechanics of financial markets coupled with a practical perspective of the use of finacial tools and their applications. It will introduce students to capital markets with global applications to various financial instruments including debt, equity and derivative securities, such as forwards, futures, and options. The course, as well, aims to widen students understanding of the various risks encountered by financial institutions and the means by which they are mitigated and managed.

When Offered
Offered in fall and spring.
Notes

Enrollment in this course is limited, and priority is given to students from within the major, students enrolling in this course to complete a collateral requirement in another major, and students who have declared business administration as a minor.

FINC 4203 - Introduction to Derivatives (3 cr.)

Prerequisites
FINC 3201

Description
Overview of basic derivative securities; forwards, futures and options. The focus is on the valuation of these securities and the use of derivatives for hedging risks. More complex derivatives may be covered.

When Offered
Offered occasionally.
Notes

Enrollment in this course is limited, and priority is given to students from within the major, students enrolling in this course to complete a collateral requirement in another major, and students who have declared business administration as a minor.

FINC 4204 - Portfolio Management (3 cr.)

Prerequisites
FINC 3201

Description

This course provides students with basic concepts and models of financial theory and introduces them to the evaluation of quantity risk and return decisions. Subjects that are offered in this course: Capital assets Pricing Theory; Arbitrage Pricing Theory; Derivatives and Portfolio Selection and Management.

When Offered
Offered occasionally.
Notes

Enrollment in this course is limited, and priority is given to students from within the major, students enrolling in this course to complete a collateral requirement in another major, and students who have declared business administration as a minor.

FINC 4301 - Corporate Finance (3 cr.)

Prerequisites
FINC 2101

Description
The course introduces students to basic concepts of corporate finance in the Egyptian environment. The course will cover the theory and application of capital budgeting techniques and capital structure choice of firms.

When Offered
Offered in fall and spring.
Notes

Enrollment in this course is limited, and priority is given to students from within the major, students enrolling in this course to complete a collateral requirement in another major, and students who have declared business administration as a minor.

FINC 4302 - Introduction to Private Equity (3 cr.)

Prerequisites
FINC 3201

Description

This course gives an introduction to private equity and direct investments. The course reviews the theoretical foundations of private equity and valuation techniques and applies them to various aspects of private equity deals using real life cases. The course examines how private equity firms operate, how private equity deals are executed, methods used by private equity firms for identifying value as well as lessons that companies can learn from private equity.

FINC 4303 - Financial Risk Management (3 cr.)

Prerequisites
FINC 3201

Description

This course provides a comprehensive understanding of financial risk management principles and techniques. It explores the various types of financial risks, including market, credit, interest rate and foreign exchange risks. Students will learn to identify, assess, and mitigate these risks through a combination of quantitative and qualitative methods.

FINC 4970 - Special Topics in Financial Management (3 cr.)

Prerequisites
FINC 3201

Description
Considers selected topics of current relevance in Financial Management.

When Offered
Offered occasionally.
Notes

Enrollment in this course is limited, and priority is given to students from within the major, students enrolling in this course to complete a collateral requirement in another major, and students who have declared business administration as a minor.

FINC 4975 - Independent Study in Financial Management (1-3 cr.)

Prerequisites
Prerequisites: Senior standing and consent of FINC unit head and chair.

Description
Guided readings, research, and discussions on specific selected topic in Financial Management.

When Offered
Offered occasionally.
Notes

Enrollment in this course is limited, and priority is given to students from within the major, students enrolling in this course to complete a collateral requirement in another major, and students who have declared business administration as a minor.

FINC 5201 - Managerial Economics (3 cr.)

Description
This course aims at applying economic principles to managerial decision making. The course covers topics such as demand, costs and market structure and their relation to pricing, product choice and resource allocation. This course also covers Macroeconomic topics such as saving, investment and the rate of interest; the theory of inflation; and economic growth.

FINC 5202 - Financial Management (3 cr.)

Prerequisites
ACCT 5201 or ACCT 5211

Description
It is a basic business finance course, dealing with various aspects of financial decision making. It provides an introduction to time value of money; bond and stock valuation; ratio analysis; financing decisions; capital budgeting; cost of capital; capital structure; risk and return; dividend policy; operating and financial leverage; and working capital management.

FINC 5203 - Investments and Portfolio Management (3 cr.)

Prerequisites
ACCT 5201 and FINC 5202 .

Description
This course will examine four different types of asset markets: equity markets, fixed income markets, futures markets and options markets. It will focus on the valuation of assets in these markets, the empirical evidence on asset valuation models, and strategies that can be employed to achieve various investment goals.

When Offered
Offered in spring.

FINC 5204 - Quantitative Financial Methods (3 cr.)

Prerequisites
ACCT 5201 and FINC 5202

Description
This course introduces the main econometric methods and techniques used in the analysis of issues related to finance. This course covers different applications of the classical linear model, including departures from the general model's basic assumptions: multicollinearity, autocorrelation, heteroskedasticity, endogenous regressors and GMM estimation. It also explores panel data, covering issues related to estimation and inference in panel datasets and applications. The course also discusses models with limited dependent variables (e.g. logit and probit models) and their applications. The last part provides also a special treatment of time series applications: Univariate and Multivariate time series. Students will actively use econometrics software with computer exercises in this course, available in the Lab Computers (e.g. STATA,...).

FINC 5211 - Managerial Economics in Business (1.5 cr.)

Prerequisites
Co-requisite: OPMG 5211

Description
This course utilizes micro and macroeconomic analyses in formulating and executing corporate strategy. The mix of academic and applied knowledge enables students to understand how managers can maximize real shareholders' wealth within the context of 1) the firm's short and long-run operating cost structure, 2) static and dynamic market structures and, 3) cyclical and structural macroeconomic dynamics. Topics include nameplate capacity, capacity utilization rate, pricing policies and risk management policies among other strategic decisions such as mergers and acquisitions.

FINC 5221 - Financial data Analytics (3 cr.)

Description
The role of data analytics in Fintech is undeniable. Data-driven decisions are quickly becoming a cornerstone of corporations and financial institution operates. The course will discuss the data-driven approaches in the application of FinTech industry. Descriptive, prescriptive, and predictive analytic methods are discussed for better and optimal decision making. Analytics is fruitful in several Fintech applications. For instance, personal financial data are used to offer personalized services, to detect fraud and to optimize financial processes.

FINC 5230 - Statistical and numerical methods (3 cr.)

Description
This course gives an introduction to numerical methods and statistics essential in a wide range of finance applications. The course consists of two main components: Numerical Methods and Statistics.

The topics covered in the numerical methods component include: Numerical differentiation, integration, interpolation and curve fitting (regression analysis). Solution of linear and non-linear algebraic equations. Matrix operations, and applications to solution of systems of linear equations. Introduction to numerical solution of ordinary and partial differential equations.

The topics covered in the statistical component include: Probability and distribution theory. Large sample theory including the Central Limit Theorem. Elements of statistical inference including estimation, confidence intervals and hypothesis testing. Introduction to regression analysis.

FINC 5231 - Statistical Methods in Finance (3 cr.)

Description
The course focuses on the importance of data exploration in the decision-making process using fundamental statistical treatments such as prediction models and analysis of variance with special emphasis on applications in business and finance. Topics include descriptive statistics, inference, single-factor and two-factor ANOVA models, linear regression analysis and making predictions using regression models. Case studies are employed to illustrate the statistical treatment of data.

FINC 5311 - International Financial Management (3 cr.)

Prerequisites
ACCT 5201 and FINC 5202 .

Description
This is a course on international financial markets and exchange rates. Topics include pricing in the foreign currency and use of forward exchange for hedging short-term returns and market efficiency in the international money markets, foreign currency options, international capital asset pricing, pricing of foreign currency bonds, currency swaps, syndicated loans, foreign currency financing and exposure management

When Offered
Offered in fall.

FINC 5312 - Financial Institutions and Markets (3 cr.)

Prerequisites
ACCT 5201 and FINC 5202 .

Description
This course will analyze the role of financial markets and financial institutions in allocating capital. The major focus will be on debt contracts and securities and on innovations in the bond and money markets. The functions of commercial banks, investment banks, and other financial intermediaries will be covered. Aspects of the regulation of these institutions will also be examined.

When Offered
Offered occasionally.

FINC 5313 - Derivatives (3 cr.)

Prerequisites
ACCT 5201, FINC 5202 and FINC 5203

Description

This course covers a list of advanced topics in derivative securities. It assumes that students have taken an introductory course in derivatives as well as an introduction to fixed-income markets. The first part of the course develops numerical techniques which are used to implement pricing methodologies. The techniques are applied to exotic options and real options. The second part of the course develops term structure models and options based on fixed income securities.

FINC 5314 - Real Estate Finance (3 cr.)

Prerequisites
ACCT 5201 and FINC 5202

Description
The course introduces main elements of real estate Finance. It begins with a comprehensive introduction of mortgage from the perspective of capital market investors. The mortgage basics are then used in investment analysis of income producing properties. The public debt and equity are introduced in the third part of this course.

FINC 5315 - Islamic Finance (3 cr.)

Prerequisites
ACCT 5201 and FINC 5202

Description
Islamic Finance is one of the fastest growing and most innovative financial disciplines in the international financial markets. It is growing at a rate of 15-20 % each year. It is one of the least understood both by the western financial community and indeed by those in Islamic communities. This course offers a clear and understandable examination of this dynamic area of finance. It will help participants to fully understand the fundamental principles underlying modern Islamic finance, as well as modern practices prevailing in this industry.

FINC 5320 - Financial Computing (3 cr.)

Prerequisites
FINC 5202

Description
This course introduces students to the real world challenges of implementing machine learning based trading strategies including the algorithmic steps from information gathering to market orders. The focus is on how to apply probabilistic machine learning approaches to trading decisions. We consider statistical approaches like linear regression, Q-Learning, KNN and regression trees and how to apply them to actual stock trading situations.

FINC 5322 - Machine Learning and Artificial Intelligence in Finance (3 cr.)

Description
Increasingly, fintech and financial services companies are integrating Artificial Intelligence (AI) and Machine Learning (ML) techniques into their processes. AI and ML are deployed in several financial areas such as risk management, algorithmic trading, asset pricing, and portfolios optimization. This is possible due to the availability of big data and the improvement of computational capacity and results in a more streamlined process, reduced risks, and improved business processes.

The course addresses the importance of AI in finance, introduces machine learning algorithms and their applications, and discusses the AI challenges and ethical issues in the financial sector.

FINC 5325 - Sustainable Finance (3 cr.)

Description
This course introduces the core concepts of sustainable finance and the relevance of sustainability for decision makers. The courses discuss financial models that integrate sustainability into corporate decisions, investments, and portfolio management. Different sustainable finance contracts, such as green bonds and derivatives in carbon markets are presented. These green assets/contingent claims are key components of sustainable financing and risk management that support the achievement of the goals of the Paris Agreement on Climate Change.

FINC 5331 - Fixed Income Securities (3 cr.)

Prerequisites
ACCT 5201 and FINC 5202

Description
This is a course on fixed-income securities and related derivatives. It covers basic analytical tools in fixed-income markets. Topics include relative pricing of fixed-income securities, forward rates, yield-to-maturity, yield-curve trading strategies and immunization techniques. It also discusses term structure models, fixed-income securities with embedded options, and derivatives with fixed-income underlying securities. Instruments to be discussed are forward rate agreements, bond and interest rate futures, interest rate swaps, fixed-income options, mortgage-backed securities, and credit derivatives. The course emphasizes analytical techniques, rather than institutional details.

FINC 5333 - Private Equity and Venture Capital (3 cr.)

Prerequisites
ACCT 5201 , FINC 5201 ,FINC 5202, MGMT 5307 MGMT 5202, MKTG 5201, MOIS 5201, OPMG 5201 and OPMG 5202.

Description
The course focuses on private equity and venture capital cycles. Emphasis is placed on the valuation concepts and their application to privately held companies. Case studies are an integral part of the course.

When Offered
Offered occasionally.

FINC 5351 - Advanced Corporate Finance (3 cr.)

Prerequisites
ACCT 5201 and FINC 5202

Description

This is an advanced corporate finance course with an emphasis on debt and equity management, security issuance, and distribution policy. Topics include descriptions of types of debt and equity, tradeoffs in the choice of an optimal capital structure; the role of capital structure in competitive strategy; the design of capital structure and securities to control information problems and limit conflicts of interest between different classes of security holders; procedures and costs of issuing

securities including initial public offerings, and the determinants of optimal payout policy. The course is intended for those with career objectives in financial management, the corporate finance aspects of investment banking, or general management.

When Offered
Offered in fall.

FINC 5352 - Financial Modeling (3 cr.)

Prerequisites
ACCT 5201 and FINC 5202

Description
This is a hands on course that introduces financial concepts through analytic frameworks and financial models that can be used to identify and solve financial management issues. The course guides students through various intermediate methods and techniques of financial modeling in Microsoft Excel emphasizing the use of (1) Excel Solver for Optimization, (2) Monte Carlo Simulation and (3) Excel's Visual Basic for Applications (VBA) programming language.

FINC 5353 - Financial Risk Analysis (3 cr.)

Prerequisites
ACCT 5201 and FINC 5202 .

Description
This course deals with the ways in which risks are quantified and managed by financial institutions. Among the topics covered are the nature of financial institutions and their regulation, market risk, credit risk, operational risk, liquidity risk, and the credit crisis of 2007.

FINC 5370 - Selected Topics in Financial Management (3 cr.)

Prerequisites
ACCT 5201 and FINC 5202 .

Description
It considers selected topics of current relevance in Financial Management.

When Offered
Offered occasionally.

FINC 5375 - Independent Study in Financial Management (1-3 cr.)

Prerequisites
Consent of FINC unit head and chair.

Description
Guided readings, research, and discussions on specific selected topic in Financial Management.

When Offered
Offered occasionally.

FINC 5401 - Thesis (3 cr.)

Description

The Master thesis will ensure that students can demonstrate the ability to address a timely and original research question through relevant research methodology. The thesis should include the following components: a novel and feasible research question, a comprehensive literature review, a detailed presentation of data and methods for conducting the research and collection and analysis of data. The final outcome is a formal write-up of the thesis and a public defense in front of a panel.

Hours
To be taken three times in three consecutive semesters.

FINC 5402 - Research Methodology (3 cr.)

Description

This course offers an overview of different research methods and processes in the area of finance. The course outcome will be the completion and presentation of a comprehensive research proposal for a research study.

Foreign Languages

FLNG 1991 - Selected Topics in Beginner Level Foreign Language (3 cr.)

Description
Study of selected topics in beginner level foreign language. The course meets three hours per week.

When Offered
Offered in Fall and Spring.
Repeatable
May be repeated for credit if content changes.
Notes
It is a three-credit elective course for Egyptian and International students.

FLNG 2991 - Selected Topics in Intermediate Level Foreign Language (3 cr.)

Prerequisites
FLNG 1991 or a placement exam.

Description
Study of Selected Topics in intermediate level foreign language. The course meets three hours per week.

When Offered
Offered in Fall and Spring.
Repeatable
May be repeated for credit if content changes.
Notes
It is a three-credit elective course for Egyptian and International students.

FLNG 3991 - Selected Topics in Advanced Level Foreign Language (3 cr.)

Prerequisites
FLNG 2991 or a placement exam.

Description
Study of Selected Topics in Advanced Level Foreign Language. The course meets three hours per week.

When Offered
Offered in Fall and Spring.
Repeatable
May be repeated for credit if content changes.
Notes
It is a three-credit elective course for Egyptian and International students.

Gender and Women's Studies

GWST 5100 - Theorizing Gender (3 cr.)

Description

This seminar introduces students to the core theoretical literature and debates in the field of gender and women studies. In addition to laying the intellectual foundation for further academic work in gender and women's studies, the seminar also engages contemporary debates on traveling theory with a particular focus on the Global South.

When Offered
Offered in fall.

GWST 5101 - Visual, Literary, and Critical Approaches to Gender in MENA (3 cr.)

Description
The course immerses students in the literary, historical, and theoretical debates within the academic field of MENA Gender and Women's Studies. Interdisciplinary approaches as well as varieties of theoretical positions and visual representations are discussed critically. Acknowledging the entanglements of regions, scholarly debates and political struggles, this course locates the MENA in its worldly context.

Cross-listed
ECLT 5101
When Offered
Offered yearly.
Repeatable
May be taken more than once if content changes.

GWST 5104 - Mobilities: Gender and Migration (3 cr.)

Description

This seminar provides an in depth engagement with the growing sub-field of Gender and Migration. Themes covered include: international gendered labor markets, migration to and from the Middle East, domestic labor, trafficking, displacement through conflict and development, remittances, and human rights.

GWST 5109 - Gendering the City (3 cr.)

Description

This seminar engages debates in contemporary neoliberal urbanism with a particular focus on the global south. With more than half of the world's population now residing in cities, the assemblages of the social laboratory are firmly grounded in the urban. The seminar explores the ongoing reconfigurations in the social laboratory: the production of gendered (raced and classed) subjectivities, housing, land, networks and livelihoods in the everyday life of diverse urban configurations.

GWST 5170 - Special Topics in Gender and Women's Studies (3 cr.)

Description
Alternating selected topics.

Repeatable
May be taken more than once if content changes.

GWST 5180 - Independent Study and Readings (3 cr.)

Prerequisites
Prerequisite: Approval of IGWS Graduate Advisory Committee.

When Offered
Offered occasionally.

GWST 5199 - Crossing Boundaries: An Introduction to Gender and Interdisciplinarity (3 cr.)

Description

This capstone course is open to advanced undergraduate and graduate students and will introduce students to the interdisciplinary field of gender studies through examining the history of the field and feminist movements, research methods and methodologies, and key concepts such as identity, representation, power, inequalities and intersectionality.

When Offered
Offered in spring.

GWST 5205 - Gender and Feminist Research Methodologies (3 cr.)

Prerequisites
GWST 5100 or consent of the instructor.

Description

This course provides an introduction to gender and feminist approaches to dominant theories of knowledge and research methodologies in the social sciences.

When Offered
Offered in spring.

GWST 5289 - Comprehensives (0 cr.)

Description

This course provides a forum for an independent review of the main concepts of the program's core subject areas in preparation for the comprehensive examination. The student will take a written examination at the conclusion of the course and must receive a passing grade to be successful. An oral examination may be required in addition to the written examination. The comprehensive examination may be repeated once. A student who fails the comprehensive examination a second time would be dismissed from the degree program at the end of the semester in which the examination was retaken.

When Offered

When needed by students taking comprehensive exam.

GWST 5299 - Research Guidance and Thesis (no cr.)

Description

Consultation for students in problems related to their thesis.

When Offered

Offered in fall and spring.

Global Public Health

GHHE 5110 - Biostatistics (3 cr.)

Description

The objectives are to educate the student in the research skills (statistics and experimental design) and mathematical applications in the data analysis required to design and conduct rigorous peer-reviewed studies in the applied sciences, inclusive of the biomedical and physical sciences, as well as public health. A sound foundation is essential in preparing and critiquing the literature, regulatory reports, and incorporating statistics in preparing a satisfactory research proposal and reporting research outcomes in an informative manner. Students will gain, through hands-on experience, exercises, and examination, the ability to use appropriate summary and inferential statistical analysis. Associations between determinants and outcomes through parametric and non-parametric measures, data transformation for multivariate analysis will be covered through exercises. The use of statistical packages suitable for scientific and public

health research will be introduced. In short, students will also be able to design, experimentally and statistically, appropriate studies that can withstand appropriate peer review. The course is open to all interdisciplinary MSc and PhD students and is a core requirement in some (e.g., MPH and MSc in BIOT).

GHHE 5120 - Introduction to Epidemiology (3 cr.)

Description

Public health practitioners and researchers, regardless of their discipline or specialty, rely on the results of epidemiologic research and often employ epidemiologic concepts, methods, and perspectives. Clinicians providing evidence-based health care do as well. This course presents a general introduction to the approach, concepts, methods, and perspectives of epidemiology for students and practitioners in a broad range of public health and related disciplines. The course employs problem-based learning where you apply the epidemiologic approach to a variety of current public health questions. Through GHHE 510 you will improve your ability to think analytically and to understand and interpret population-based and clinical research.

GHHE 5130 - Environmental & Occupational Health (3 cr.)

Description

These courses survey local and global environmental health issues. Students will utilize selected readings and media to characterize the impact of environmental agents on human health, the environmental consequences of anthropogenic activities, and the interdependency between humans and the natural environment. The course targets graduate students in public health and those from other disciplines who are interested in research focused on public health issues. For those with biological, biomedical and medical backgrounds GHHE 520 is the required course. GHHE525 provides a survey of biological and chemical concepts not covered in undergraduate major for the non-biologist.

GHHE 5170 - Health Program Planning and Evaluation (3 cr.)

Description

This course is practice-intensive and covers the full public health program cycle: problem prioritization; needs and assets assessment; theory of change and logic model development; implementation planning (roles, timeline, and risk); budgeting; and monitoring and evaluation design. Emphasis is placed on decision-ready monitoring and evaluation plans, including indicator

selection, data sources and methods, analysis planning, and use of findings. The course also addresses policy and health-system context, stakeholder and coalition engagement, and development of audience-tailored communication products. Equity, cultural responsiveness, and ethical stewardship of resources are integrated across course deliverables to support feasible, transparent, implementation-ready program plans.

GHHE 5180 - Experimental Design and Research Methods (3 cr.)

Description

This course introduces qualitative and quantitative methods used in health-related research and considers the entire research process; from formulating questions and hypotheses to designing studies, collecting and analyzing data, and communicating findings. Attention is given to ethical considerations and the strengths and limitations of different methodological approaches. Emphasis is placed on understanding the logic of scientific inquiry and conducting research that is both methodologically rigorous and ethically responsible.

GHHE 5190 - Diseases and Social Perception (3 cr.)

Description

Diseases have meanings and those meanings translate into the way in which sufferers and society perceive and engage with their disease. Discourse on disease is often most charged when the disease in question threatens to cross borders, socioeconomic, national, or otherwise and, in these instances, the media is often complicit with "othering" the disease in a way that may have very real, material consequences. Examples from recent media coverage that have "otherized" the etiology of diseases, whether the disease covered is SARS as an Asian disease, the swine flu as a Mexican disease, Tuberculosis as an immigrant disease, or HIV/AIDs as a Haitian disease. In addition, effective therapy and support is often hampered by how social perception stigmatizes diseases such as mental illness, autism, Down syndrome and the like. This is no less so in the case of the sufferer's self-image: when a woman undergoes a radical mastectomy, or when one is the victim of a disfiguring accident. The outcome, in terms of disease management and resources, is further influenced by the media's shaping of society's perception of the "disease of the day" through language. Through a look at several case studies and current literature, this course will focus on the ways in which disease takes on meaning and, in many cases, emerges as a signifier for something altogether different.

GHHE 5250 - Epidemiology of Malnutrition, Metabolic Disorders, Obesity and Diabetes (3 cr.)

Description

This course is an exposition of major issues associated with poor nutrition, nutrient deficiencies, the surge in disorders of metabolism, obesity and diabetes epidemiology. The course will focus on methodological approaches relevant to research and relying on current literature. The interplay between mental health, behavior, societal factors and mass communication will also be addressed.

GHHE 5280 - Systematic Review and Meta-Analysis (3 cr.)

Description

Provides training in systematic review and meta-analysis. Topics include problem definition, defining and searching the literature, extracting results and study characteristics, data set preparation, publication bias and funnel plot analysis, analysis of overall heterogeneity, stratified and meta-regression analysis of study and population characteristics, and preparation of reports for publication.

GHHE 5290 - Health Analytics and Informatics (3 cr.)

Description

Like many fields, if not more so, Public Health is not immune from the "big data revolution". The "how" do healthcare providers, community groups, researchers and policy makers, mine, analyze, and use data to understand and improve population health, as well as keep an eye out for the impact of global practices/crises on local communities defines Health Analytics and Informatics. This course introduces students to key big data sources and analytic techniques, understand the differences between big data approaches and traditional statistics, and the techniques applicable to the areas of epidemiology and risk assessment, policy, health systems, community, and global health. Through case studies students will evaluate application, ethics, bias, and effectiveness of big data strategies.

GHHE 5330 - Environmental Assessment of Risks of Toxics on Health (EARTH) Lab (3 cr.)

Description

Environmental Assessment of Risks of Toxics on Health (EARTH) lab is an environmental quality and health monitoring and assessment laboratory that exposes and enables the student to common hands-on techniques and instrumentation used in environmental and biological monitoring. Students learn laboratory, field, and analytical skills through a solid introduction to experimental research in environmental sciences and engineering. Students are provided with applications in limnology, aquatic chemistry, analyses of environmental and biological specimens, and industrial hygiene measurements. Tests for volatile organic compounds, heavy metals, particulate matter and persistent pollutants will be covered.

GHHE 5410 - Biomarkers: Exposure, Susceptibility, Effects and Efficacy (3 cr.)

Description

This course surveys the discovery and utility of biochemical and molecular biological indicators, or molecular metrics, for the characterization and diagnosis of exposure to etiological factors, genetic risk, deleterious effects of animate and inanimate pathogens and the successful intervention using pharmacotherapeutics. Relying on an understanding of basic principles of physiology, cell biology, cell signaling and molecular biology, the course capitalizes on state-of-the-art literature and case studies to illustrate the use of molecular metrics in the identification of disease susceptibility, effects of toxic agents, tumor identification and the design of personalized medical intervention.

GHHE 5420 - Pharmacogenomics and Personalized Medicine (3 cr.)

Description

This course will provide a wide array of topics in the field pharmacogenomics and explore the growing importance of pharmacogenomics in the delivery and diagnosis pertinent to personalized medicine and therapeutic management. Students will be introduced to genomic concepts in genetic testing, future drug design, study interpretation, and clinical therapeutic decision making. The course will be divided into two sections. The first part of the course will examine the application of pharmacogenomics in medicine and drug design. In the second part of the course, the student will have the opportunity to apply pharmacogenomic concepts and decision making. This will be implemented via a patient case study developed by the student, or a written paper illustrating the influence of pharmacogenomics in medicine.

GHHE 5540 - Genetics and Molecular Basis of Disease (3 cr.)

Description
This course lays down the foundation in basic genetic concepts with the objective of understanding the hereditability and/or molecular basis of disease. Recent evidence and diagnostic procedures suggest that genetic diseases make up a large proportion of the total disease burden in both pediatric and adult populations. Today's health care practitioner and biomedical scientist must understand the science of medical genetics and the consequences of altered genomics and proteomics. Advances in the development of new and more accurate methods of diagnosing hereditary disease have led to a greater "genetic awareness" and recognition that genetics plays a role in all areas of medicine. Using a wide spectrum of examples, it will illustrate the impact of mutations as found in thalassemias, sickle cell anemia, cystic fibrosis, familial Amyotrophic Lateral Sclerosis and Huntington's Disease as causes of disease. It will also discuss genetics as a predisposing factor, such as in the case of birth defects, breast cancer, Parkinson's and Alzheimer's Diseases, alcoholism and some autoimmune disorders. Environmentally-induced mutagenesis and carcinogenesis and the role of oncogenes and tumor suppressor genes will be a particular focus of the second half of the course.

GHHE 5930 - Selected Topics in Public Health (3 cr.)

Prerequisites
Consent of instructor.

Description
Topics are to be chosen according to specific interests and will vary depending on trends in public health.

Repeatable
May be taken for credit more than once if content changes.

GHHE 5980 - Research Guidance Thesis (3 cr.)

Prerequisites
SCI 5940

Description

Consultation on problems related to student thesis.

Notes
Must be taken twice for a total of 6 credits.

GHHE 6120 - Leadership and Professional Development for Public Health Professionals (3 cr.)

Description
This course is designed to introduce the skills, concepts and interactions that are critical for the development and enhancement of leadership in the health care workplace. The lectures, discussions and exercises are targeted to physicians, pharmacists, clinical diagnosticians, nurses, biomedical researchers and industrial professionals. Guests and video topics will supplement the course work. The course requires student participation and student presentations.

GHHE 6140 - Evidence-Based Medicine (3 cr.)

Description
In the age of pharmacogenomics and global health care, it has become evident that the traditional paradigm in medical practice and therapeutics is no longer applicable. Scientific evidence has demonstrated that the diversity in our genetic profiles, diet, nutrition, cultural practices, and religious belief impact on our ability to deliver effective therapy, communicate risk of disease, implement preventative measures and predict the efficiency of health outcomes. Through case studies, these convergent issues are discussed.

GHHE 6180 - Microbiology and Infectious Disease (3 cr.)

Description
This course is the study of methods used for collection, transport, processing, identification and reporting of bacteria from specimens taken from the human body. Students will be shown what is involved in determining the significance of different organisms in various clinical specimens and disease states. The principles of infection control will also be discussed. Students will be taught how to analyze and record laboratory data, comply with all safety procedures and recognize the limitations of a diagnostic microbiology laboratory. Students will also observe, practice and establish professional behaviors necessary to be a successful clinical laboratory scientist.

GHHE 6190 - Immune System in Health and Disease (3 cr.)

Description

The course in immunology is designed to provide a foundation on the essential mechanisms involved in the development of target-specific defenses. The cells, processes, and chemical mediators participating in the immune response, and the development of immunological memory will be discussed. The reasoning behind medical practices of prophylaxis through vaccination, immunesuppression, transplantation and diagnostic utility of the immune system will also be discussed. The immune system as a target and effector of disease will be illustrated through discussion of immunodeficiency, hypersensitivity responses, and autoimmunity. Finally, intervention in immune-based disorders will be illustrated.

GHHE 6211 - Advanced Epidemiology (3 cr.)

Description

Epidemiology investigates the distribution and trends of health-disease conditions, causes, and risks for populations. Epidemiology a dynamic and evolving discipline, considered one of the core pillars of Public Health, community or global. The overall goal of this course is providing graduate students a foundation of theory and tools to apply as a Public Health professional in research and practice settings. Students apply descriptive Epidemiology, calculate health indicators, and write Epidemiological reports for situational analysis; describe, propose, and apply appropriate study designs, and analyze health disparities. Calculation and interpretation of standard measures of frequency and association, and logistic and multiple regression are used to estimate the extent and impact of disease and injury on individuals' lives. Students will deeply comprehend key issues in Social Determinants of Health and propose interventions to solve real life Public Health problems.

GHHE 6930 - Current Topics in Public Health (3 cr.)

Prerequisites

Consent of instructor.

Description

Topics are to be chosen according to specific interests and will vary depending on trends in public health.

Repeatable
May be taken for credit more than once if content changes.

GHHE 6980 - Research Guidance Dissertation (3 cr.)

Description
Consultation on problems related to student dissertation. To be taken 11 times for credit.

Graphic Design

DSGN 2113 - Introduction to Visual Cultures (3 cr.)

Description
This lecture course provides a primer in visual literacy across media, introducing students to key terms and methods for critically reading the visual world including iconology, formal analysis, art history, ideological analysis, and semiotics. Students gain fluency in understanding how images work in cultural context to communicate meaning, to express a sense of self, to convey pleasure, to sell things, and to distribute power. Questions of the effect of specific visual technologies are also engaged, particularly their impact on perception and conduct. Examples are drawn from fine art, advertising, film, popular culture, and new media.

DSGN 2115 - History of Graphic Design (3 cr.)

Prerequisites
DSGN 2113

Description
This course introduces students to the conceptual and critical aspects of graphic design through the discourse of history and theory of visual communication. It addresses how international graphic design went hand in hand with social, political and technological developments around it. It is a chronological survey of graphic design through slide lectures and research.

DSGN 2200 - Design Foundations (3 cr.)

Description

This introductory studio course introduces students to the foundations of design in a cross-disciplinary environment through various media forms. Understanding the creative potential visual research holds, students undertake a continuous visual research project throughout the course. By means of lectures, group presentations, group discussions, class exercises and technical workshops, students develop their skills in the expressive use of analogue and various media as they realize several diverse design projects.

When Offered
Offered in fall and spring.

DSGN 2201 - Design Principles & Practices (3 cr.)

Prerequisites
DSGN 2200

Description
This course encourages students to apply previously acquired knowledge of fundamental principles of graphic design to effectively communicate concepts in a visual representation that range from two-dimensional images to three-dimensional objects and site-specific installations. Through research, class exercises and critique, technical workshop, and design projects, students will learn to develop work plans and explore with cross-disciplinary expressions, production techniques, and materials in order to achieve communication goals.

DSGN 2210 - Typography I (3 cr.)

Prerequisites
DSGN 2200

Description
This course is an introduction to and experimentation with different aspects of Latin and Arabic typography. It addresses letter forms and their legibility, visual organization, classification and text applications. Projects will explore the fundamentals of Latin and Arabic typography in terms of history, theory and practice.

DSGN 2240 - Color (3 cr.)

Description
A series of experiences devoted to the development of the perception of color and its use as a tool for the graphic designer. The physics of color, colored light, colored pigments and the color wheel. The study of Johannes Litten's color theory and Labert Munsell's color solid, the psychology of color and application of its relations to different design fields. There will be an emphasis on using gouache paint and matching paint colors with digital color and printing as well as exploring digital color on the computer.

DSGN 2245 - Illustration (3 cr.)

Description
Students explore the different media of illustration for different end products in this studio course.

DSGN 2250 - Digital Practices I (3 cr.)

Description
In this course students will be introduced to the basics of digital image making, core layout-design principles and simple animation. Students will work across multiple software applications to understand each's strength, scope of usage and workflow to produce for both print and digital.

DSGN 2260 - Production for Designers (3 cr.)

Prerequisites
DSGN 2210

Description
Design production is explored in all its phases and aspects in this course. From preparing files for different design products to color separation and advanced techniques in printing. Students will be exposed to different highlights in the history of printing and will be acquainted with printing terminology, and the visual and tactile aspects of paper, printing and binding.

DSGN 2300 - Analog Game Design (3 cr.)

Prerequisites
DSGN 2113 or DSGN 2200

Description

This multidisciplinary course teaches students how to generate ideas and test them through rapid prototyping methods to reach a Minimum Viable Product focusing on analog games.

The course allows graphic design students to work collaboratively with various engineering students at an early stage in their academic years. This can help them see the potential of multidisciplinary team work.

With an overview of game history and theory, the students will explore diverse analog tools to enable them to migrate between theory and practice and understand the creative potential of an interdisciplinary studio practice.

The course includes lectures, group presentations, group discussions, class exercises and technical analog workshops.

DSGN 3117 - History of Advertising in the Arab World (3 cr.)

Prerequisites
DSGN 2113

Description
A course on the history of advertising in the Arab world that studies visual communication in the region from the rise of the printing press to the introduction of multinational brands.

DSGN 3118 - History of Arabic Calligraphy (3 cr.)

Description
A Slide-lecture based course that will introduce students to the history of Arabic calligraphy from the early Quran scripts, through highlights of the creative output of different Islamic dynasties until the introduction of the printing press. It will discuss the aesthetics of the calligraphic Arabic word and different stages of development of the script on paper and different media.

DSGN 3202 - Logo and Visual Identity Design (3 cr.)

Prerequisites
DSGN 2201 , DSGN 2115, DSGN 2210 and DSGN 2250

Description
This course will prepare students to design logos and establish visual identities within the guidelines of brands, across a variety of media and applications.

The course offers real client-designer experience. Students will have the chance to work with clients on real briefs and will learn to exercise and develop their visual problem solving and time management skills to meet clients' expectations and deadlines. They will learn to handle the pressure of overlapping assignments.

DSGN 3203 - Publication Design (3 cr.)

Prerequisites
DSGN 2115, DSGN 2201, DSGN 3220

Description

The course focuses on the different formats that a printed word can appear in on different items like magazines, newspapers, books and web/digital publishing. Students are given briefs that push for exploration of the thinking process (Content, Message, Organization) the reading process (Typography and Layout of publications), and building process (Structure and Integration).

When Offered
Once a year (Spring or Fall).

DSGN 3204 - Packaging Design (3 cr.)

Prerequisites
DSGN 2201 DSGN 2115 DSGN 2210 and DSGN 2250

Description
Understanding shelf-life and presence, this studio course is based on designing and understanding communication graphics for packaged products. Students experiment with structures of products and the application of type, color, and image on different media like

paper, plastic, nylon etc. Projects may be based on real market client briefs and/or experimental ideas.

DSGN 3205 - Retail Design (3 cr.)

Prerequisites
DSGN 2201. The instructor's approval is required.

Description

This course is concerned with the design and user experience of a retail space. It can contain several branches of design like architecture, interior design, industrial design, advertising and graphic design.

DSGN 3210 - Information Design (3 cr.)

Prerequisites
DSGN 2115, DSGN 2201, DSGN 3220

Description

The information design course will focus on communicating complex information with visually appealing graphics. Participants will develop a deep understanding and broad knowledge of data visualization and pictorial language in theory and practice. They will learn how to create clear and meaningful visualizations for specific topics, target groups, and applications.

When Offered
Once a year (Spring or Fall).

DSGN 3213 - Interactive Design (3 cr.)

Prerequisites
DSGN 3250

Description
This course provides an overview of core design principles on how to create a User Experience that includes a digital product. The students will learn about the complete design process from

User-centred Research and its methods, problem definition, concept ideation, Concept Prototyping and Testing, User Interface Design to presentation and documentation of such a project. In specific this course focuses on how to create Mobile Applications using most relevant application for prototyping.

When Offered
Offered in fall and spring.

DSGN 3220 - Typography II (3 cr.)

Prerequisites
DSGN 2210, DSGN 2250

Description
This studio course covers the fundamentals of type, its characteristics, vocabulary, and terminology, as well as creative uses of type and how it is integrated into successful Latin and Arabic designs. It will introduce students to the history and current practice of typography in all areas of communication design: from editorial design to advanced information graphics and screen-based interactive media.

The course contains a combination of projects, class assignments, and presentations that focus on refining students' abilities to understand and use fonts and typesetting software to create and analyse typographic prototypes for print, screen, and three-dimensional design. Students will develop an understanding of the interrelationship between text, content, and audience in context and functions, considering coordination factors, visual hierarchy, speed, clarity, print systems, colour media, and materials.

DSGN 3230 - Type Design (3 cr.)

Prerequisites
DSGN 3220

Description
This course will cover the study and design of Arabic typefaces including Arabic type design, its aesthetics, and functional strengths, as well as introduce students to the rules of Arabic calligraphy. Students will learn how to adapt their Arabic type designs to the needs of their communities and as means through which their ideas are communicated.

DSGN 3235 - Animation and 3D (3 cr.)

Prerequisites
DSGN 2250

Description
A course for students to learn the basics of 3D Design and 3D animation and concepts. It will introduce them to the role of 3D and animation in the field of Graphic Design.

DSGN 3250 - Digital Practices II (3 cr.)

Prerequisites
DSGN 2250

Description
In this course students will receive advanced level instructions using software for layout and digital image making. The students will work on multiple image formats producing digital and print outcome. The learning outcome will support the execution and production of their creative work. This course will work across multiple computer design applications.

When Offered
Offered in fall and spring.

DSGN 3260 - Photography for Designers (3 cr.)

Description
How to write a photography brief, what is a product shot, how to cast the right model for your concept, food styling and photography, and working with different photographers. How and when to work with photo banks. Students will learn how to work as designers with different specialized photographers and understand the different needs of each photo assignment.

DSGN 3265 - Advertising and Branding (3 cr.)

Prerequisites
DSGN 2210 and DSGN 2250

Description
A practice course on art direction for advertising. Students will be exposed to various advertising concepts from classical communication strategies to more contemporary ones in various analogue and digital mediums. This is a studio-based course and might include real market briefs or experimental ones.

DSGN 3266 - Design for Social Change (3 cr.)

Prerequisites
DSGN 2250 and DSGN 2210

Description

This studio course focuses on how design can be a powerful tool to address social, cultural, and environmental issues. Students will explore the intersection of design and activism, using visual communication and design strategies to create impactful solutions that foster social change. Through four hands-on projects, students will engage with real-world challenges and learn how to design with empathy, cultural sensitivity, and a systems-thinking approach. The four projects that students are required to submit during the course cover varying topics, from heritage preservation to environmental and social concerns.

When Offered
Offered in fall and/ or spring.

DSGN 3270 - Selected Topics in Design (3 cr.)

Prerequisites
Consent of Instructor.

Description
This course is an in-depth examination of specific topics in Design determined by the special interests and expertise of the faculty. This course may be repeated or taken concurrently when course content is different.

DSGN 3300 - Digital Game Mechanics (3 cr.)

Description

A multidisciplinary course that introduces students to current digital prototyping tools used in digital game design. The course will start with an overview of the history of digital game design accompanied by analytical insights and discussions. Students will learn about current digital prototyping tools through the ideation of basic 2D and 3D digital games, and explore elements such as game mechanics, level design and puzzle design. The course will utilize visual programming methods that are accessible to all students.

DSGN 3400 - Digital Game Design (3 cr.)

Prerequisites
DSGN 3300

Description

A multi-disciplinary course that guides students to form teams of designers, programmers, and illustrators to ideate, prototype, and pitch their digital games.

The course will include theoretical and practical components, group discussions, and assignments.

DSGN 3500 - Creative Coding (3 cr.)

Prerequisites
DSGN 2250 or CSCE 1001

Description

This course introduces students to creative coding and computational design as tools for experimentation, visual research and interactive designs. Students learn core programming concepts, algorithmic thinking, and mathematical principles, applying them to create visuals with typography, color, shape, images, and layout.

Through projects involving interactivity, randomness, data, and animation, students develop systematic approaches to visual design. Emphasis is placed on adaptability and visual system design, equipping students with technical skills and conceptual frameworks to expand their design practice through code.

DSGN 4200 - Design Field Practices (3 cr.)

Prerequisites
Completion of at least two "Professional Practice" courses.

Description

This course exposes students to different design communities around the world. It is field research-based. It will introduce students to new and emerging design practices and methodologies while building their international design network by collaborating with academic design institutions, professionals, and students in different countries.

DSGN 4210 - Portfolio (3 cr.)

Prerequisites
Completion of all major courses.

Description
This course helps students create and promote their image in the market through discussions on career pathways. It will prepare students for the professional world guiding them on how to design a digital and printed portfolio, a resume and a personal corporate identity.

DSGN 4269 - Senior Project Thesis (3 cr.)

Prerequisites

1. Completion of all 2000 and 3000 level Concentration Requirement courses.
2. Completion of at least four Professional Practices courses.
3. Completion of at least two Technical courses.
4. Senior Standing or instructors approval.

Description

Independent research with a topic approved by the department. Students are requested to work independently and submit a comprehensive paper on their chosen topic.

When Offered
Offered in fall.

DSGN 4270 - Senior Project Practice (3 cr.)

Prerequisites
DSGN 4269

Description
Independent design project as a continuation of researched topics approved previously by the department. Visiting critics will be invited to review as assess the final project.

When Offered
Offered in the Spring semester.

DSGN 4302 - Independent Study (3 cr.)

Prerequisites
Consent of instructor.

Description
Under the guidance of a faculty member, the student conducts research or a design project on a specific topic. The student will present his/her results by submitting the research paper and/or design project determined by the supervisor.

DSGN 5115 - History of Graphic Design in the Arab world (3 cr.)

Prerequisites
DSGN 2115

Description
Exploring a relatively new field in the region, this course explores the history of graphic design in the Arab world by looking at publication design, political posters, children's books and commercial design that have been instrumental in the development of social and political ideas in the region. The course presents to students a thorough review on the work of particular time

periods and designers in the Arab world shedding light on the origins of printing and typography, Islamic manuscripts design, Arabic calligraphy and its revival, Modern art and its impact in design, visual identity and conceptual images, postmodern design and the digital revolution.

History

HIST 1000 - Why History? (3 cr.)

Description

This survey course introduces students to the study of history, to a handful of professionals who use history in their careers, and the people who teach it at AUC and beyond. In other words, why history? In this class, students will learn how events today have been shaped by events in the past. They will meet the professors of the History Department and learn about the periods and parts of the world they teach. Students in this course are encouraged to think outside the box, challenge everything they think they know. This course teaches why history matters and how majoring or minoring in history prepares for a professional career.

HIST 1099 - Selected Topics for Core Curriculum (3 cr.)

Description

Course addressing broad intellectual concerns and accessible to all first-year students.

HIST 2000 - How to Use a Time Machine? Investigating the Past (3 cr.)

Description

This course teaches how to think, write, and speak historically. By stepping into the time machine, students get to learn how to do history, which makes of this course an essential step on their journey toward becoming historian, and a primer for humanities major/minor. This course provides students with the necessary toolkit to investigate the past, and will open up new perspectives for students interested in this discipline and the humanities at large.

HIST 2096 - Selected Topics for the Core Curriculum in Global Studies (3 cr.)

Prerequisites

RHET 1010

Description
Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

Notes
May be repeated for credit when content changes.

HIST 2097 - Selected Topics for the Core Curriculum in Arab World Studies (3 cr.)

Prerequisites
RHET 1010

Enrollment contingent on the instructor's consent.

Description
Course addressing broad intellectual concerns. The course involves Arabic material and the narratives could be in Arabic.

Notes
May be repeated for credit when content changes.

HIST 2099 - Selected Topics for the Core Curriculum in Humanities (3 cr.)

Prerequisites
RHET 1010

Description
Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

Notes
May be repeated for credit when content changes.

HIST 2104 - A History of the Whole Wide World (3 cr.)

Description

The development of human society from 11,000 BCE to the present. Using archaeology, anthropology, ethno-biology and traditional history, this course examines the civilizations of Polynesia, China, India, Africa, Meso-America, South America, the United States, Europe and the Middle East in order to explain why some societies today are politically, economically and technologically more powerful than others.

HIST 2203 - Survey of Arab History (3 cr.)

Description

This course presents the history of the Arabic-speaking Middle East from pre-Islamic times to the modern era, with emphasis on the principal political, economic, social, religious, and cultural developments and their relevance to the contemporary Middle East. The course introduces students to historical methodology and different interpretive approaches. It attempts to foster a critical attitude toward sources and provides a context in which students can apply skills and concepts acquired in other fields.

Cross-listed

Same as ARIC 2346

HIST 2204 - The Making of the Modern Arab World (3 cr.)

Description

A historical tour of how we got where we are today. The course starts with the late pre-modern Arab world and Ottoman empire, and moves through various forms of threat, influence, change, and modernization to the present. Events in the Arab world are examined in their wider, global context.

HIST 2300 - Becoming African (3 cr.)

Description

This course will offer a broad overview of African history from the development of early human societies to the abolition of the Atlantic slave trade at the start of the 19th century. Its main goal is to introduce students to the conceptual resources and methodological tools needed to

understand a range of different African societies, including hunters and gathers, pastoralists, land-based empires, and complex states built through long distance trade and slavery. In addition to these broad systemic and structural themes, this course endeavors to discover the experiences of individual Africans before the entrenchment of European colonial powers to see what their lives in a precolonial African context can tell us about our own. Finally, this course aims to introduce students to some of the most important historiographical debates that have taken place since 1945 about precolonial African histories to enable students to make their own arguments about the precolonial African past.

HIST 2301 - The Struggle for Africa (3 cr.)

Description

This course will examine the history of sub-Saharan Africa from the eve of the European colonization to the present day. In combining a thematic and chronological approach students will discover the complex history of various people and regions in Africa during this period. Topics range from the imperial scramble to colonize Africa to the integration of African societies into the colonial and global economy; from Western perceptions of Africa and Africans to the social, political and economical impacts of colonial policies; and from Africans' struggles for freedom during decolonization to Africa's post independence experience.

HIST 2403 - Europe on Fire: Revolution and Reform (3 cr.)

Description

This Course explores Europe's so-called "Long 19th century" from the French Revolution to World War I including many of the phenomena that came to define the century such as capitalism, nationalism, socialism, feminism and imperialism.

HIST 2501 - The Making of America (3 cr.)

Description

A survey of American cultural roots from the period of exploration through the foundation of a federal American republic, social and industrial challenges, the question of slavery, and the crisis of civil war.

HIST 2502 - The Rise and Fall of America (3 cr.)

Description

A survey of events leading to the creation of a distinct American culture as the United States meets the challenges of moral crisis, the industrial revolution, and world leadership from the nineteenth century to the present.

HIST 3200 - The Uses of Heritage: The Past and Its Presence in the Contemporary World (3 cr.)

Description

In this course, students retrieve and explore some aspects of our shared past and analyze its contemporary uses. Of interest here is not just the past as it happened, but the past as people experience it today. Our investigations focus on struggles for ownership of the past and its material traces, and on the actors engaged in these struggles. The course adopts a multidisciplinary perspective, looking at how urban planning, anthropology, cultural studies, and other disciplines can help historians understand the past and its representations.

HIST 3205 - Islamic Spain and North Africa (711-1492 A.D.) (3 cr.)

Description

This course is an introduction to the political, economic, social, and cultural history of Muslim Spain and North Africa. Its emphasis is on explaining how interactions among different ethnic groups (Arabs, Berbers, and Iberian natives) and different confessional communities (Jews, Christians, and Muslims) created social situations that made the Western Muslim lands unique in Islamic history.

Cross-listed

Same as ARIC 3319.

HIST 3206 - Urban Landscapes in the Modern Middle East/North Africa (3 cr.)

Description

This course presents diverse histories of cities in the Middle East in the nineteenth and twentieth centuries, from the impact of French and British colonialism to Arab nationalism. It introduces students to central themes in modern urban history with emphasis on the city and

the production of modern lives, rural migration and the transformation of the city, women and men in the city, and urban crisis and social movements.

HIST 3207 - Histories of Palestine (3 cr.)

Description

This course uses various methodologies and a wide range of sources to introduce students to the history of geographical Palestine. Students engage with textual primary sources, oral histories, architecture, cultural heritage, literary narratives, and cinematic representations. This course provides students with the tools to understand formations of nation and history in Palestine.

HIST 3208 - Zionism and Modern Judaism (3 cr.)

Description

The Zionist ideology and movement in its own terms, and in the context of modern Judaism. The course places Zionism in its historical and religious contexts, and examines its varieties. The Zionist movement is followed from its origins to the establishment of Israel. Related aspects of Israeli politics are then examined, with especial reference to ideological and religious debates.

HIST 3210 - Early Islamic History (3 cr.)

Description
In the space of a few centuries, Islam went from being a local Arabian religion to a global religion led by a continent-spanning empire. This course examines Islam's emergence and the rapid expansion of the Arab-Islamic communities under the Umayyad and Abbasid dynasties covering the period from the seventh to the mid-tenth centuries.

Cross-listed
Same as ARIC 3343.
When Offered
Offered in fall.

HIST 3211 - Caliphs and Sultans in the Age of Crusades and Mongols (3 cr.)

Description

Squeezed by invasions from the west (Crusades) and the east (Mongols), the late Abbasid period saw the rise of Shiism and the Sunni Revival as well as the emergence of new dynasties like the Fatimids of Egypt and North Africa, the Seljuk Empire across the Middle East, and the post-Seljuk regimes based in Egypt such as the Ayyubids and the Mamluks.

Cross-listed
Same as ARIC 3344.
When Offered
Offered in spring.

HIST 3212 - Gunpowder Empires: Ottomans, Safavids and Mughals (3 cr.)

Description
After the fall of the Mamluk Sultans of Cairo, the balance of power in West Asia shifted east, and Safavid Iran found itself squeezed between the two most powerful and wealthiest Muslim dynasties in history: the Ottomans and the Mughals. In the age of gunpowder, these empires competed among one another, but it was the rising threat of Europe that spelled danger for them all.

Cross-listed
Same as ARIC 3345.
When Offered
Offered in fall.

HIST 3215 - Zawiyas, Harems, Coffee shops, Everyday Life in the Pre-Modern Mideast (3 cr.)

Description
Examination of major trends in social and cultural trends, movements, and institutions in the medieval and early modern Middle East. Includes the interpretation of cultural identity, the transmission of knowledge and culture, the construction of social status, and the integration or marginalization of specific social groups in family, social and state structures.

Cross-listed
Same as ARIC 3321

HIST 3288 - Selected Topics in Middle East History (3 cr.)

Description
Focuses on theme or topic in the history of the Middle East. May be repeated for credit when topic changes.

Cross-listed
Same as ARIC 3397
When Offered
Offered occasionally.

HIST 3302 - Violence, War, and Conflict in Modern Africa (3 cr.)

Description
This course will explore the complexities of violent conflicts on the African continent in the past 125 years. As violence, conflicts and wars seem to be crucial elements of Africa's modern history; students will for example investigate if this means that Africans are inherently more violent than the rest of the world - or if such an assumption only disguises the complex historical roots of war and conflicts? Moreover, students will also discover that Africans have historically resisted violence and oppression just as often as they have promoted it. Students can expect to engage with a variety of interdisciplinary material and will be introduced to different African regions to get a deeper understanding of contexts of violence in Africa's past and present. By the end of the course students will be able to critically analyze common narratives about "the violent continent" reproduced by mass media.

HIST 4106 - Food in World History (3 cr.)

Description
An inter-disciplinary examination of the role of food in human history beginning with the agricultural revolution and including such topics as the Columbian exchange, industrialization, the rise of the restaurant, food as cultural identity, food policy and the state, fast food, gender roles, health and nutrition, and the emergence of modern attitudes towards food and the body.

HIST 4107 - The Environment in World History (3 cr.)

Description

An examination of the relationship between humans and the environment from the Agricultural Revolution (c. 10,000 BCE) to the present with an emphasis on the Industrial Revolution and the modern world.

HIST 4111 - Arabs in America (3 cr.)

Description

There are many misconceptions of Arab-Americans in scholarly discourses and media portrayals that hide the rich, deep and largely unknown histories of the diverse communities of Arabs that have immigrated to America as early as the 15th century. We will read and discuss scholarship as well as primary accounts on identities, representations and the historical realities of Arab-Americans across time, genres, and perspectives. Academic texts, ethnographies, and memoirs will provide insight to how different Arabs have navigated the intersections between identity, homeland, and adopted nation, how and why they immigrated, and how they have (or have not) assimilated into American society.

HIST 4112 - A History of Women (and Men) (3 cr.)

Description

This course uses the categories of gender and race to study the major events, processes, and players that have shaped the modern Middle East and Europe from the advent of Islam to the present. We analyze how women (and men) produced, participated in, and were affected by movements like religion, colonialism, nationalism, and revolution. Ultimately, we learn that a history of the Middle East and Europe cannot be understood without studying gender and race.

HIST 4113 - Ideas Dictators Hate (3 cr.)

Description

Through close readings of works of political, economic and religious thought produced by African intellectuals, this course provides a grounding in some of the major debates around identity, sovereignty, and racial, gender and sexual equality as they have played out on the African continent.

HIST 4188 - Selected Topics in World History (3 cr.)

Repeatable
May be repeated for credit when content changes.

HIST 4215 - The Marriage Crisis and the Middle East (3 cr.)

Description
This course examines how men and women imagine their nations through marriage and understand their rights and duties in the twentieth-century Middle East. It shows how marriage is a lens that reflects and critiques larger socioeconomic and political issues. It also contributes to our historical understanding of the "marriage crisis", which continues to dominate public debates today.

HIST 4216 - Remembering Cairo (3 cr.)

Description
This course provides grounding in the methodologies and sources of urban history while allowing students to explore Cairo's rich past and bewildering present. Times is spent outside the classroom on field trips and in projects with local associations working on urban heritage and development.

HIST 4217 - Colonialism and Imperialism: Domination and Resistance (3 cr.)

Description

This course tackles colonialism and imperialism from a global perspective. Its basic premise is that the colonial encounter was transformative for both colonizer and colonized, and is best understood as a history of tension and conflicts, in which both colonizer and colonized had agency. In this course, students will study not only the political and military aspects of that encounter, but also its ideological and cultural ones. Topics touched upon include: cultural imperialism, medicine, law, urban planning, and gender.

HIST 4219 - Modern Movements in Islam (3 cr.)

Description

Trends of thought and activism that developed throughout the Muslim world from the eighteenth century onward and identified themselves as Islamic. This course looks at intellectual roots, affiliations, and differences. It investigates modernity, reform, statehood, and social change as addressed by state and non-state actors, in theory and in practice.

Cross-listed
Same as ARIC 5134

HIST 4220 - Selected Topics in Middle Eastern History, 600-1250 A. D. (3 cr.)

Cross-listed
Same as ARIC 5135 .
When Offered
Offered occasionally.
Repeatable
May be repeated for credit when content changes.

HIST 4221 - Selected Topics in the History of Islamic Thought and Institutions (3 cr.)

Prerequisites
Prerequisite: consent of instructor

Cross-listed
Same as ARIC 5101.
Repeatable
May be repeated for credit when content changes.

HIST 4222 - Egypt under Nasser (3 cr.)

Prerequisites
(1) Working Knowledge of colloquial Arabic

(2) Junior standing in any field

Description
This course examines the Nasserite historical experience: its historiography, primary documents,

legacy, milestone events, institutional frameworks, and trajectory-all within the regional and global contexts of that period.

HIST 4288 - Selected Topics in the History of the Modern Middle East (3 cr.)

Cross-listed
Same as ARIC 5136.
Repeatable
May be repeated for credit when content changes.

HIST 4290 - Selected Topics in Modern Egyptian History (3 cr.)

Prerequisites
Consent of Instructor.

Description
Topics to be chosen according to specific interest, such as: the making of the modern Egyptian nation; cities, towns and villages in modern Egyptian history; social and cultural history of modern Egypt. The course involves Arabic material and the narratives could be in Arabic.

Repeatable
May be repeated for credit when content changes.

HIST 4303 - Global Capitalism and Africa: An Economic History (3 cr.)

Description
In this seminar students will explore the relationship between the rise of capitalism and the integration of Sub-Saharan Africa's labor and natural resources into the global economy in the nineteenth and twentieth century. We will be especially interested in two distinct but related issues: First, we want to explore the role of African labor, minerals, and agricultural products for the economic growth of the Global North. Second, we want to examine how oversea markets and foreign influences shaped local economies and "working lives" in different regions in Africa, and explore how Africans confronted these changes.

HIST 4400 - Independent Study (1-3 cr.)

Description
In exceptional circumstances, students may, with department approval, arrange to study beyond the regular course offerings. Open only to juniors and seniors with a minimum B average. May be repeated for credit if content changes.

HIST 4488 - Selected Topics in European History (3 cr.)

Repeatable
May be repeated for credit when content changes

HIST 4588 - Selected Topics in the History of the United States (3 cr.)

Repeatable
May be repeated for credit when content changes.

HIST 4801 - Historical Theory and Methodology (3 cr.)

Prerequisites
To be taken in senior year.

Description

This is the requisite final course for History majors. Its purpose is to consider some of the basic methodological issues and theories we confront when writing and reading modern history. It focuses on some of the major debates and the most defining scholarship in the field.

HIST 5222 - Seminar on the Nineteenth-Century Middle East (3 cr.)

Description
Readings, discussion, and research.

Cross-listed
Same as ARIC 5231.

HIST 5223 - Seminar on the Twentieth-Century Middle East (3 cr.)

Description
Readings, discussion, and research.

Cross-listed
Same as ARIC 5232.

Intensive English

ELIN 0101 - Intermediate English (0 cr.)

Description
This course works on foundational academic language skills, including listening, speaking, reading, and writing, as appropriate for undergraduate study at an English medium university. This course also prepares students' academic readiness skills necessary for successful engagement within the AUC community.

ELIN 0102 - Advanced English (0 cr.)

Description
This course works on foundational academic language skills, including listening, speaking, reading, and writing, as appropriate for undergraduate study at an English-medium university. This course also prepares students' academic readiness skills necessary for successful engagement within the AUC community.

ELIN 0301 - Intermediate English (for Graduates) (0 cr.)

Description
This course is designed to improve graduate students' academic writing, reading, listening and speaking skills. The course provides instruction on paragraph and essay development as well as reading comprehension, sentence structure, punctuation, and grammar. Emphasis is given to academic writing, reading and speaking through an integrative approach.

ELIN 0302 - Upper Intermediate English (for Graduates) (0 cr.)

Description

This course is designed to improve graduate students' academic writing, reading, listening and speaking skills. The course provides instruction on paragraph and essay development as well as reading comprehension, sentence structure, punctuation, summary and note-taking skills. Emphasis is given to academic writing, reading and speaking through an integrative approach.

International Human Rights Law

LAW 5134 - International Humanitarian Law (3 cr.)

Prerequisites
LAW 5232, LAW 5273

Description
This course provides basic introduction to the field of international humanitarian law (IHL), otherwise known as the laws of war, the law or armed conflict, or jus in bello. It will consist in an overview of the existing substantive body of international law relating to the regulation of armed conflict, as well as an exploration of its internal structure and dynamics. It will discuss in a first part the relationship between humanitarian law and both general international law and international human rights Law, with regard to applicability implementation, and enforcement. In a second part, the course and materials will approach the "principle of distinction" and its implementation in the so-called "Geneva Law", relating to protected persons, as well as the so-called "Hague Law", relating to the means and methods of combat. Final sessions will discuss questions of implementation and criminal responsibility.

When Offered
Offered in spring.

LAW 5170 - Special Topics in International Human Rights Law (3 cr.)

Prerequisites
Consent of the instructor.

Description
The course allows resident or visiting faculty to give seminars on special topics of international human rights law as regular 3 credit courses. It may also be used to accommodate short courses that visiting academics may give, with varying credit values depending on the number of hours covered.

Repeatable
May be taken a second time for credit if content changes.

LAW 5175 - Human Rights in the Middle East (3 cr.)

Prerequisites
LAW 5232 and LAW 5273

(Prerequisites can be waived by permission of the department).

Description
What does it mean to study human rights in the Middle East today? While exploring human rights violations in the Middle East might seem like a natural starting point, this course moves beyond that exercise. It aims at disrupting the traditional divisions and binaries of 'economic and social rights' versus 'civil and political rights'. It engages with human rights as a series of intersectional moves that, together, fundamentally shape life in the Middle East. Additionally, the purpose of the course is not only to study structures of domination, such as authoritarianism, Islamism, patriarchy and neoliberalism, but also to engage with spaces of resistance and struggle. Whether it is the Arab revolutions, the recent protests in Iran, or the struggles of the Kurds across the region, the people of the Middle East have been engaging in different forms of resistance that fundamentally transformed the region over the course of the past decades.

When Offered
Offered in spring.

LAW 5176 - Economic, Social, and Cultural Rights (3 cr.)

Prerequisites
LAW 5232 and LAW 5273

(Prerequisites can be waived by special permission of the Law department).

Description
Consideration of the historical development of the recognition of economic, social and cultural rights together with present convenants and other instruments operating at the international level. Specific rights such as the right to work, trade union rights, right to social security, right to

adequate standards of living, health and education are considered as well as their philosophical underpinnings and social modalities.

When Offered
Offered in fall.

LAW 5177 - Human Rights in Africa (3 cr.)

Prerequisites
LAW 5232 and LAW 5273

(Prerequisites may be waived by permission of the department).

Description
An overview of the contribution of the African continent to human rights law. The course will cover the specificities of Africa from the perspective of the development, interpretation, and enforcement of international human rights law from four perspectives:

(1) The development and contributions of the African regional system of human rights.

(2) The treatment of human rights issues in Africa by the universal system of human rights.

(3) The place and application of human rights standards in selected African countries.

(4) The application of international humanitarian law in contemporary African conflict situations.

As an advanced course dealing with the role of regional approaches and issues in the contemporary history of international human rights law, the substantive focus will be on the relevance of cultural and political specificity to human rights when seen from the perspective of the varied social contexts of the African continent. In light of the rich complexity of the African social, cultural and political background, some attention will be given to the particular situation of certain African States in the development of African human rights law, such as Egypt, Nigeria or South Africa.

When Offered
This course is offered at irregular intervals. Please contact the Department of Law for information about its availability.

LAW 5218 - International Refugee Law (3 cr.)

Prerequisites
LAW 5232 and LAW 5273 . (Prerequisites can be waived by special permission of the Law department).

Description
This course introduces the international refugee law regime and the background and historical context from which foundational concepts emerged. The bulk of the course is spent on the 1951 Refugee Convention and its Protocol, as well as the expanding mandate of UNHCR. The course considers some of the contradictions and dilemmas of international refugee law and takes into account developments in related areas of international human rights law, international humanitarian law and migration law. This course is required for all students seeking the MA or Diploma in Migration and Refugee Studies.

Cross-listed
Same as MRS 5101.

LAW 5273 - Introduction to International Human Rights Law and Critique (3 cr.)

Description
This course is an introduction to International Human Rights Law. As a gateway to the International Human Rights MA program, the course aims at providing participants with a forum to become acquainted with the basic conceptual underpinnings, institutional structures, and substantive complexity of international human rights.

International Management

CEMS 5200 - Block Seminar (1.5 cr.)

Description
This is a 5-day seminar delivered before the start of term 1. The seminar, or part of it, could be held off campus (e.g. Cairo, Ain Sokhna, Hurgada, etc.) to capitalize on local attractions and touristic heritage of Egypt. Corporate partners would be involved in delivering speeches during the seminar.

- The objective of this seminar is to introduce students to regional challenges that take place in Africa and the Middle East with including cultural specificities.
- The seminar is based on blended learning with in-class sessions, guest speakers and a real life case solving and presentation by students.

CEMS 5201 - Global Strategy (3 cr.)

Description

This course offers an integrated perspective about the challenges associated with strategy design, implementation, and assessment within the international context. It addresses two central questions that top managers ought to answer: 1) What (international) businesses shall we get into and/or out of? And 2) How to compete? Considering both the firm's unique characteristics and the structure of the markets where it competes. Through readings, case studies, a business strategy simulation, and interactive lectures, students are exposed to the latest techniques and methodologies for crafting corporate, business, and functional strategies meant to improve firms' local and international competitiveness. Students will also be introduced to the relevant analytical techniques for diagnosing the competitive position of a business, and assessing alternative strategic directions in a global context. This course discusses topics related to global strategic management. Most students who join this program would have already taken an undergraduate strategy course. Accordingly, this course would not be discussing main stream strategy topics but rather topics related to global challenges in a dynamic global environment with special emphasis on the role played by technology and innovation in transforming the way global business is being conducted and strategies being formulated.

CEMS 5202 - Global Leadership (3 cr.)

Prerequisites

Students admitted to the program are ones that would have already conducted at least 30 Cr of management education.

Description

This course focuses on current and critical issues in global management by examining the techniques and practices underpinning organizations across the globe. Through the lens of various functions of the organization and global management practices, decision-making processes will be unpacked including the impact these have on individuals, institutions and countries. This course will begin with reflective individual based assessments identifying

individual traits, behavior and assumptions which will form the basis in understanding key ethical, social, cultural and cognitive factors affecting management practice and global organizations. Through a flipped classroom approach, students will be a central part to experiential and active learning, examining and reflecting on a range of management assumptions, communication and negotiation patterns and leadership styles that are integral to global management practice. This learning will be embedded and reinforced through the application of management concepts to ambiguous and complex business scenarios from international environments, preparing students for future international careers. As global citizens, students will explore and analyze key management theory and empirical evidence, and apply this to case studies and business scenarios, role play, group projects, individual assignments and reflections. By the end of this course, through a range of teaching and learning methods, students will develop a global managerial mindset through informed dialogue, educated and justified choices and decision making, negotiated teamwork and leadership skills that goes beyond traditional thinking.

CEMS 5203 - Bottom of the Pyramid (BOP) Marketing (3 cr.)

Prerequisites
For AUC Students : MKTG 2101 ; MKTG 3201

For non-AUC students :

- A course in principles of Marketing
- A course in Marketing Research

Description
Product, price, promotion and place: these are the four key areas in which marketing influences consumers. This innovative course takes the stance that poor consumers are distinctly disadvantaged in each of these areas. Documenting the imbalance of the exchange process by describing the business practice of those who market to poor consumers, issues related to basic necessities such as food, housing and transportation are addressed, as well as the consumption of `sin' products by poor consumers. The problems faced by those who target low-income consumers are also examined, including the conflict between sound marketing practices and marginally ethical or unethical applications of those practices to this target customer group.

CEMS 5204 - Advanced Financial Management: Cases from the Middle East (3 cr.)

Prerequisites

For AUC students : FINC 3201 - Investment Analysis (3 cr.)
For Non-AUC students : Introductory courses in basic concepts of Financial Management

Description
The main objective of this course is to analyze critical financial management issues faced by CFOs and investment bankers through practical case studies from the Middle East. Cases in Corporate Finance will focus on financing decisions, capital structure, advanced valuation methodologies including real options analysis as well as value based management. Cases in Investment Banking will tackle issuing related to corporate access to financial markets including public offerings, capital increases, convertible bonds, rights issues as well as trading and liquidity concerns for listed firms. Each topic will be covered using cases studies developed by the professor based on actual transactions he was involved in.

CEMS 5205 - Global Supply Chain Management (3 cr.)

Prerequisites
For AUC students: OPMG 4301 - Supply Chain Management (3 cr.)
For non-AUC students : An introductory course in Supply Chains at home university.

Description
This course focuses on the planning, processes, and activities of supply chain management for companies involved in international commerce. It discusses the basic theories of international trade, cultural differences in global supply chains, sustainability, risks, and security and the decision dilemmas related to outsourcing, offshoring and nearshoring. Students examine the end-to-end processes and operational challenges in managing global supply chains, such as, the basics of global trade, international transportation, duty, taxes, cultural differences, risks and security, and green supply chains issues. Please refer to program overview for a detailed description of the class sessions.

CEMS 5206 - Cultural Heritage and Sustainable Business (1.5 cr.)

Description

The course will be covering a wide range of disciplines (such as cultural heritage, consumer behavior, financial tools, marketing, tourism) and related concepts and terminology. The course accompanies participants in a step by step approach to understand requirements of cultural heritage clients and projects, build a strategy phased out into clearly articulated tactics, plans and

programs, develop the required organization that will deliver on the strategy put in place, develop cultural heritage products and services complete ecosystem and develop a business and financial model using different financial tools- to ensure the viability of the project.

CEMS 5208 - International Business Analytics (3 cr.)

Description

This Business Analytics course focuses on data-informed decision-making but within the context of technology awareness.

When Offered

Once per year.

CEMS 5220 - Global Citizenship Seminar (0.5 cr.)

Description

Highly publicized scandals and increased stakeholder activism for sustainable development have resulted in calls for more responsible global leadership. At the same time, emerging economies characterized by weak institutions, political instability, and a shaky rule of law have gained in importance for global business. The purpose of this 2-days seminar is to highlight the challenges that global leaders face in addressing the needs of diverse, cross-boundary stakeholders, with a particular focus on Western multinational enterprises (MNEs) doing business in emerging markets. The course will comprise guest lecturers from MNCs with special challenges given to students to work upon in teams to give suggested solutions. Moreover, the seminar will introduce students to traits and expectations from current Global leaders.

When Offered

Offered in spring.

CEMS 5221 - Skill Seminar (0.5 cr.)

Description

These series of one-day seminars will be delivered by the corporate partner. An example of topics that may be offered: self-leadership, time management; social and emotional intelligence,

teamwork dynamics, professionalism and positive attitude, integrity and responsibility, business etiquette.

CEMS 5250 - Business Project (7.5 cr.)

Description
The Business Project is the most complex program element of the (MIM/CEMS), as it involves at least three stakeholders: the students, the university advisor, and the client company. It mainly corresponds to a team field study project carried out by the students in Term 2. Corporate and Social Partners representatives would be invited to participate in the field study projects and offer a platform for the students to work on a real-life "problem" or managerial issue that companies would like to solve or to address. Students will develop consultant-client relationship with the organization to 1) analyze and diagnose the organization's request: and 2) Develop the detected opportunities with proposed course of actions while applying the latest knowledge or theories in management research to problem solving. The organization would pose challenges to the students as topics for their business projects and this topic list would be updated regularly. Faculty members from the School will serve as advisors on each project group. Each project group normally consists of three to four students and conducts a strategically focused study.

CEMS 5355 - International Internship (0 cr.)

Prerequisites
Complete TERM1 and TERM 2 requirements of Master in International Management /CEMS

Description
Internships provide students with the real-life professional learning experience. The CEMS internship must therefore be at the level of a graduate recruit in order to provide valuable business experience. Each student is required to perform a minimum of 8-week international internship during the summer outside the home institution where he/she applied, after completing semester two. Internships can take place at a CEMS Corporate Partner, although not compulsory. They can also take place at CEMS Social Partners or other non-profit organization such as in a humanitarian mission, provided responsibility levels correspond. Students are responsible for finding their own internship and for all official documents required for the employment.

Journalism & Mass Communication

JRMC 2200 - Introduction to Mass Communication (3 cr.)

Description
An introductory survey of the theory, history, structure, and function of mass communication in the Middle East and globally.

Notes
Open to all university students.

JRMC 2201 - Media Writing (3 cr.)

Prerequisites
Acceptance into the major

Description
Study and practice of basic writing, editing, and reporting techniques used in the international media; newsroom practices to develop listening, reading, writing and editing skills.

JRMC 2202 - Multimedia Writing and Production (3 cr.)

Prerequisites
JRMC 2201

Description
Cross-media study and practice of writing, reporting and production for print, broadcast, and the internet.

JRMC 2203 - Mass Media Ethics and Responsibility (3 cr.)

Description
Critical analyses of media laws and professional philosophies, standards, and practices in journalism, public relations, advertising, and other fields of mass communication. Discussion of ethical and practical considerations and dilemmas in different professional and social contexts.

JRMC 2205 - Introduction to Arabic Writing and Reporting (3 cr.)

Description
A course which introduces Arabic reporting and writing to students as a first step to learning the basics of Arabic journalism.

When Offered
Offered occasionally.

JRMC 2208 - Media Literacy in the Digital Age (3 cr.)

Prerequisites
JRMC 2200

Description
This course takes both a critical (theory) and a creative (practice) approach to news and media literacy in the digital age using various media contexts. Students will activate and exercise their media literacy skills and dispositions by accessing, analyzing, and evaluating news and other media; and creating, producing, and communicating their discoveries through the use of social media platforms.

JRMC 2230 - Photography Foundations 1 (3 cr.)

Description
History of photography, digital camera skills, visual composition, digital production, developing assignment ideas, interpreting images.

JRMC 2250 - Global Media Systems (3 cr.)

Description
Comparative study of global communication systems and theory in relation to national and international development.

Notes
Open to all university students.

JRMC 2270 - Online Communication (3 cr.)

Description
An introduction to the Internet as a medium of communication, as well as to its nature, development, and future. Students will examine how the Internet is being used, and how it is affecting communities and societies at large. Ethical aspects of the online experience will also be covered.

JRMC 2280 - Entertainment Media (3 cr.)

Prerequisites
JRMC 2202

Description
Students learn about the functions and influences of the entertainment industry - from television, film and music journalism, to video game journalism and celebrity coverage; its social and ethical parameters; and how social media is an integral component.

JRMC 2299 - Selected Topic for Core Curriculum (3 cr.)

Prerequisites
RHET 1010

Description
Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

When Offered
Offered occasionally.
Notes
Enrollment is limited and priority is given to students with declared JMC majors.

JRMC 3301 - Journalism Editing and Design (3 cr.)

Prerequisites
JRMC 2202

Description
Principles of, and laboratory practice in, copyediting and proofreading; headline writing; scaling and cropping photographs; and layout and design.

JRMC 3303 - Data for Media (3 cr.)

Description
This course explores the fundamental concepts and principles that underlie techniques for extracting useful information and knowledge from digital data. The primary goal of the course is to help you view problems from a data perspective and understand how to systematically analyze such problems. This data-analytic thinking can then be applied in a variety of ways, from data journalism to customer relationship management to data-driven decision making.

JRMC 3305 - Introduction to Visual Communication (3 cr.)

Prerequisites
JRMC 2201

Description
Introductory laboratory in basics of typography, desktop publishing, digital design of publications and advertising. Taught by lecture with practical application.

JRMC 3307 - Sports Media (3 cr.)

Prerequisites
JRMC 2201 - Media Writing (3 cr.)
JRMC 2202 - Multimedia Writing and Production (3 cr.)

Description
Introduction and application to the sports media industry; the course explores the essential reporting and the art of covering sports news across all media outlets (newspapers, magazines, radio, television and online media); the course covers the ethical codes that make a well balanced story in the fast growing field of sports media coverage.

JRMC 3310 - Public Opinion, Persuasion and Propaganda (3 cr.)

Description
Theoretical and practical study of the social role of international and national mass media, policymakers and the public in formation of public opinion.

When Offered
Offered occasionally.
Notes
Open to all university students.

JRMC 3312 - Multimedia Journalism Lab: The Caravan (3 cr.)

Prerequisites
JRMC 2202, JRMC 2205

Description
Supervised newsroom experience in reporting, writing, editing, designing and layout for print, broadcast and online version of The Caravan and AUC TV.

JRMC 3315 - Introduction to Integrated Marketing Communication (3 cr.)

Prerequisites
JRMC 2202

Description

Survey of professional principles and practices in integrated marketing communication and their relationship to business and government, with special emphasis on the United States and Egypt.

JRMC 3320 - Mass Communication Research (3 cr.)

Prerequisites
Junior standing.

Description
Methods and theories used in mass communication research. Emphasis on the various methods

and measurement tools used in message, communicator and audience measurements. They will learn to work with statistics, databases, specialized websites and other resources.

JRMC 3330 - Photojournalism and Documentary Practices (3 cr.)

Prerequisites
JRMC 2230

Description
History of photojournalism, advanced camera skills, photographic lighting skills, visual story-telling strategies, editing and sequencing, research subjects, building a portfolio.

JRMC 3333 - Research for Journalists (3 cr.)

Prerequisites
JRMC 3312

Description
A research course designed specifically for journalists, providing students with a broad understanding of how to find and analyze various forms of information. They will learn to use databases, specialized websites and other Internet resources and how to organize and apply their findings for news and feature reporting.

JRMC 3337 - TV Scriptwriting and Production (3 cr.)

Prerequisites
JRMC 2202

Description
Classroom and field training in basic television scriptwriting and story production. Instruction in theoretical principles that differentiate television from print journalism, ethical aspects of picture use and editing and related topics. Requires weekly practice hours outside class time.

JRMC 3339 - Studio Production: AUC TV (3 cr.)

Prerequisites
JRMC 3337

Description

Techniques of television production and presentation from planning and writing to directing and producing. Topics of study include elements of various forms of television writing, production, design, lighting, graphics, program planning and production practices in a studio or workshop setting. Requires weekly practice time outside class to provide AUC TV's daily news bulletin.

JRMC 3355 - Creative Copywriting Strategies (3 cr.)

Prerequisites
JRMC 3315

Description
Development of creative strategy, writing advertising and promotional copy, designing and preparing layouts for various media, planning and executing written and oral presentations.

JRMC 3360 - Introduction to Podcasting (3 cr.)

Description
This course is an introduction to podcasting. Students will gain experience in listening, conceptualizing, organizing, writing and producing a variety of podcast formats.

When Offered
Offered in fall and spring

JRMC 3366 - Online Behavior and Web Analytics (3 cr.)

Prerequisites
Junior Standing

Description
This course proficiently tackles today's business challenges with this powerful new framework that will permanently change how students think about analytics. It provides a wealth of tactics

for creating a pragmatic strategy, applying analytical techniques correctly, solving challenges such as measuring social media and multi-channel campaigns, achieving optimal success by leveraging experimentation, and employing approaches for truly listening to your customers.

JRMC 3380 - Digital Storytelling (3 cr.)

Prerequisites
JRMC 2202

Description

Defining the components that make a good story you want to tell to your audience. Identifying the tools that best serve your story; learning the art of storytelling through the usage of emerging technologies; studying the different techniques that add value to the production process; learning the ethical standards necessary in the storytelling process in the digital age.

JRMC 3390 - Media Economics (3 cr.)

Prerequisites
JRMC 2200

Description
This course covers the fundamental concepts, theories, and approaches of media economy. Students learn how to use these theoretical concepts to analyze media markets, industries, and the practices of media organizations. In addition, students study the factors that shape media economy, such as technology, regulations, organizational and strategic factors. Finally, the course discusses the new media trends in media economy and the development of social media industries, and examines the impact of media economy on vital issues, such as media policy making, competition law and social discourse.

JRMC 4403 - Lifestyle Writing (3 cr.)

Prerequisites
JRMC 2202

Description

Principles and intensive practice in researching, organizing, and producing lifestyle features for digital platforms. The course teaches students how to produce written, audio and visual features that cover topics ranging from travel to film reviews.

When Offered
Offered occasionally.

Notes
Enrollment is limited and priority is given to students with declared MMJ majors.

JRMC 4405 - Advanced Visual Communication (3 cr.)

Prerequisites
JRMC 3305

Description
Advanced practical integration of digital text and photographs in desktop publishing of printed material using state-of-the-art production hardware and software.

When Offered
Offered occasionally.

JRMC 4406 - Internship (3 cr.)

Prerequisites
Junior standing.

Description
Field experience in an approved professional setting in journalism, advertising, public relations, public information, broadcast or online media outlet. Supervised by a professional and an AUC full-time faculty member.

JRMC 4412 - Newsroom Editing and Management (3 cr.)

Prerequisites
JRMC 3312

Description
Supervised advanced newsroom experience in writing, editing, layout and management of *Caravan*, the AUC newspaper.

JRMC 4415 - Public Relations Theory and Techniques (3 cr.)

Prerequisites
JRMC 2202 and JRMC 3315

Description
Principles and practical use of public relations and public information techniques, with emphasis on media use for business and non-profit organizations.

JRMC 4420 - Media Management (3 cr.)

Prerequisites
Junior standing.

Description
Management theories and practices as applied to media organization, unique characteristics of media outlets, various operating philosophies, legal issues, regulations and related topics will also be covered including programming strategies.

JRMC 4425 - Integrated Marketing Communication Campaigns Capstone (3 cr.)

Prerequisites
JRMC 3315, JRMC 3320, JRMC 3366

Concurrent
JRMC 4415 Can be taken concurrently
Description
Examination, development, and critique of advertising and marketing communication campaigns, with emphasis given to creative and media factors.

Notes
IMC seniors only.

JRMC 4430 - Advertising Agency Operations (3 cr.)

Prerequisites
JRMC 3315 - Introduction to Integrated Marketing Communication (3 cr.)
JRMC 3320 - Mass Communication Research (3 cr.)

Description
This course is designed to provide the students with insight into how advertising agencies are organized and managed. The five essential functions of the agency are deeply explored and integrated. The account management, the strategy development, the creative team, the art direction, and the business management are all equally important. Each is studied with guest speakers and site visits to demonstrate how they are managed to contribute to the success of the business.

JRMC 4441 - Camera and Editing Workshop (3 cr.)

Prerequisites
JRMC 2202

Description
Intensive field and lab training with digital video camera. Computer-driven digital editing program enables video journalist to shoot and edit news events to a finished professional product. Requires weekly practice hours outside class time.

JRMC 4444 - Media Law and Policy (3 cr.)

Prerequisites
JRMC 2203, Junior standing

Description

An explanation of communication law and regulation with its major segments libel, privacy and news-gathering together with journalists' rights and defenses against libel suits. Issues of national and international topics are covered together with media law cases.

Cross-listed
AMST 4444

JRMC 4460 - Audio Production (3 cr.)

Prerequisites
JRMC 2202 and junior standing.

Description
Studio experience in Audio production.

JRMC 4471 - Online Journalism (3 cr.)

Prerequisites
JRMC 2202

Description
Examination of the emerging forms of information delivery by computer and related convergence of print and broadcast media. Emphasis on learning multi-media reporting skills needed to publish quality work on the Internet.

JRMC 4480 - Multimedia Reporting Capstone (3 cr.)

Prerequisites
JRMC 3312, JRMC 3380, JRMC 4460, JRMC 4441

Description

Advanced principles and practice in news gathering and reporting, effective organization and presentation, and writing. Students produce a capstone reporting project that demonstrates their ability to operate on all media platforms and produce professional, responsible and ethical journalism.

Notes
For seniors only.

JRMC 4482 - Media Convergence Capstone (3 cr.)

Prerequisites
JRMC 3320, JRMC 4420 and JRMC 4444

Description
Explores the intersection of mass communication technologies. Students examine the digital future of media and the impact of media convergence on politics, business, civil and global society.

Notes
For seniors only.

JRMC 4490 - Special Topics in Mass Communication (1-3 cr.)

Description
Special topics in journalism and mass communication will vary depending on instructor.

When Offered
Offered occasionally.
Repeatable
May be repeated by student for credit if content changes

JRMC 4499 - Directed Individual Study in Mass Communication (1-3 cr.)

Prerequisites
Junior standing and written project proposal endorsed by fulltime faculty with project review by department.

Description
Individual projects in mass communication completed under the supervision of a full-time mass communication faculty member. Students propose projects not covered by coursework that will complement their academic programs.

Repeatable
May be repeated once for credit if content changes.
Notes
Enrollment is limited and priority is given to students with declared JRMC majors.

JRMC 5200 - Seminar in Mass Communication Theory and Literature (3 cr.)

Description
Survey of mass communication theory and the philosophical, sociological and political effects of mass media on audiences and societies.

When Offered
Offered in fall.

JRMC 5201 - Advanced Reporting and Writing (3 cr.)

Prerequisites
appropriate professional experience or undergraduate coursework (JRMC 2201 and JRMC 3301 or equivalent).

Description
Intensive reporting, research, and writing of in-depth articles for magazines and newspapers with intent to publish.

When Offered
Offered occasionally.

JRMC 5202 - Seminar: Current Issues in Mass Communication (3 cr.)

Description
Overview of major issues in mass communication and how they impact audiences and society.

When Offered
Offered in spring.

JRMC 5204 - Quantitative Research Methods in Mass Communication (3 cr.)

Description
Introduction to the scientific method. Quantitative and qualitative mass media research methods, including focus groups, surveys, content analysis, and experiments. Data analysis and

interpretation. Individual and/or group research projects may be required.

When Offered
Offered in spring.

JRMC 5205 - Qualitative Research Methods in Mass Communication (3 cr.)

Description

This course provides students with the tools to perform critically engaged, theoretically informed research using interviews, focus groups, historical research, oral histories, ethnography and participant observation, textual analysis, and online research. Each technique is explained with step-by-step instructions that integrate theory with practice and a case study drawn from published research demonstrating best practices for young media scholars. The challenges and ethical issues in collecting offline and online qualitative data and information and presenting it are thoroughly discussed. The course tackles material on digital technologies, including a discussion of online research and using data to give students the tools they need to work in today's convergent media environment.

JRMC 5206 - Internship (3 cr.)

Description
Field experience in an approved professional setting in journalism, advertising, public relations or public information. Supervised by a professional and an AUC full-time faculty member.

When Offered
Offered occasionally.

JRMC 5230 - Readings in Advertising & Branding (3 cr.)

Description
This course aims to introduce graduate students pursuing their masters in journalism and mass communication to selective hot topics for research in Advertising and Branding. Three recent and most cited articles are chosen to guide the discussion and explore the literature, the methodologies, and the research agenda related to the topic. The discussion compares the author's approach (s) of each of the three articles and the style they chose to present their contentions. A special focus on the research agendas as they open up new realms for the

students to pursue a topic for their thesis. Beyond the deep-dive in the selected topics, this course also aims to review and expand the students' horizons in how the literature reviews can be different depending on the type of article. We will explore, by example, how methodologies are formulated, data is collected, analyzed, and presented, how insights are gleaned and discussed, and how research agendas are developed and staged. Finally, the students will be drilled to formulate an idea for a research paper based on the topic studied.

When Offered
Fall and Spring if the need arises

JRMC 5240 - Reporting Civil Society (3 cr.)

Prerequisites
JRMC 5201 .

Description
Provides the knowledge and skills that enable students to report on Arab civil society organizations. Combines seminar-style instruction on structure and role of civil society groups with hands-on print and radio reporting about Egyptian civil society for a new civil society portal based at the Adham Center.

When Offered
Offered in fall.

JRMC 5250 - Seminar in International Communication (3 cr.)

Description
The course explores the structure of international communication, the role of communication media and the political, economic and cultural contexts of communication. Both the historical and theoretical paths of international communication are examined closely in addition to the critique of media and contemporary forms of communication. Emphasis also lies on global news communication systems, including international news agencies; the role of news correspondents, global journalism and cross border journalism, information flow, propaganda and comparative media systems.

When Offered
Offered in Fall.

JRMC 5260 - Seminar on Electronic Journalism and Arab Society (3 cr.)

Description
A comprehensive seminar examining the role of journalists in society. Covers both historic role and rights and responsibilities today. Issues include ethics, journalist-government relations, fairness and balance, freedom of the press, impact on domestic and international policy, role of the media in conflict and related topics. Discussion will cover comparative approaches in the West, developing countries and the Arab world, with particular emphasis on role of media in regional politics and international relations in the post-9/11 era.

When Offered
Offered in spring.

JRMC 5270 - Seminar in Mass Communication and National Development (3 cr.)

Description
The role of mass communication in developing nations and its relationship to economic growth, education, socialization, persuasion, and diffusion of innovation.

When Offered
Offered in spring.

JRMC 5271 - Digital Journalism (3 cr.)

Description
Examination of the ways in which all forms of journalism are converging in the digital realm. Emphasis will include writing and reporting for the internet and other multi-media platforms, such as podcasts and digital phones, and the practical ways in which broadcast and print are merging on the internet.

When Offered
Offered occasionally.

JRMC 5280 - Television and Digital Broadcasting: Impact and Development (3 cr.)

Description
The development, potential progress, and impact of television and digital broadcasting, including new digital platforms, streaming, public service television; and issues of diversity and balance of content.

When Offered
Offered in fall.

JRMC 5290 - Special Topics (3 cr.)

Description
Content varies with the instructor. Can be repeated once for credit if content changes.

When Offered
Offered occasionally.

JRMC 5299 - Research Guidance and Thesis (3 cr.)

Description

Consultation with students as they prepare their theses.

When Offered
Offered in fall and spring.

Libraries and Learning Technologies

LALT 1020 - Libraries and Learning Technologies (0 cr.)

Prerequisites
LALT 1020 has to be taken no later than the semester in which RHET 1020 is taken.

Description
Information literacy IL (and digital literacy) is fundamental to all disciplines at the university-level and is a pillar of lifelong learning in the 21st century in an online, digital, and informational age. Digital and informational skills begin before you arrive at university, are critical to academic

success while at AUC, and will then continue after you graduate, as a foundation to navigate the world around you. This course is a core curriculum requirement for all students and is designed to help you develop important research skills through exposure to IL concepts and library technologies. You will learn to find, evaluate, and cite information in an academic context. You will also learn how to think more critically about the different types of information that you encounter every day and how to apply that to various aspects of your academic, professional, and personal lives. You will examine concepts of popular and scholarly information, peer review, primary and secondary sources, authority, and explore how those intersecting ideas impact your research approach on any topic. Additionally, you will become more comfortable using both the physical and online resources that the library has to offer in support of your academic learning and work at AUC.

Notes
This is an online, self-paced course with only the Final Exam proctored and taken face-to-face at the end of the semester.

Linguistics

LING 2200 - Introduction to Linguistics (3 cr.)

Description
Major aspects and procedures of the systematic study of human language in its biological and social contexts. Principles and techniques of linguistic analysis as they relate to cognition, symbolization and other aspects of culture.

LING 2201 - Languages of the World (3 cr.)

Description
This course aims to acquaint students with basic knowledge of the world's natural languages. We will look at the diversity and fundamental similarities among the languages of the world and, in doing so, explore the following topics: language families and historic relationships, linguistic typology and language universals, language policy and politics, writing systems, and language obsolescence.

LING 2210 - Principles and Practice of Teaching English (3 cr.)

Prerequisites
RHET 1020

Description
This course introduces the latest theories, principles and techniques of teaching English. It is a community based learning course and gives students practice by peer teaching, observing others teach and actual teaching in the community in order to learn to reflect and evaluate critically.

LING 2220 - Language and Society (3 cr.)

Description
This course deals with the relation between language and society. It tackles issues pertaining to the relation between our gender and the way we talk, and how does our social background affect the way we speak and judge others' way of speaking. The following questions will be covered in the course
What is a linguistic community?
How does language reflect our identity?
Is our gender reflected through language or constructed through language?
Is there a relation between language and religion? Language and race? Language and social class? Language and education? Language and media?

LING 2230 - Language and Communication (3 cr.)

Description
The course examines the complex and multifaceted interplay between language and communication in multiple social contexts. It shows how variation in language use from genre to genre and from context to context could either enhance communication, or lead to miscommunication. Negotiating meaning in areas of sociology, anthropology, politics and business are all contexts where language plays a pivotal role in reaching successful communication. The course incorporates theoretical frameworks as provided by pragmatics, intercultural sociolinguistics and discourse analysis in order to examine the relationship between language and communication within the same context and between different context where other social factors affect communication.

LING 2240 - Styles in Languages (3 cr.)

Description

This course addresses the linguistic analysis of the styles of multi-lingual texts whether original or translated into English/ Arabic. Although reference is made to literary texts, other types of written, spoken, and digital texts are discussed; such as advertisements, interactive fiction games, podcasts, digital blogs, causal narratives as well as other types of multi-modal discourse. During the course, students are introduced to some of the typical stylistic techniques characterizing the genre under study, within the cultural context it is produced. Students are also introduced to the use of basic corpus linguistic techniques in stylistic analysis. The course provides students with the 'linguistic toolkit' for working on the language of texts. This helps them explain how language creates meaning, style and effect differently across different genres and different extra-linguistic contexts.

When Offered
Once a year.

LING 2250 - Foundations of Translation Theories (3 cr.)

Description
This course taps into issues related to theoretical foundations, trends, and approaches in translation. Students are expected to be exposed to the role of different theoretical frameworks in shaping translation practices in various contexts. The course will provide opportunities for students to reflect on a wide range of translation theories and critically evaluate how they inform the translators. The discussions and debates in this class are also expected to provide the students with useful tools when interacting with texts and raise their awareness about the role of theories and social contexts in influencing translation activities.

LING 2299 - Selected Topic for Core Curriculum (3 cr.)

Prerequisites
RHET 1010

Description
Course addressing broad intellectual concerns and accessible to all students, irrespective of major..

Repeatable
May be taken more than once if content changes

LING 3075 - Language in Culture (3 cr.)

Description
The role played by language in humankind's symbolic relation to the world. Emphasis on linguistic analysis, ethnosemantics, sociolinguistics, expressive speech, and language and socialization as these elucidate patterns of cognitive orientation.

Cross-listed
Same as ANTH 3075.

LING 3220 - Introduction to Phonetics (3 cr.)

Description
Study of the articulatory and acoustic properties of speech sounds and features of language with particular reference to English and Arabic. Includes introductory work in transcription and technological developments in phonetic research.

LING 3310 - Linguistic Fieldwork (3 cr.)

Prerequisites
LING 2200

Description
The purpose of this introductory course is to familiarize students with linguistic fieldwork. Students will be introduced to basic concepts in linguistics research and also to different approaches to research design. The course will focus on different stages of conducting a research project, including identifying a research problem, deciding on a research design, and planning data collection and analysis. Building on this work, students will be involved in transcribing and analyzing language data collected from a natural setting. The course aims at providing students with tools needed to carry out these tasks.

LING 3320 - Language and Politics (3 cr.)

Description

This course explores how language reflects and makes political thought and ideologies. It will also shed light on issues of language and national identity.

By drawing on linguistic theories, the course will cover areas as diverse as education and politics, discourses related to racism and exclusion in political contexts, and colonial history and its impact on language ideologies and linguistic choices. Data for this course will be very diverse and will include materials drawn from social media, mass media, and surveys.

LING 3330 - Introduction to Corpus Linguistics (3 cr.)

Prerequisites
LING 2200 - Introduction to Linguistics (3 cr.)

Description
This course introduces corpus linguistics (CL) as a means of analyzing language using computer concordancing software and the Internet. Through using various search techniques, students will be able to explore English vocabulary and grammar as well as other aspects of language use such as collocation, idioms, phraseology, and discourse.

LING 3340 - Language Assessment (3 cr.)

Description
This is an introductory course in language testing which aims at providing students with tools needed to assess language proficiency. The first section of the course focuses on basic terminology in language testing, such as reliability, validity, and stages of test development. The second section addresses issues related to testing different language skills and features including assessment of reading, writing, listening, speaking, grammar, and vocabulary. The final part of the course deals with issues related to assessing young kids, alternative methods of assessment, using technology in language testing, and ethics in assessment. During the course, students will be given the opportunity to write and review test items

LING 3350 - Translation of Professional Documents (3 cr.)

Description

This course taps into issues related to translation of professional documents from different fields. The students will be exposed to practical skills and experiences required for dealing with professional texts belonging to various domains/content areas, including, but not limited to, law, business, medicine, audiovisual materials, and literature. During the course, the students will have the opportunity to study and analyze the characteristics of professional texts and also discuss relevant terminology, structures, and stylistic features. Upon completion of the course, the students are expected to acquire the necessary tools to translate professional texts from different content domains.

LING 4099 - Selected Topics in Linguistics (3 cr.)

Prerequisites
9 hours of humanities and/or social sciences, and junior or senior standing.

Description
This is a special topics course in which topics will be chosen according to specific interests of the students and areas of specialization of faculty. Topics could include, but would not be limited to, *sociolinguistic, language in the media, language and politics*, and *advanced ESOL methodology.*

LING 4212 - Language and Human Development (3 cr.)

Description
Linguistic and psychological concepts in first- and second-language learning; human perceptual and productive language processes; biological foundations of language, bilingualism and multilingualism; and inferences from animal communication.

LING 4351 - Technology-Mediated Translation (3 cr.)

Description
This course provides basic foundations for the use of technology in translation of texts. Students will be exposed to a wide range of technology-mediated transition tools. These tools focus on different areas, including CAT tools, machine translation applications, and terminology management software. Students will also be given the opportunity to see how technology can be utilized in translation-related research projects.

When Offered
Once per academic year.

LING 4410 - Introduction to Computational Linguistics (3 cr.)

Prerequisites
CSCE 1101 - Fundamentals of Computing II (3 cr.) ; LING 2200 - Introduction to Linguistics (3 cr.) ; LING 3330 - Introduction to Corpus Linguistics (3 cr.)

Description
Computational linguistics is an interdisciplinary field of study that brings linguistics and computer science together. This course introduces students to the main concepts of the field and its real-world applications, including, but not limited to, machine translation and information retrieval. Furthermore, it gives students hands-on experience with using and developing computational linguistics tools such as part-of-speech taggers, morphological analyzers, syntactic parsers, and semantic interpreters. To use and develop such tools, students will learn about regular expressions, programming for text analysis, and machine learning. No prior knowledge of computer science or programming is required for this course.

LING 4440 - UN and International Conference Simultaneous Interpretation (3 cr.)

Description
This is an introductory course which aims at presenting theoretical and technical background that would help set-off prospective simultaneous interpreters on the process of discovering their field. The course deals with issues like the modes and settings of interpreting, linguistic competency and techniques, skills useful to simultaneous interpreters, as well as means of dealing with challenging conditions that may exist in the real world. Though the course focuses on interpretation from Arabic to English and vice versa, issues addressed are relevant to all simultaneous interpretation regardless of language.

When Offered
Once per academic year.

LAW

LAW 4210 - Law and Global Governance in the 21st Century (3 cr.)

Description

The seminar provides a survey of contemporary institutions of global governance with a particular focus on the role of law. It starts with a historical overview of past institutional experiments to regulate the complexities of international relations before the 19th century, during the inter-war period, the post WWII institutional architecture for global governance, and into the 21st century. Students will then be guided through a virtual tour of different institutions such as the UN system, International Financial Institutions, the World Trade Organization, the European Union, other regional organizations (e.g., African Union, Arab League). The seminar will also explore the role of different actors (e.g., states, multinational corporations, international organizations, civil society) in global governance. The seminar will then engage the students in guided research work to explore contemporary global governance challenges such as global warming, migration, poverty, public health emergencies, or mass atrocity.

When Offered

Spring or Fall (once a year).

LAW 4212 - Law and Justice in our Times (3 cr.)

Description

This seminar provides an overview of law, and its roles in governing modern societies. Beginning with a general introduction to the theories and concepts of law, its focus narrows down to law in Egypt and the Arab world. This will allow students to analyze and evaluate the effects of law in contemporary Egyptian society. The seminar is designed for a multi-disciplinary audience with no background in law required.

Students will first engage with fundamental questions about the nature of law, including the postulated connections between law and justice, or morality; and the relationship between law and politics. Drawing on seminal legal theorists, the seminar will explore the evolution, specificity, and function of law; and the sources, and limits, of legal obligation. This analysis will be situated in the context of contemporary states. With their diverse and often divided citizenries, these polities both demand, and problematise, the public/private distinction on which the liberal legal tradition relies.

After these foundational concepts have been elucidated and interrogated, the seminar will turn to more concrete matters. Students will appraise the effects of formal legal equality in deeply unequal societies. Throughout the seminar, we will examine law's impact in specific settings, enabling students to revisit their appraisals of law, and develop their capacities to examine,

evaluate, and critique; to think reflectively. We will examine the basic units of law, rules; and scrutinize different techniques of legal reasoning. These will be examined and evaluated as we explore specific topics, including legal person-hood, criminal law, contracts, tort, and civil liability.

The seminar will then develop a comparative analysis of key legal traditions: Civil Law, Common Law, Islamic Law, and International Law. This will allow students to contextualize, and survey, the history of the Egyptian Legal system, and examine the forces which shape it. In the final classes, students will exercise and demonstrate their critical, analytic, and reflective thinking skills, examining and evaluating selected topics in contemporary Egyptian Law.

When Offered
Spring or Fall (once a year).

LAW 4371 - Introduction to Public International Law (3 cr.)

Description
Introduces students to the practice and theoretical foundations of public international law, covering such topics as sources doctrine (customary international law, treaty law etc.), international personality, jurisdiction, state responsibility, self-determination and the use of force. This course may be counted towards the Dual Degree Option combining a BA in Political Science and an MA in International Human Rights Law.

Cross-listed
Same as POLS 4371 .
When Offered
Offered in fall and spring.

LAW 4375 - Introduction to Egyptian and Islamic Law (3 cr.)

Prerequisites
Consent of Instructor

Description

The Egyptian legal system will be considered according to its present structure and historical development, including institutions, processes, laws, and the courts. There will be special

emphasis on developments in constitutional law and the role played by the constitution in the political context of present day Egypt. The course also offers an introduction to Islamic jurisprudence in the classical doctrine, in the pre-modern Egyptian legal system and in contemporary Egypt. This course may be counted towards the Dual Degree Option combining a BA in Political Science and an MA in International Human Rights Law.

Cross-listed
Same as POLS 4375
When Offered
Offered once a year.

LAW 4378 - Introduction to International Human Rights Law (3 cr.)

Description
The course provides an overview of the major human rights treaties, customary norms, international institutions and mechanisms of enforcement while at the same time, encouraging a critical stance, which questions the role and effect of human rights in a world of distress and inequality. This course may be counted towards the Dual Degree Option combining a BA in Political Science and an MA in International Human Rights Law.

Cross-listed
Same as POLS 4378 .
When Offered
Offered once a year.

LAW 5109 - Legal Practice (3 cr.)

Prerequisites
Consent of the instructor.

Description
The course will offer faculty-guided internships (for four to six months) in a corporation, a law firm, an international organization, an NGO, or any other similar entity. Student performance will be assessed on the basis of a report written by the student, and regular meetings conducted between the course instructor, the student, and the student's supervisor.

LAW 5113 - Egyptian Legal History (3 cr.)

Description
This course explores Egypt's various waves of "legal reform" over the past two centuries, paying close attention to the fields of constitutional law and human rights, as well as family, commercial, and criminal law. We also examine the emergence of the modern Egyptian legal elite, its rise to political and intellectual prominence, its fall during the Nasser years, and its potential for public policy impact today. Egypt's modern legal history is set in a larger "law and development" policy frame, exploring ramifications on the rule of law, economic and political liberalization, and calls for a "return to shari'a" by Islamist political actors today. This course is offered at irregular intervals. Please contact the Department of Law for information about its availability.

LAW 5116 - Law and Economic Development (3 cr.)

Description
Exploration of the relationship between different strategies of economic development and legal reforms in the public and private spheres from a comparative law perspective.

When Offered
Offered in spring.

LAW 5117 - Law and Patriarchy (3 cr.)

Description
What does it mean to look at law from a feminist perspective? How can a critical reading of patriarchal society inform our legal analysis and our uses of the law? This course explores how structures of domination - capitalism, white supremacy, and patriarchy - have been historically codependent through systems of law and governance. It also explores how feminist movements have critically navigated around and against these structures of domination through law, and other means. Gender justice has been at the core of international human rights law and practice in the Global South. This course makes explicit broader theoretical questions about the relationship between law and patriarchy through classic texts on feminism, transfeminism, queer theory, critical race feminism, and masculinity studies, among other approaches. It engages with various themes that initially developed from outside of the academy, such as

intersectionality, and capitalism's reliance on unpaid housework, cohering feminist movements as spaces of knowledge-production, and for the articulation of feminist methodology. The course therefore focuses on how feminist methodology can reveal the distributional effects of legal outcomes, break gender binaries, and complicate North-South dichotomies.

When Offered
Offered in fall.

LAW 5120 - Special Topics in Public Law (up to 3 cr.)

Prerequisites
Permission of the Department.

Prerequisites can be waived by special permission of the Law Department.

Description
The course allows resident or visiting faculty to give seminars on special topics of public law as regular 3 credit courses, or as shorter courses that visiting academics may give, with varying credit values depending on the number of hours covered.

Repeatable
May be taken more than once for credit if content changes.

LAW 5124 - Comparative Constitutional Law and Human Rights (3 cr.)

Description
How constitutional rights, concepts and practices have merged and developed within contemporary governments.Emphasis will be on the analysis of civil, political, economic, social and cultural rights together with freedoms and liberties protected by various constitutions, considered within their social and political contexts. This course is offered at irregular intervals. Please contact the Department of Law for information about its availability.

LAW 5130 - Special Topics in International Law (up to 3 cr.)

Description
The course allows resident or visiting faculty to give seminars on special topics of public and private international law as regular 3 credit courses. It may also be used to accommodate short

courses that visiting academics may give, with varying credit values depending on the number of hours covered.

Repeatable
May be taken more than once for credit if content changes.

LAW 5135 - International Dispute Settlement (3 cr.)

Prerequisites
LAW 5232 and LAW 5273

(Prerequisites can be waived by special permission of the Law Department).

Description
The course combines the fundamentals of the law governing the settlement of international disputes between states and a Moot Court exercise. The two components of the course are intertwined. The course thus aspires to combine theoretical and practical dimensions of the experience of international dispute settlement. The doctrinal part of the course includes a general overview of the methods for dispute settlement in public international law, and basic procedural norms and principles governing international legal proceedings. The course looks in detail at specific institutions, such as the International Court of Justice, the Permanent Court of Arbitration, the Iran-United States Claims Tribunal, the International Tribunal for the Law of the Sea, and others. Students will have the opportunity to study recent developments in the theory, practice and in policy debates underlying the system of international dispute settlement.

When Offered
Offered in fall.

LAW 5136 - International Economic and Trade Law (3 cr.)

Description
Rules of law and policy of economic relations under the GATT/WTO system, as well as regional agreements on trade partnerships between the European Union and the Arab Mediterranean. This course is offered at irregular intervals. Please contact the Department of Law for information about its availability.

LAW 5137 - International Commercial Arbitration (3 cr.)

Prerequisites
LAW 5230 or LAW 5232

(Prerequisites can be waived by special permission of the Law department).

Description
The law of international commercial arbitration considered from a comparative perspective in major Civil and Common Law jurisdictions, as well as its practice in the context of international transactions. This course is offered at irregular intervals. Please contact the Department of Law for information about its availability.

LAW 5148 - Comparative Corporate Governance (3 cr.)

Prerequisites
LAW 5230

Description
Comparison of how select questions of corporate governance, control, and finance are regulated under American, French, German, and Egyptian corporate law.
This course is offered at irregular intervals. Please contact the Department of Law for information about its availability.

LAW 5158 - International Criminal Law (3 cr.)

Prerequisites
LAW 5232, LAW 5273

Description
The course will cover the central doctrines, procedures and institutions of International Criminal Law with emphasis on contemporary debates. It will consist in an overview of the main doctrines that "frame" international criminal law and set the conditions for its existence as a distinct field of legal practice, as well as substantive international crimes (Elements of crimes, War crimes, Crimes against humanity, Genocide, Aggression and Crimes against peace) and international criminal courts and tribunals.

When Offered
Offered in spring.

LAW 5161 - Islamic Law Reform (3 cr.)

Prerequisites
LAW 5230 or LAW 5232

Description
Exploration of different approaches to reforming Islamic law in the Arab World from the mid-nineteenth century to the present, paying special attention to contemporary developments in Arab legal systems.

When Offered
Offered in spring.

LAW 5180 - Special Topics in Comparative Law (up to 3 cr.)

Prerequisites
Permission of the Department. Prerequisites can be waived by special permission of the Law Department.

Description
The course allows resident or visiting faculty to give seminars on special topics of comparative law as regular 3 credit courses, or as shorter courses that visiting academics may give, with varying credit values depending on the number of hours covered.

Repeatable
May be taken more than once for credit if content changes.

LAW 5182 - Securities Regulation Law (3 cr.)

Prerequisites
LAW 5230

Description
Legal and institutional framework for the offering, purchase and sale of investment securities under US, EU and Egyptian law, with special attention to national and transnational aspects of securities fraud.

When Offered
This course is offered at irregular intervals. Please contact the Department of Law for information about its availability.

LAW 5183 - Antitrust Law (3 cr.)

Prerequisites
LAW 5230 (Prerequisites can be waived by special permission of the Law department).

Description
Basic principles of antitrust regulation in the US from the Sherman Act to the present, compared with recent developments in EU law, and with the Egyptian Competition Law.

When Offered
This course is offered at irregular intervals. Please contact the Department of Law for information about its availability.

LAW 5200 - Graduate Legal Research and Writing (3 cr.)

Description

A workshop designed to develop graduate-level lawyering skills in research, drafting, legal argument, and oral presentation, especially with respect to practice in transnational legal problems and settings.

LAW 5228 - Migration in International Law (3 cr.)

Prerequisites
LAW 5232 and LAW 5273

Description
The Arab region experiences mass voluntary and involuntary population movements, driven by

various factors including economic reasons, conflict and insecurity, and increasing resource scarcity and environmental change. These movements pose a challenge to regional stability and security unless there are appropriate and integrated national, regional and international responses. A course on Migration in International Law allows students to engage with issues of growing regional and international importance. While the Center for Migration and Refugee Studies offers courses in International Refugee Law and Comparative Migration Law, there is presently no course that introduces the complex and growing area of international law dealing with migration.

Cross-listed
Same as MRS 5228.

LAW 5229 - Advanced Jurisprudence (3 cr.)

Prerequisites
LAW 5200

Description
The course will look at the major contemporary debates in legal theory. It introduces students to different schools of legal theory including Sociological Jurisprudence, Legal Realism, Legal Process, Critical Legal Studies, Liberal Legalism, Critical Race Theory, Feminist Legal Theory and Law and Economics. The course aims at introducing students to different and innovative legal methodologies.

When Offered
Offered in spring.

LAW 5230 - Comparative Law (3 cr.)

Description
Introduction to the main differences between Civil Law and Common Law systems with respect to selected problems regulated under public and private law regimes. The comparative study will concentrate on the American, German, and French legal systems.

When Offered
Offered in fall.

LAW 5232 - International Law (3 cr.)

Description
An in-depth overview of the international legal system.The course will cover the fundamental concepts, institutions, processes and mechanisms of international law.Some of the topics that will be covered include: the relationships between public and private international law, the question of sovereignty, the sources of international law, and the place of non-State actors.

When Offered
Offered in fall.

LAW 5286 - Independent Study (3 cr.)

Prerequisites
Consent of the instructor and approval of the Degree Program Director.

Description
Guided individual reading and/or research on a subject of mutual interest to the student and the faculty member.

LAW 5298 - Graduate Law Seminar (3 cr.)

Prerequisites
Permission of the Department. Prerequisites can be waived by special permission of the Law Department.

Description
Reading, discussion and intensive writing about theory and methodology in law, political theory, and relevant social sciences. This course is a pre-requisite to the Thesis requirement for all students in the LL.M. in International and Comparative Law, and MA in International Human Rights Law. The course targets students who have completed at least nine credits hours toward the degree.

LAW 5299 - Research Guidance/Thesis (no cr., pass/fail)

Prerequisites
LAW 5298

Description
To register for the thesis, students normally are expected to have finished all or almost all coursework. Students are expected to be in residence during thesis supervision. Residency requirement can be waived by permission of the thesis supervisor in accordance with Department's policies.

Management

MGMT 3201 - Management Fundamentals (3 cr.)

Description
Aims at acquainting the student with the basic management functions and processes with a focus on planning, organizing, leading and controlling. Stresses how communication, motivation, and teamwork affect the organization, how organizations are managed, and how managers apply their skills and knowledge to meet the organizational objectives. Emphasis on the environmental constraints imposed on the Egyptian manager and applying principles of management in Egyptian enterprises.

When Offered
Offered in fall and spring.
Notes

Enrollment in this course is limited, and priority is given to students from within the major, students enrolling in this course to complete a collateral requirement in another major, and students who have declared business administration as a minor.

MGMT 3301 - Business Law (Commercial & Fiscal) (3 cr.)

Prerequisites
BADM 2001 - Introduction to Business (3 cr.) or MGMT 3201 - Management Fundamentals (3 cr.)

Description

The nature, formation, and application of the law. Topics include: law and the Egyptian business environment, contracts, agency, forms of business organization, fiscal policy, taxation, commercial transaction, and governmental regulation of business.

When Offered
Offered in fall and spring.
Notes

Enrollment in this course is limited, and priority is given to students from within the major, students enrolling in this course to complete a collateral requirement in another major, and students who have declared business administration as a minor.

MGMT 4202 - Managing the Human Capital (3 cr.)

Prerequisites
MGMT 3201 or BADM 2001

Description
This course focuses on dynamics of personality, group dynamics, team building, organization culture, motivation, leadership, and communication, what is the human capital, strategic human resource management, HR planning, job analysis, recruitment, selection, training, development, performance management and compensation.

When Offered
Offered Fall and Spring.
Notes

Enrollment in this course is limited, and priority is given to students from within the major, students enrolling in this course to complete a collateral requirement in another major, and students who have declared business administration as a minor.

MGMT 4203 - Organizational Behavior (3 cr.)

Prerequisites
BADM 2001

Description

This course provides students with the tools needed to help understand the psychology of the workplace and influence the actions of individuals and groups in an organizational setting to help each employee reach their full potential. Students will learn how to manage people, information, AI, and processes to accomplish organizational goals under conditions or timeframes that are not of their choosing. In this course, an increased focus is on the diagnosis and problem-solving skills related to the major challenges faced in managing people in contemporary organizations. Topics that shall be covered include motivational system design, team building and teamwork, conflict management, political dynamics, and corporate culture.

MGMT 4402 - Business Consultancy (3 cr.)

Prerequisites
Junior standing & BADM 2001

Description
This course aims to equip Business, Accounting and Economics students with the necessary tools to work in the business consulting field. The approach is practical, involving a series of case solving assignments and projects. Additionally, students will be trained on how to communicate their solutions effectively. The key objectives of the course are:

- Learn up-to-date problem solving techniques
- Understand how to use key business fundamentals effectively
- Be able to communicate business consultancy solutions professionally
- Write and publish high-quality case studies
- Learn how to crack cases in a case interview

MGMT 4970 - Special Topics in Management (3 cr.)

Prerequisites
Consent of Instructor.

Description
Considers selected topics of current relevance in management.

When Offered

Offered occasionally.

Notes

Enrollment in this course is limited, and priority is given to students from within the major, students enrolling in this course to complete a collateral requirement in another major, and students who have declared business administration as a minor.

MGMT 4975 - Independent Study in Management (1-3 cr.)

Prerequisites

Senior standing and consent of MGMT unit head and chair.

Description

Guided readings, research, and discussions on specific selected topic in Management.

When Offered

Offered occasionally.

Notes

Enrollment in this course is limited, and priority is given to students from within the major, students enrolling in this course to complete a collateral requirement in another major, and students who have declared business administration as a minor.

MGMT 5202 - Managing Organizations in a Dynamic Environment (3 cr.)

Description

The course aims at acquainting the student with how a leader could manage an organization in a dynamic environment. The course focuses on the main functions of a manager such as planning, organizing, controlling, motivation, team building and with special emphasis on leadership. It emphasizes contemporary and applied management in a global and dynamic environment. It also aims at developing an understanding of the tasks that managers must perform to keep the organization running both effectively and efficiently. In addition, the course emphasizes the environmental constraints imposed on the Egyptian manager and attempts to explore ways of applying the principles of management in Egyptian enterprises.

When Offered

Offered in fall and spring.

MGMT 5302 - Managing Organizations and the Human Capital (3 cr.)

Description
The course provides the student with how to effectively and efficiently lead an organization in a dynamic environment. The course focuses on two main areas: the basic functions of a manager and managing the human capital. The basic function of a manager include: planning, organizing, controlling with special emphasis on leading, team building, organizational culture and managing change. Managing the human capital focuses on how to attract, develop and retain talented employees. It also presents the importance of positive psychological capital. The course includes a critical analysis of how the concepts in the literature can be applied in the Egyptian context.

MGMT 5303 - Organizational Design (3 cr.)

Prerequisites
MGMT 5202 or equivalent.

Description
The course covers topics like strategy and structure, vertical and horizontal integration, structural options, process of organizational design, the concept of fit, designing jobs and organizational units and control elements in the design of organizations.

When Offered
Offered occasionally.

MGMT 5304 - Management of International Business Organizations (3 cr.)

Prerequisites
BADM 5310

Description
In this course, attention is given to principles, practices, and problems of managing international business activities, entry decision, supply strategy, ownership and control, labor and legal issues, and the financial and management implications of conducting business in foreign countries. The course covers topics such as world politics and how they come to bear on international business decisions, cultural differences and communication, trade regimes and institutions and global

technological trends and diffusion.

When Offered
Offered occasionally.

MGMT 5306 - Leadership (3 cr.)

Prerequisites
BADM 5310

Description
This course reviews the procedures, styles and methods of leadership in both theory and practice. Students will review the personal, relationship and organizational side of leadership as well as the leader as a social architect. At the completion of this course students will develop and acquire the necessary skills to become effective leaders through examples of real world leadership.

When Offered
Offered occasionally.

MGMT 5307 - Entrepreneurship and Innovation (3 cr.)

Description

Innovation lies at the heart of economic growth in the modern world. Entrepreneurs with the ability and resourcefulness to establish their own business are critical to the process of innovation. Innovation is not just about starting a new business but it is also about creating and developing Innovative ways of management. Whether you are thinking of starting a new venture or developing innovative mechanisms of management in a large organization, you will need to understand Entrepreneurship and Innovation.
This course takes students through the various aspects of starting, managing, and growing a business. Whether you want to start a new venture, a new project, or develop an innovative way of management. You will need to write a business plan? This course will teach you how to write a business plan, its benefits and how does it differ from a feasibility study.

Opportunity identification, clear business and market definition, segmentation, and entry, building a team and creating a suitable organizational form, avoiding common pitfalls, and various strategies for starting or growing a business , are among the numerous facets of entrepreneurship covered in the course.

Methods employed include individual and group case analysis, writing a business plan, interviews with, and talks by, entrepreneurs, and profiling of successes and failures.

When Offered
Offered in fall and spring.

MGMT 5308 - Strategic Management of Innovation (3 cr.)

Prerequisites
BADM 5310

Description

Innovation is regarded as a critical source of competitive advantage in an increasingly changing environment. Innovation is production or adoption, assimilation, and exploitation of a value-added novelty in economic and social spheres; renewal and enlargement of products, services, and markets; development of new methods of production; and establishment of new management systems. This course will study the theory and practice of innovation as a process and an outcome based on a comprehensive model of innovation which consists of three determinants: innovation leadership, managerial levers and business processes. The course will examine the impact of accelerating innovation on cost, product quality and marketability; organizational changes required to couple R&D with marketing and commercialization; and the managerial skills and professional expertise needed to develop a sustainable innovation practice within an organization.

MGMT 5309 - Technology and Innovation Management (3 cr.)

Prerequisites
Core requirements met and consent of instructor.

Description

This is a case based course drawing on best practices in industry and the most up to date and important general management technology and innovation management academic material. Students should be prepared to discuss major technology issues covered in the readings each class. This course is designed to develop strong technology management skills to help managers make good decisions in regard to technology strategy and implementation of technology within their firms. This course is designed to develop general managers with strong abilities to lead in various technological environments and manage the innovation process and projects across and within their own function effectively.

MGMT 5370 - Contemporary Topics in Management (3 cr.)

Description
It considers selected topics of current relevance in Management.

When Offered
Offered occasionally.

MGMT 5375 - Independent Study in Management (1-3 cr.)

Prerequisites
Consent of MGMT unit head and chair.

Description
Guided readings, research, and discussions on specific selected topic in Management.

When Offered
Offered occasionally.

Management of Information Systems

MOIS 2101 - Introduction to Information Systems/Technology (3 cr.)

Description
This course is an introduction to information systems/technology and its applications for business students. The course explores the computer base applications in the major functional areas of business including accounting, finance, marketing, production, and personnel. It aims

at the development of computer end-users and systems managers through a comprehensive coverage of business processes, systems concepts, systems types, applications software, database concepts, electronic commerce and competitive advantage.

When Offered
Offered in fall and spring.
Notes

Enrollment in this course is limited, and priority is given to students from within the major, students enrolling in this course to complete a collateral requirement in another major, and students who have declared business administration as a minor.

MOIS 3201 - Management Information Systems and Database Management (3 cr.)

Prerequisites
MOIS 2101

Description
The course aims at defining a framework of management information systems with emphasis on the organization. It relates to a number of important organizational aspects such as the human and technological infrastructure and the needs and requirements of an organizational information system. The course also covers the relational database model, with special emphasis on the design and querying of relational databases and exploration of the relationship of database to the rest of the system.

When Offered
Offered in fall and spring.
Notes

Enrollment in this course is limited, and priority is given to students from within the major, students enrolling in this course to complete a collateral requirement in another major, and students who have declared business administration as a minor.

MOIS 3301 - Entrepreneurial IT and Digital Transformation in E-Business (3 cr.)

Prerequisites
MOIS 2101

Description
This course introduces the basics of modern business in a networked environment which is changing the landscape of business operation. Students will explore the foundations of digital transformation and the nature of the competitive life cycle. The course focuses on the important electronic business issues with a broad understanding of the concepts, technologies, tools, techniques and strategies associated with electronic business, students learn how to exploit the business development potentials of the new information based society and how to develop simple IT solutions to some of the most significant business problems. Students will explore emerging trends and technologies, what is probable in the future, and what we are currently experiencing in practice. Hence, students get to exercise needs finding methods, brainstorming and concept creation, understanding and interpreting IT business needs, analysis and feasibility, basic software prototyping and market assessment.

When Offered
Occassionally
Notes
Enrollment in this course is limited and priority is given to students seeking the Bachelor of Business Administration in Management of Information and Communication Technology (MICT) degree, Bachelor of Business Administration degrees (BBE, BBF, BBM), the Bachelor of Accounting degree, students enrolled in specified collateral requirements in other majors, students who have declared Information Systems (IS) minor, or business administration as a minor.

MOIS 3401 - Human Machine Interaction and Internet of Things (IoT) (3 cr.)

Prerequisites
MOIS 2101

Description
This course provides a business-oriented approach to Human to Machine Interaction (HMI), and Internet of Things (IoT). It merges theories and concepts with methods of design, evaluation, and implementation of any interactive business system within the IoT environment. IoT allows humans to innovate new designs; thus, influencing transportation, health care, safety, environment, energy, to name just a few. HMI combines educational and cognitive psychology, business administration, as well as ergonomics and computer science in designing the business system that can greatly increase productivity, help in decision making and gain marketing advantages. Students do not only study the theory and principles of HMI design, but also design

an interactive system that enables the users to do tasks quickly and work in an environment of interacting smart devices. This course will also discuss IoT technology focusing on the importance of IoT in society, typical devices and IoT future trends. Smart device interactions, voice interaction, contactless interaction, emotional intelligence, IoT design considerations, constraints and interface will also be covered.

When Offered

Offered Occasionally.

Notes

Enrollment in this course is limited and priority is given to students seeking the Bachelor of Business Administration in Management of Information and Communication Technology (MICT) degree, Bachelor of Business Administration degrees (BBE, BBF, BBM), the Bachelor of Accounting degree, students enrolled in specified collateral requirements in other majors, students who have declared Information Systems (IS) minor, or business administration as a minor.

MOIS 3501 - Geographic Information Systems (GIS) (3 cr.)

Prerequisites

MOIS 2101

Description

This course provides an introduction to the use of the geographic information systems (GIS) and its applications for business decision support. It builds working knowledge and skills in applying and managing GIS by focusing on business and people related issues. Students learn to set up geo-referenced databases, to design maps, to analyze data, to extract information. This course exposes students to the functional areas in the technology management stream and gives them a practical hands-on experience for business applications. By the end of the class students will have mastered sufficient introductory concepts and practical skills to use GIS for business decision making improvement.

MOIS 3601 - Intelligent Decision Support Systems (3 cr.)

Prerequisites

MOIS 2101

Description

The course establishes a foundation for understanding analyzing and designing an Intelligent Decision Support Systems (IDSS). It also provides an overview of technical and organizational aspects of decision support systems (DSS), including individual, group and organizational DSS as well as executive information systems (EIS). It examines the integration of Experts Systems (ES) with Statistical models, the use of MS SQL data mining/warehousing, and the implementation of Information Technology (IT) based systems that support managerial and professional work, including Communications-Driven and Group Decision Support Systems (GDSS), Data-Driven DSS, Model-Driven DSS and Knowledge-Driven DSS.

When Offered
Offered in fall
Notes
Enrollment is limited, and priority is given to students seeking the Bachelor of Business Administration in Management of Information and Communication Technology (MICT) degree, Bachelor of Business Administration degrees (BBE, BBF, BBM), the Bachelor of Accounting degree, students enrolled in specified collateral requirements in other majors, students who have declared Information Systems (IS) minor, or business administration as a minor.

MOIS 3801 - Strategic Management of Information Technology (3 cr.)

Prerequisites
MOIS 2101

Description
This course aims to provide students with an understanding of the key concepts, practices and the role and implications of strategic management of Information Technology. It is about the strategic role of IT-enabled innovation and trends integrated with the business processes that bring about competitive advantage. Students will explore the use of ERP Systems, Business Process Management, and Business Process Re-engineering in an organization. The course focuses on the strategic impacts different information technologies can have on productivity, performance, competitiveness, and organizational growth.

When Offered
Offered occasionally.
Notes

Enrollment is limited, and priority is given to students seeking: the Bachelor of Business Administration in Management of Information and Communication Technology (MICT) degree, or

Bachelor of Business Administration degrees (BBE, BBF, BBM), or the Bachelor of Accounting degree, or students enrolled in specified collateral requirements in other majors, or students who have declared Information Systems (IS) minor, or business administration as a minor.

MOIS 4202 - Business Information Systems Analysis and Development (3 cr.)

Prerequisites
MOIS 3201

Description
The Course emphasizes various elements related to business information systems analysis and development in the new digital economy. Doing business is not as usual as before with the use of innovative information and communication technology tools and techniques and this course intends to introduce students to the opportunities enabled by various business information systems within the information economy.

When Offered
Offered in spring.
Notes

Enrollment in this course is limited, and priority is given to students from within the major, students enrolling in this course to complete a collateral requirement in another major, and students who have declared business administration as a minor.

MOIS 4701 - Software Quality Management (3 cr.)

Prerequisites
MOIS 4202

Description
This course will be dealing with Software Quality Assurance and Software Quality Control. The first part of the course will be discussing Software Quality Assurance. Main topics of this part include: the basics of software quality management and how it relates to every phase in the SDLC, quality of requirements, the importance of reviews and their main types (manual and automated). Other aspects of quality assurance will be discussed such as Data Quality problems and solutions, Configuration Management (change control process, version control and baselines), Quality Frameworks and Quality Standards such as CMMI and ISO.

The second part of the course will be discussing Software Quality Control. Important topics in Software Testing will include Testing Principles, Main Components of Testing, Testing Objectives, Testing Strategy, the Testing Process, Test Levels, Test Classification, Testing Types (functional, and non-functional), Automated Testing (for projects adopting the Agile Life-cycle Model). Other topics such as the Test Data, Defect Management, Testing Metrics and Test Reporting will be covered.

MOIS 4702 - IT Service Management Course (ITSM) (3 cr.)

Prerequisites
MOIS 3201

Description

The IT Service Management (ITSM) course centers on the managerial standards of the quality of IT services provided to end users across any organization by examining the interrelations between people, processes, and technology. It empowers students with the required IT skills to improve service responsiveness and problem-solving to create value and support an organization's business strategy. The multifaceted nature of ITSM offers rich content that addresses relevant topics from quality management, software engineering, change management, information security management, and management framework standards. A focal component of the course is to introduce the best practices in ITSM and its different ITSM frameworks (e.g., ITIL, COBIT, Lean, Six Sigma) to deliver and control IS services that encompass all ITSM's aspects: service requests, incidents, problems, changes, and post-incident reviews. The course's main objective is to expose the students to the concept of ITSM; and to enable them to analyze the technical services required within each organization's context that meet users' needs, leading to the selection of the approach, process of implementation, and the metrics that would successfully optimize operational performance, and maximize IT investments.

MOIS 4703 - Enterprise Information Systems (3 cr.)

Prerequisites
MOIS 3201

Description

Enterprise resource planning (ERP) is an application suite developed to manage and optimize business operations and processes. The course provides an overview of Enterprise Resource

Planning (ERP) systems and their role within an organization. It introduces key concepts of integrated information systems and explains why such systems are valuable to businesses. The course will also provide a discussion on various business cases in which ERP concepts can be applied.

MOIS 4704 - AI in Business (3 cr.)

Prerequisites
MOIS 3201 , MACT 2222, and CSCE 1101

Description

Students will understand the fundamental concepts and technologies underlying big data and apply big data tools and techniques to real-world problems. The course combines lectures, discussions, hands-on exercises, and guest lectures from industry experts. This course covers essential techniques such as data mining and statistical analysis while fostering a critical approach by exploring the ethical considerations surrounding AI in business. The students will be equipped with the skills needed to manage and analyze vast datasets, empowering them to make data-driven decisions across various industries. They will gain proficiency in a range of industry-standard data analysis tools and platforms. Through collaborative, real-world projects, students will develop robust analytical skills and gain valuable insights into emerging AI trends. Students will acquire the expertise to become data analysis professionals, enabling them to contribute strategically to organizational decision-making in the dynamic world of AI.

When Offered
Offered occasionally.
Notes

Enrollment is limited, and priority is given to students seeking: the Bachelor of Business Administration in Management of Information and Communication Technology (MICT) degree, or Bachelor of Business Administration degrees (BBE, BBF, BBM), or the Bachelor of Accounting degree, or students enrolled in specified collateral requirements in other majors, or students who have declared Information Systems (IS) minor, or business administration as a minor.

MOIS 4705 - IT Project Management (3 cr.)

Prerequisites
MOIS 4202 or CSCE 3701

Description

IT Projects face significant challenges associated with many risks. This course handles project management from an IT perspective where students learn the fundamentals and best practices of project management methodology as applied to IT initiatives. Using the framework of project life cycle, the course covers various aspects pertaining to (i) project initiation, (ii) project planning (iii) project execution/tracking; and (iv) project closure. It handles all this within the Software standards and Audits such as Capability Maturity Model Integration (CMMI), it measures performance using Earned Value Management (EVM) analysis, and builds upon proposal writing skills and how to respond to Request for Proposals (RFPs).

MOIS 4970 - Special Topics in Management of Information Systems (3 cr.)

Prerequisites

Prerequisite: Consent of Instructor.

Description

Considers selected topics of current relevance in management of information systems.

When Offered

Offered occasionally.

Notes

Enrollment in this course is limited, and priority is given to students from within the major, students enrolling in this course to complete a collateral requirement in another major, and students who have declared business administration as a minor.

MOIS 4975 - Independent Study in Management of Information Systems (1-3 cr.)

Prerequisites

Senior standing and consent of MOIS unit head and chair.

Description

Guided readings, research, and discussions on specific selected topic in Management of Information Systems.

When Offered

Offered occasionally.

Notes

Enrollment in this course is limited, and priority is given to students from within the major, students enrolling in this course to complete a collateral requirement in another major, and students who have declared business administration as a minor.

MOIS 4999 - Internship and Graduation Project (3 cr.)

Prerequisites

MOIS 4202, MOIS 3301, MOIS 4704 and CSCE 3701

Description

The course offers the students the opportunity to participate in real-life work experience in the IS/IT field. Students in collaboration with the MOIS unit will be responsible for their own placement in an internship approved by the advisor. The internship report details everything the student did during the internship. Additionally each student will be able to analyze the business processes' current performance, identify problems, and suggest solutions by applying foundations of information technologies and to be able employ appropriate methodologies to achieve the designed improvements. Students should submit a plan followed by progress reports and finally deliver the thesis project document and presentation of the findings.

When Offered

Offered in fall and spring.

Notes

Enrollment is limited, and priority is given to students seeking the Bachelor of Business Administration in Management of Information and Communication Technology (MICT) degree, Bachelor of Business Administration degrees (BBE, BBF, BBM), the Bachelor of Accounting degree, students enrolled in specified collateral requirements in other majors, students who have declared Information Systems (IS) minor, or business administration as a minor.

MOIS 5201 - Information and Communication Technology in Business (3 cr.)

Description

Today's electronic means, computing, networks and software applications have become an

integral part of business. The premise of the course is that adequate knowledge of technology is now a prerequisite for a successful business owner or manager. This course is intended to provide a basic technical literacy, with an emphasis on implications for organizations. The technical component of the course includes data and voice communication networks, database structures as a significant tool for managing information, artificial intelligence, business intelligence, data modeling, data integration, data warehousing and data mining, as well as information support systems design, and computer security.

When Offered
Offered in fall and spring.

MOIS 5202 - Data Sciences in Business (1.5 cr.)

Prerequisites
Co-requisite: MOIS 5211

Description
Digital transformation has been affecting both existing organizations as well as new. This course introduces the fundamental principles of data science and covers what managers need to know about data mining and data-analytic thinking necessary for extracting useful knowledge and business value from the data they collect. Topics include: Understanding how data science fits in your organization-and how you can use it for competitive advantage, treating data as a business asset that requires careful investment if you're to gain real value, approaching business problems data-analytically, using the data-mining process to gather good data in the most appropriate way, learning general concepts for actually extracting knowledge from data, and applying data science principles when interviewing data science job candidates.

MOIS 5211 - Information Technologies and Systems (3 cr.)

Description

The objective of the course is to improve understanding of how information technologies can enable the digital transformation within both existing organizations as well as new businesses. This course explains the core business processes which need to be managed efficiently within the organization and show how they collect data and create information and knowledge. The course then explains the anatomy of systems which are implemented at the enterprises, both in-cloud & in-premise, in order to be able to manage business processes and the data imported from the

external environment on which the business operates. Amongst the topics that will be covered during the course are: the types of decisions e.g., structured, semi-structured, and unstructured; enterprise systems e.g., ERP, SCM, CRM; data management technologies e.g., databases, data warehousing, SQL/noSQL; and decision support technologies e.g., DSS.

MOIS 5301 - Systems Analysis, Design, and Implementation (3 cr.)

Prerequisites
BADM 5310

Description
The objective of the course is to improve understanding of how information technologies can help in the transformation of business models within existing organizations as well as the development of completely new business models and new organizational practices. Hence, the purpose of the course is twofold. The course is first and foremost an intensive, integrative, project course in which student teams create one or more real business models. Second, the course provides students with the experience of Working with different tools and techniques in systems analysis and design. The students study the systems development life-cycle emphasizing current techniques for documenting users' requirements and producing maintainable, cost effective systems. The project experience helps the team members learn key tools and fundamentals useful in modeling, problem solving, and design.

When Offered
Offered in fall and spring.

MOIS 5302 - Decision Support Systems (3 cr.)

Prerequisites
BADM 5310

Description
The primary goal of this course is to allow the student to comprehend and explore the significant issues in automating business decision support at various levels. The amount of data collected by businesses has not only grown exponentially in the last few years but has also witnessed a major expansion in enabling technologies such as database systems, data-mining techniques, client-server and cloud computing as well as artificial intelligence. The course covers the above topics and overviews Some of the most Widely used decision support techniques

(such as decision trees, genetic algorithms and neural networks), cloud computing and business intelligence techniques as well as decision support applications (such as in management, trade, marketing strategies and customer support) via simulated decision cases and real datasets.

When Offered
Offered occasionally.

MOIS 5303 - Electronic Business: Doing Business in the Digital Economy (3 cr.)

Prerequisites
BADM 5310

Description
This course considers how we can take advantage of new technology opportunities and how they change the structure of firms, industries and value chains, with an emphasis on business issues. It focuses on new market trends in e-Business and the entrepreneurial virtual businesses that are more on the Web. It deals with Electronic Markets and Market structures and the strategic uses of information within the firm it covers several essential topics in information strategy such as IT and market structure, the impact of IT on knowledge-intensive products and services. Students may compete in simulated electronic markets, using different market mechanisms and formulate information-based strategies.

When Offered
Offered occasionally.

MOIS 5304 - Integrated Technologies and Big Data (3 cr.)

Prerequisites
OPMG 5201 and MOIS 3201 (or equivalent)

Description
In this course, we will look at the phenomenon of big data from multiple perspectives: practical, theoretical, statistical, etc. Possible solutions to the problem of big data involve compression, mining, cleaning, database design, visualization, interface design, security, etc. Specifically, this course examines information management in the context of massive sets of data, provides

students proficiency with a variety of data analysis tools, and exposes learners to varied data platforms as well as skills and concepts related to data mining and statistical analysis within a business context. Typically, the data mining process is not complete until the results that are produced are predictive to allow for adequate insight into the business. Topics may include: uses of data mining, data mining algorithms, Market Basket Analysis, data cleaning, data visualization and predictive analysis tools and techniques. Students will work on application areas that create or use big data and will be expected to work on relevant projects and to give presentations (mainly focusing on the 5 key Big Data use cases: Big Data exploration, enhanced 360o view of the customer, security/intelligence, extension, operations analysis, and data warehouse augmentation
Team-teaching: The academic professor is responsible for all issues related to the delivery and administration of academic content and course work. The industry representative will assist the academic professor in the planning, delivery and assessment of the practical work which my represent up to 50% of the course load.

MOIS 5305 - Information Technology Strategy and Entrepreneurship (3 cr.)

Prerequisites
BADM 5310

Description
Information is an integral part in organizational success paralleling the importance of its technology component. This course focuses on the intersection of IT strategy and the entrepreneurial business. It considers how one can take advantage of new technology opportunities and how they change the structure of firms, industries and value chains, with an emphasis on business issues. Topics include user needs, appropriate technology design, rapid prototype design and testing, social technology entrepreneurship, business modeling, and project management. Case studies are an integral part of the course. Classes combine lecture and case study discussions and the workload should include a project Where students apply IT and business skills to design product or service prototypes, distribution systems or a business plan for entrepreneurial ventures that meet today's World challenges.

When Offered
Offered occasionally.

MOIS 5370 - Advanced Topics (Next Generation Technologies) (3 cr.)

Prerequisites
BADM 5310

Description
Conducting business in a networked economy invariably involves interplay with technology. The purpose of the course is to explore a number of next generation technologies, the business drivers of technology-related decisions in firms, and to stimulate thought on emerging applications for commerce (including disruptive technologies). The course provides an overview of various evolving technologies and culminates in discussion of potential business impact of these technologies in the near future.

When Offered
Offered occasionally.

MOIS 5375 - Independent Research in Management of Information Systems/Technology (1-3 cr.)

Prerequisites
Consent of MOIS unit head and Director of MBA Program.

Description
Using the theoretical and practical skills acquired, students will be asked to conduct an in-depth study of an organization from an IT/IS perspective. Students should be using different resources available including material discussed in different courses, case studies, and textbooks but more importantly investigating different issues addressed with public and/or private sector organizations. A supervisor will be assigned to each student to guide him/her throughout the research process.

When Offered
Offered occasionally.

Marketing

MKTG 2101 - Principles of Marketing (3 cr.)

Description
The nature and scope of marketing. Marketing systems and the marketing environment, definition of a market, market segmentation, and buyer behavior. The marketing mix: product, place, price, and promotion. Marketing research and marketing information systems. The application of these topics to the Egyptian environment constitutes an important part of the study. Some of the class discussions and projects will incorporate entrepreneurial issues in Marketing.

When Offered
Offered in fall and spring.
Notes

Enrollment in this course is limited, and priority is given to students from within the major, students enrolling in this course to complete a collateral requirement in another major, and students who have declared business administration as a minor.

MKTG 3201 - Marketing Research (3 cr.)

Prerequisites
MKTG 2101 and MACT 3224 or MACT 2222 or MACT 3223 or MACT 3224 or PSYC 2000 or SOC 3103

Description

The nature and scope of marketing research. The scientific method and its application in the field of marketing, research design, basic methods of collecting data, marketing research procedures, applications of marketing research.

When Offered
Offered in fall and spring.
Notes

Enrollment in this course is limited, and priority is given to students from within the major, students enrolling in this course to complete a collateral requirement in another major, and students who have declared business administration as a minor.

MKTG 3202 - Consumer-Buyer Behaviour (3 cr.)

Prerequisites
MKTG 2101

Description
Buyer behavior relevant to marketing decisions. Theoretical and practical implications of individual behavioral variables such as motivation, learning, perception, personality and attitudes, and group influences. Buyer behavior analyzed in terms of decision-making processes and models of individual and aggregate behavior. Special attention given to consumer behavior in the Middle East.

When Offered
Offered in fall and spring.
Notes

Enrollment in this course is limited, and priority is given to students from within the major, students enrolling in this course to complete a collateral requirement in another major, and students who have declared business administration as a minor.

MKTG 3203 - Social Media Marketing (3 cr.)

Prerequisites
MKTG 2101

Description

Social media marketing is a rapidly growing field, and there are many different ways to approach it. However, there are some key concepts that are essential for any social media marketer to understand. One of the most important things to understand is the different types of social media platforms and how they can be used to reach different audiences. For example, Facebook is a great platform for reaching a large audience, while Twitter is better for engaging with a smaller, more engaged audience. Another important concept to understand is the different types of content that can be used on social media. Some of the most popular types of content include blog posts, images, videos, and infographics. It's important to experiment with different types of content to see what works best for your audience. Finally, it's important to understand how to measure the success of your social media marketing efforts.

This can be done by tracking things like website traffic, engagement rates, and social media shares. By tracking your results, you can see what's working and what's not, and make

adjustments accordingly. This course provides a comprehensive understanding of social media marketing strategies and tactics. It explores how social media platforms can be leveraged to effectively engage with target audiences, build brand awareness, and drive business results. Students will develop analytical and practical skills necessary to design, implement, and measure successful social media marketing campaigns.

MKTG 3301 - Marketing Communications Management (3 cr.)

Prerequisites
MKTG 2101, MKTG 3201 or MKTG 3202

Description

An introduction to marketing communications, covering advertising, sales promotion, personal selling and public relations. The design, management and integration of an organization's marketing communications strategy.

When Offered
Offered fall and spring.
Notes

Enrollment in this course is limited, and priority is given to students from within the major, students enrolling in this course to complete a collateral requirement in another major, and students who have declared business administration as a minor.

MKTG 4034 - Strategic Brand Management (3 cr.)

Prerequisites
MKTG 2101

Description
In the Global World we are in today, the long term survival and sustainability is linked to how well Brands will perform. This means that Brands Building and Brand Management are crucial today. The savvy company must develop, manage, sustain, and eventually nourish a Distinctive Brand for its target customers.
This course will examine the different factors that lead to building equity to a brand. Also, the many factors that should be considered to develop, manage, sustain and nourish a given brand

will be reviewed and analyzed. Also, several parts of this course will shed the lights on measuring brand equity with special emphasis on real life case studies.

MKTG 4201 - Advanced Marketing insights and Analytics (3 cr.)

Prerequisites
MKTG 3201

Description

This course presents students with advanced analysis techniques and methodologies used in marketing research and analytics to provide deep, actionable insights for strategic marketing decision-making. Students will explore the most recent tools and approaches to gather, analyze, and interpret complex data, enabling them to understand consumer attitudes and behavior, market trends, and their corresponding impact on marketing strategies.

Key topics include advanced data collection methods, multivariate analysis, predictive analytics, and the integration of qualitative and quantitative research. The course also emphasizes the importance of data visualization and machine learning applications in marketing and sheds light on ethical considerations in marketing research.

Through a combination of theoretical knowledge and practical applications, students will learn to conduct robust data analysis and develop data-driven marketing strategies. Real-world case studies and hands-on projects will provide opportunities to apply these skills in various marketing contexts, from customer segmentation, moving to advanced designs of experiments and ending with predictive analytics. By the end of this course, students will have the expertise to leverage advanced marketing analytics to drive business growth and make informed strategic decisions.

When Offered
Offered occasionally.
Notes

Enrollment in this course is limited, and priority is given to students from within the major, students enrolling in this course to complete a collateral requirement in another major, and students who have declared business administration as a minor.

MKTG 4302 - Digital Marketing (3 cr.)

Prerequisites
MKTG 2101

Description

Principles, best practices, and hands-on applications of digital marketing. The course is designed to hone skills in digital marketing, including developing a comprehensive digital marketing plan and creating an interactive website.

When Offered
Offered occasionally.
Notes

Enrollment in this course is limited, and priority is given to students from within the major, students enrolling in this course to complete a collateral requirement in another major, and students who have declared business administration as a minor.

MKTG 4303 - Principles of Public Relations (3 cr.)

Prerequisites
MKTG 2101

Description
An overview of the public relations profession in the Middle East. Public-relations principles and techniques, current public relations problems, possible solutions.

When Offered
Offered occasionally.
Notes

Enrollment in this course is limited, and priority is given to students from within the major, students enrolling in this course to complete a collateral requirement in another major, and students who have declared business administration as a minor.

MKTG 4401 - Professional Selling (3 cr.)

Prerequisites

MKTG 2101

Description
Professional selling skills, analyzing advantages and challenges of a sales career, and most desired characteristics of successful sales people. The course explains the buying process, buying systems, and procedures and how the making of each customer type has an impact on the sales process. The course walks students through all the steps of the selling and post sale activities.

When Offered
Offered occasionally.
Notes

Enrollment in this course is limited, and priority is given to students from within the major, students enrolling in this course to complete a collateral requirement in another major, and students who have declared business administration as a minor.

MKTG 4501 - Services Marketing (3 cr.)

Prerequisites
MKTG 2101

Description
An elective marketing course for undergraduate students seeking greater understanding of devising and delivering services to world-class standards. The course deals with identifying service quality from the customer's perspective, designing effective service products, designing effective service delivery systems, and implementing service quality control features suitable to the Egyptian environment.

When Offered
Offered occasionally.
Notes

Enrollment in this course is limited, and priority is given to students from within the major, students enrolling in this course to complete a collateral requirement in another major, and students who have declared business administration as a minor.

MKTG 4601 - International Marketing (3 cr.)

Prerequisites
MKTG 2101

Description
The marketing problems and opportunities of the exporter, licenser, or manufacturer in a foreign country. Topics include factors in assessing world marketing opportunities and the international marketing mix.

When Offered
Offered occasionally.
Notes

Enrollment in this course is limited, and priority is given to students from within the major, students enrolling in this course to complete a collateral requirement in another major, and students who have declared business administration as a minor.

MKTG 4602 - Marketing Strategy (3 cr.)

Prerequisites
MKTG 3201, FINC 2101

Description

An integrative capstone course for students seeking a marketing specialization. Provides a transitional experience between the marketing concepts and techniques introduced in prior courses and the practice of marketing in real-world business situations. Students learn to integrate the various elements of marketing and the other functional areas of business and develop critical decision-making abilities in strategic marketing in the context of a rapidly changing marketplace.

When Offered
Offered in fall and spring.
Notes

Enrollment in this course is limited, and priority is given to students from within the major, students enrolling in this course to complete a collateral requirement in another major, and students who have declared business administration as a minor.

MKTG 4970 - Special topics in Marketing (3 cr.)

Prerequisites
MKTG 2101

Description
Considers selected topics of current relevance in marketing.

When Offered
Offered occasionally.
Notes

Enrollment in this course is limited, and priority is given to students from within the major, students enrolling in this course to complete a collateral requirement in another major, and students who have declared business administration as a minor.

MKTG 4975 - Independent Study in Marketing (1-3 cr.)

Prerequisites
Senior standing and consent of MKTG unit head and chair.

Description
Guided readings, research, and discussions on specific selected topic in Marketing.

When Offered
Offered occasionally.
Notes

Enrollment in this course is limited, and priority is given to students from within the major, students enrolling in this course to complete a collateral requirement in another major, and students who have declared business administration as a minor.

MKTG 5201 - Marketing Management (3 cr.)

Description
Highlights the role of marketing as a process for creating value and managing customer relationships. The course addresses the marketing challenge of designing and implementing the

best combination of marketing variables to carry out a firm's strategy in its target markets. Further, this course seeks to develop the student's skills in applying the analytic perspectives and concepts of marketing to such decisions as: segmentation, targeting, positioning, branding, pricing, distribution and promotion. The goal is to understand how the firm can benefit by creating and delivering value to its customers and stakeholders. The new role of marketing is emphasized including: stakeholder marketing, internal marketing, social marketing, customer relationship management and other recent trends in the market. This course takes an analytical approach to the study of marketing problems of for-profit and not-for-profit organizations.

When Offered
Offered in fall and spring.

MKTG 5301 - Marketing Research Methods (3 cr.)

Prerequisites
BADM 5310

Description
This course highlights the importance of using a variety of marketing research methods in making marketing decisions. This course is designed to offer an understanding of the market research process through coverage of the steps comprising the process from defining the research problem, to developing an approach, to formulating a research design, to data collection, analysis, and conclusions. The course takes on an applied orientation in covering the research process. The course examines the proper use of statistical applications, with an emphasis on the interpretation and use of results. The course describes the process of acquiring, classifying and interpreting primary and secondary marketing data needed for intelligent, profitable marketing decisions. It also covers recent developments in the systematic recording and use of internal and external data needed for marketing decisions.

When Offered
Offered occasionally.

MKTG 5304 - Global Marketing (3 cr.)

Prerequisites
BADM 5310

Description
This course covers the environmental, organizational, and financial aspects of international marketing. It also describes the special marketing research, pricing, channels of distribution, product policy, and communication issues which firms face doing business in international markets. Further, this course examines the cultural, behavioral and legal challenges of entering and doing business in foreign markets. Decisions must be made regarding international marketing objectives, strategies and policies, foreign market selection, adaptation of products, and distribution channels of communications to fit each foreign market.

When Offered
Offered occasionally.

MKTG 5305 - Integrated Marketing Communication (3 cr.)

Prerequisites
BADM 5310

Description
This course focuses on a fully integrated approach to the marketing communication of products and services and on the major marketing communication decisions made by brand/communication managers. These decisions include mass media advertising, public relations, sales promotion, direct response marketing, sponsorship and events, packaging, and personal selling. This course is designed to provide students with both a theoretical and applied understanding of how marketing communication messages are created to positively impact customer relationships and brands.

When Offered
Offered occasionally.

MKTG 5306 - Strategic Marketing (3 cr.)

Description
This course seeks to develop the student's skills in applying the analytic perspectives and concepts of marketing to such decisions as: segmentation, targeting, positioning, branding, pricing, distribution and promotion.The course addresses the relationship of marketing to environmental forces and other business functions. Principal topics include resource allocation, market entry/exit decisions, and competitive analysis. The course stresses on the analysis,

planning, and implementation issues marketing managers encounter when they develop market strategies in competitive environments. This is done by case analysis of marketing problems and examining current developments in marketing practice. Topics include a focused review of competitor analysis, buyer analysis, market segmentation, and assessing business competitive advantages. Product portfolio issues are identified and marketing strategies developed, assessed and implemented.

MKTG 5307 - Strategic Brand Management (3 cr.)

Prerequisites
BADM 5310

Description
In the Global World we are in today, the long term survival and sustainability is linked to how well brands will perform. This means that Brands Building and Brand Management are crucial today. The savvy company must develop, manage, sustain and eventually nourish a Distinctive Brand for its target customers.
This course will examine the different factors that lead to building equity to a Brand. Also, the many factors that should be considered to develop, manage, sustain, and nourish a given brand will be reviewed and analyzed. Also, several parts of this course will shed the lights on measuring brand equity with special emphasis on real life case studies.

MKTG 5370 - Advanced Topics in Marketing (3 cr.)

Description
This course presents advanced and most recent topics in marketing.

MKTG 5375 - Independent Study in Contemporary Topics in Marketing (1-3 cr.)

Prerequisites
Consent of MKTG unit head and Director of MBA Program.

Description
Readings and research on recent topics in marketing.

When Offered
Offered occasionally.

Mathematics and Actuarial Science

MACT 1111 - Algebra and Trigonometry (3 cr.)

Prerequisites
Thanawyia Amma Arts or equivalent.

Description
Fundamentals of algebra (real numbers - order and absolute value - polynomials - factoring - rational expressions - radicals - rational exponents). Linear and quadratic equations and inequalities, graphs, the circle. Functions: Zeros of polynomial functions, exponential, logarithmic and trigonometric functions. Systems of linear equations. Arithmetic and geometric sequences. The Binomial Theorem.

When Offered
Offered in fall and spring
Notes
No credit for Thannawia Amma Math/Science students, or equivalent, or students majoring in any of the departments of the School of Sciences and Engineering.

MACT 1112 - Basic Mathematics for Social Sciences (3 cr.)

Prerequisites
Prerequisite: Thanawyia 'Amma Science or .MACT 1111 .

Description
Fundamentals of algebra. Equations and inequalities. Matrices. Introduction to differential and integral calculus.

When Offered
Offered occasionally.
Notes
No credit for science majors

MACT 1121 - Calculus I (3 cr.)

Prerequisites
Thanawiya Amma Science or equivalent or exemption exam

Description
Limits of one variable functions. Continuity and differentiability. Implicit differentiation. Differentiation of trigonometric, exponential, and logarithmic functions. Higher derivatives. Applications of derivatives: related rates, linear approximations, the Mean Value Theorem, l'Hopital's Rule, maxima and minima, curve sketching and optimization problems. Definite and indefinite integrals, Riemann Sums, the Fundamental Theorem of Calculus.

When Offered
Offered in fall and spring

MACT 1122 - Calculus II (3 cr.)

Prerequisites
MACT 1121 or exemption.

Description
The calculus of inverse trigonometric and hyperbolic functions. Applications of the definite integral for finding areas and volumes of revolutions. Techniques of integration. Improper integrals. Sequences and series: Convergence tests, power series, Taylor series with applications. Vectors and the three-dimensional space: Dot and cross products, lines and planes.

When Offered
Offered in fall and spring.

MACT 1930 - Selected Topic for Core Curriculum (3 cr.)

Description
A course addressing broad intellectual concerns and accessible to all students, irrespective of major.

When Offered
Offered in fall and spring.

MACT 2123 - Calculus III (3 cr.)

Prerequisites
MACT 1122

Description
Vector valued functions and space curves. Functions of several variables: Limits and continuity, partial derivatives, directional derivatives, maximum and minimum values, Lagrange multipliers. Multiple integrals: Double and triple integrals, change of variables in multiple integrals, including polar, cylindrical and spherical coordinates. Vector calculus: vector fields, The Fundamental Theorem of Line Integrals, Green's Theorem, surface integrals, Stokes' and Gauss's Theorems.

When Offered
Offered in fall and spring

MACT 2131 - Discrete Mathematics (3 cr.)

Prerequisites
MACT 1121 **(concurrent or exemption)**

Description
Logic and Proofs: Basic propositional and predicate logic, rules of inference, direct and indirect proof methods (including contraposition and contradiction). Sets: Set operations, functions, sequences and finite series, infinite cardinalities, and matrices. Integers: divisibility and modular arithmetic, primes and the Fundamental Theorem of Arithmetic, the greatest common divisor, proofs by regular and strong mathematical induction. Combinatorics: Permutations and combinations, the Pigeonhole Principle. Relations and their properties, representing relations using Boolean matrices and digraphs, equivalence relations.

When Offered
Offered in fall and spring.

MACT 2132 - Linear Algebra (3 cr.)

Prerequisites
MACT 1122 or concurrent

Description
Solutions of systems of linear equations. Matrices and determinants. The space Rn, vector spaces and subspaces. Linear independence, basis and dimension. Inner product and orthonormal bases. Linear transformations. Eigenvalues and eigenvectors. Diagonalization. Various applications.

When Offered
Offered in fall and spring

MACT 2141 - Differential Equations (3 cr.)

Prerequisites
MACT 1122

Description
First-order differential equations and applications. Higher-order differential equations. Applications of second-order linear differential equations with constant coefficients. Systems of linear differential equations. Series solutions. Laplace transform.

When Offered
Offered in fall and spring

MACT 2146 - Optimization I (3 cr.)

Prerequisites
MACT 1122 and MACT 2132

Description
Formulation of linear programming problems, graphical solutions, simplex method, duality theory, sensitivity analysis, integer programming, deterministic dynamic programming. An intro to nonlinear programming and combinatorial optimization.

MACT 2222 - Statistics for Business (3 cr.)

Description
The course aims at acquainting the students with the basic statistical methods in a business context. The course demonstrates the relevance of the statistical methods in making decisions in the different areas of business: accounting, finance, human resource management, marketing, operations, management of information systems, and more. The course covers the following: descriptive statistics, random variables and continuous probability distributions, sampling distributions, estimation and confidence intervals, one-sample hypothesis testing, inferences from two samples, Chi-Square tests, analysis of variance and simple linear regression.

When Offered
Offered in fall and spring.

MACT 3142 - Introduction to PDE and Boundary-Value Problems (3 cr.)

Prerequisites
MACT 2141

Description
Special functions. Partial differential equations. Fourier series and integrals. Diffusion, potential and wave equations in rectangular, cylindrical, and spherical coordinates. Numerical methods.

When Offered
Offered occasionally.

MACT 3143 - Numerical Methods (3 cr.)

Prerequisites
Pre-requisites or concurrent: CSCE 1001, MACT 2141 and MACT 2132

Description
Number systems and types of errors. Solution of nonlinear equations. Interpolation and the Lagrange Polynomial. Systems of linear equations. Numerical Differentiation and integration. Numerical solutions of ordinary differential equations: Runge Kutta and Multistep Methods. Numerical solutions of partial differential equations: finite difference and elements of the Spectral Method. The course includes a programming based project.

When Offered
Offered once a year.

MACT 3146 - Optimization II (3 cr.)

Prerequisites
MACT 2146

Description
Combinatorial optimization problems such as scheduling, matching, resource allocation, network and assignment problems, with real life applications. Graph modeling, minimum cost network flow problems and its reduction to shortest path and maximum flow problems. Discussion of graph algorithms as well as dual formulations such as the minimum cut problem. The course concludes with an intro to stochastic programming with examples.

MACT 3211 - Applied Probability (3 cr.)

Prerequisites
MACT 2123 or concurrently.

Description

Sample space, probability axioms, combinatorial techniques, conditional probability, independence and Bayes' theorem. Random variables. Distribution functions, moments and generating functions. Discrete probability distributions. Continuous probability distributions. Discrete joint distributions. Continuous Joint distributions. Applications of probability in the social and engineering sciences.

When Offered
Offered in fall and spring.

MACT 3223 - Statistical Inference (3 cr.)

Prerequisites
MACT 3211

Description

Sampling distribution. Point and interval estimation, methods of moments and MLE. Hypothesis testing, Uniformly Most Powerful (UMP), generalized likelihood ratio tests and order statistics.

When Offered
Offered once a year.

MACT 3224 - Probability and Statistics (3 cr.)

Prerequisites
MACT 1122 or ECON 3061

Description

A course in probability and statistics designed for computer science and engineering students. Probability is used to construct parametric models that often arise in computer science and engineering problems. Statistics is then used to estimate the parameters of these models based on available data, check the adequacy of the fitted models, and test specific hypotheses. Topics include random variables and their probability distributions including uniform, binomial, geometric, Poisson, normal, and exponential distributions; expected value of functions of random variables; stochastic simulation; sampling distributions; maximum likelihood and least squares methods of estimation; statistical inference including hypothesis testing and interval estimation.

When Offered
Offered in fall and spring.
Notes
Students can neither take both MACT 3211 and MACT 3224 for credit nor can they take both MACT 3223 and MACT 3224 for credit.

MACT 3311 - Introduction to Financial Mathematics (3 cr.)

Prerequisites
MACT 1122

Description

The most commonly used mathematical functions for computing interest and discount rates are discussed. This includes simple, compound, and other forms of interest used in financial valuations, accumulated value and present value, annuities, sinking funds, amortization of debt,

and determination of yield rates on securities. The theory developed in the first part of the course is then applied to the valuation of bonds, mortgages, capital budgeting, depreciation methods, and other financial instruments. Zero-coupon bond, term structure of interest rates, coupon bonds, modified and Macaulay durations, convexity.

When Offered
Offered once a year.

MACT 3940 - Seminar in Mathematics (1 cr.)

Prerequisites
Prerequisite: junior standing

Description
Weekly one hour seminar in different areas of Mathematics to be given by faculty or invited speakers from industries and other scientific communities.

When Offered
Offered occasionally.

MACT 4125 - Complex-Function Theory (3 cr.)

Prerequisites
MACT 2123

Description

The complex plane, analytic functions, and Cauchy-Riemann equations. Elementary functions, complex integration. Cauchy's theorem and Cauchy's integral formula. Taylor and Laurent series. The calculus of residues.

When Offered
Offered once every three semesters.

MACT 4126 - Real Analysis I (3 cr.)

Prerequisites

MACT 2123, MACT 2131 and MACT 2132.

Description

A first semester course in Real Analysis covering: Structure of the real number line, sequences and series, limits, continuity, differentiation, sequences and series of functions, uniform convergence, the Darboux and Riemann integrals and the Fundamental Theorem of Calculus.

When Offered
Offered once every three semesters.

MACT 4127 - Real Analysis II (3 cr.)

Prerequisites
MACT 4126

Description

A second semester course in Real Analysis covering: Further topics in Riemann integration, Riemann-Stieltjes integral, Picard-Lindeloff Theorem, metric and topological spaces, Stone-Weierstrass Theorem, calculus of several variables including Taylor's theorem, Green's theorem, and a brief introduction to measure theory.

When Offered
Offered occasionally.

MACT 4133 - Formal and Mathematical Logic (3 cr.)

Prerequisites
MACT 2131

Description
Introduction to the goals and methods of mathematical logic. Propositional and predicate calculus (first order logic) are presented in detail. Goedel's completeness and incompleteness theorems, and some of the philosophico-mathematical problems in set theory, and alternative logics are discussed.

When Offered
Offered occasionally.

MACT 4134 - Modern Algebra (3 cr.)

Prerequisites
MACT 2131 and MACT 2132 .

Description
Sets, integers, groups. Integral domains. Fields. Rings and ideals. Homomorphisms. Quotient groups and quotient rings.

When Offered
Offered once a year.

MACT 4135 - Graph Theory (3 cr.)

Prerequisites
MACT 2131 and MACT 2132 .

Description

Set-theoretic definition of a graph. Bipartite graph, directed acyclic graph, and tournament. Matchings, Hall's Theorem and Berge's Theorem, as well as the algorithms of Prim, Dijkstra, Kruskal, and Ford-Fulkerson. Trees, connectivity and Menger's Theorem. Planarity and chromatic number. Choice of topics among: Graph Ramsey Theory, dynamic programming, Bayesian Belief Propagation, and treewidth.

When Offered
Offered occasionally.

MACT 4212 - Stochastic Processes (3 cr.)

Prerequisites
MACT 2132 and (MACT 3211 or MACT 3224)

Description

Introduction to stochastic process, discrete time Markov chain, Poisson process, Compound Poisson Processes and Renewal Processes, continuous-time Markov Chain, Transition probabilities and limiting behavior for Markov Chains, Martingales, Brownian Motion, applications in finance and insurance.

When Offered
Offered once a year.

MACT 4213 - Mathematical Modeling with Applications (3 cr.)

Prerequisites
MACT 2132 and MACT 4212

Description
Introduction to stochastic modeling and its real-life applications. Overview of discrete- and continuous-time models, including random walks, Brownian motion, and Poisson and compound Poisson processes. Introduction to stochastic differential equations, Itô calculus, and diffusion processes. Mathematical modeling of various real-life problems.

When Offered
Offered once a year

MACT 4231 - Applied Regression Methods (3 cr.)

Prerequisites
(MACT 2132 or ECON 3061) and (MACT 3224 or ECON 2081 or MACT 3223)

Description

Standard least squares method and application to problems arising from social, biological and engineering sciences. Deviation from assumption of multicollinearity. Variable selection methods. Analysis of variance, Generalized linear models including logistic regression models. Course includes an applied project (a thorough analysis of real-life data using computer packaged programs).

When Offered
Offered once a year.

MACT 4232 - Analysis of Time Series Data (3 cr.)

Prerequisites
MACT 4231 or ECON 3081

Description
This course is a continuation of MACT 4231 . It deals with the problems of modelling and forecasting time series data. Computer program packages are used as an aid for obtaining solutions. Topics include serial correlation, seasonal adjustments, exponential smoothing and extrapolation, state space models, moving average, autoregressive, ARMA and ARIMA models, and nonlinear time series, including ARCH models and chaos. Emphasis on model building, diagnostic checking, and model selection.

When Offered
Offered once a year.

MACT 4233 - Applied Multivariate Analysis (3 cr.)

Prerequisites
(MACT 2132 or ECON 3061) and (MACT 3223 or MACT 3224 or ECON 2081)

Description
Techniques of multivariate statistical analysis illustrated by examples from various fields. Topics include: Multivariate normal distribution. Sample geometry and multivariate distances. Inference about a mean vector. Comparison of several multivariate means, variances, and covariances. Detection of multivariate outliers. Principle components. Multidimensional scaling. Factor analysis. Canonical correlation. Discriminant analysis. and Clustering. Course includes an applied project (a thorough analysis of real-life data sets using computer-packaged programs).

When Offered
Offered once a year.

MACT 4312 - Mathematics of Derivatives Pricing I (3 cr.)

Prerequisites
MACT 3311

Description
Introduction to financial concepts: Forwards and futures, options, put-call parity, arbitrage and no-arbitrage strategies, pricing forwards with dividends and without dividends and description of interest rate swaps. Mathematical techniques for pricing: put-call parity with and without dividends, put-call parity for coupon bonds, relationships between European and American options, properties of options (monotonicity, rate of increments, convexity), one-period and multi-period binomial trees for stock price and forward price, pricing options using a binomial tree, delta hedging, risk-neutral pricing, pricing and hedging American options.

When Offered
Offered once a year.

MACT 4313 - Mathematics of Derivatives Pricing II (3 cr.)

Prerequisites
MACT 4212 and MACT 4312

Description
The course aims to introduce students to continuous-time models in financial markets. It also gives an overview of the type of mathematics and stochastic modelling that arises in the area of financial derivative pricing: binomial model, stochastic processes, portfolio replication approach and risk neutral evaluation. In this course, we explore the Black-Scholes framework and option hedging using the Greeks. We also introduce some interest rate models and price options in the bond market.

When Offered
Offered once a year.

MACT 4314 - Financial Modeling (3 cr.)

Prerequisites
FINC 3201

Description
Financial modeling, Excel functions, Simulation models, Applications of financial modeling in practice.

MACT 4321 - Long-Term Actuarial Mathematics I (3 cr.)

Prerequisites
MACT 3211 and MACT 3311

Description
Survival models, analytical mortality laws, life table, fractional age assumptions, non-parametric estimation of survival models, continuous and discrete life insurances, continuous and discrete life annuities, loss random variable, net single premium and gross premiums.

When Offered
Every Fall.

MACT 4322 - Long-Term Actuarial Mathematics II (3 cr.)

Prerequisites
MACT 4212 and MACT 4321

Description
Policy values for life insurance policies and Reserves, Multiple life models, Multiple decrement models, Multi-state models including Pension Plans and Retirement and Profit Analysis.

When Offered
Offered once a year.

MACT 4323 - Advanced Long Term Actuarial Mathematics (3 cr.)

Prerequisites
MACT 4322

Description

Pension Plans and Retirement Benefits. Universal Life Insurance. Option Pricing Fundamentals. Embedded Options in Life Insurance and Annuity Products.

When Offered
Offered in fall.

MACT 4331 - Short Term Actuarial Mathematics I (3 cr.)

Prerequisites
MACT 3223

Description

The course aims to introduce students to severity models and frequency models and how they are used in short-term insurance applications. The course introduces aggregate models, risk measures and coverage modifications. The course introduces simulation techniques.

When Offered
Offered once a year.

MACT 4332 - Short Term Actuarial Mathematics II (3 cr.)

Prerequisites
MACT 3223 - Statistical Inference (3 cr.) and MACT 4331 - Short Term Actuarial Mathematics I (3 cr.)

Description
The course aims to introduce students to parametric estimation for complete/incomplete data; Credibility theory, Bühlmann models and Bayesian credibility; Short term insurance arrangements: property and casualty, homeowners, health and disability and finally techniques for pricing and reserving for short-term insurance coverage.

When Offered
Offered once a year.

MACT 4910 - Guided Studies in Mathematics (1-3 cr.)

Prerequisites
Prerequisite: senior standing and consent of supervisor.

Description
Under guidance of a faculty member and with approval of the Chairman, the student carries on reading or research on a specific mathematics topic. Student should demonstrate achievements by presenting results, submitting a report, or passing an examination as determined by the supervisor..

Repeatable
May be repeated for credit if content changes

MACT 4930 - Selected Topics in Mathematics (3 cr.)

Prerequisites
Prerequisite: consent of instructor.

Description
Topics chosen according to interests of students and faculty.

When Offered
Offered occasionally.
Repeatable
May be repeated for credit if content changes.

MACT 4931 - Selected Topics in Actuarial Science (3 cr.)

Prerequisites
Senior standing and consent of supervisor.

Description
Under guidance of a faculty member and with approval of the Chairman, the student carries on reading or research on a specific actuarial science topic. Student should demonstrate achievements by presenting results, submitting a report, or passing an examination as determined by the supervisor.

When Offered
Occasionally.
Repeatable
May be repeated for credit if content changes.

MACT 4950 - Practical Internship (3 cr.)

Prerequisites
Consent of department chairperson or program director.

Description
This course consists of participation in a full-time or part-time internship experience, related to the student's field of study under the supervision of both an approved internship provider and a faculty adviser. This culminating course provides practical, hands-on training in a relevant industry to enhance classroom learning and allows senior students to apply the knowledge and skills they have acquired in the actuarial science program to real-world problems.

When Offered
Offered in summer and winter

MACT 4980 - Senior Thesis (3 cr.)

Prerequisites
Restricted to seniors.

Description

The Senior Thesis serves as a culminating course that is intended in particular for senior students who may have the intention to pursue graduate studies or research-oriented careers. With the approval of a faculty advisor, students work independently under their guidance to plan and conduct deeper studies on a topic of contemporary interest. This research effort begins with creative inquiry and systematic research, includes documentation of substantive scholarly effort, and culminates in a written thesis and an oral defense. Students may choose to work alone or in a group of maximum 3 (in which case the contribution of each participant should be substantial and well identified).

When Offered
Offered in fall and spring

MACT 4990 - Enterprise Risk Management (3 cr.)

Prerequisites
Senior standing and consent of adviser and instructor.

Description
The course introduces students to the concept of risk and the role of enterprise risk management (ERM) in mitigating loss and optimizing opportunity across a business. The course covers the development of an ERM framework, identification, measurement and management of risk within risk-bearing enterprises. Students will participate in a mock risk committee, practice the risk control process in a case study group and gain hands-on experience drafting an ERM framework.

Hours
Two class periods.
When Offered
Offered once a year.

MACT 6111 - Advanced Numerical Methods (3 cr.)

Prerequisites
Consent of instructor.

Description
Numerical optimization: nonlinear unconstrained optimization, direct methods, simplex method, genetic algorithms, gradient methods, Quasi-Newton methods, constrained optimization, interior point methods, the ellipsoidal technique, trust region and optimization through surrogate models, design centering and tolerance. Solution of partial differential equations: advances in the finite element technique, finite volume, spectral methods, fuzzy approach.

MACT 6121 - Advanced Probability with Engineering Applications (3 cr.)

Prerequisites
A course in probability and consent of instructor.

Description
Introduction to concepts of stochastic processes, Markov processes in discrete or continuous time; renewal processes; martingales; Brownian motion and diffusion theory; random walks, inventory models, population growth, queuing models, illustrated by examples from sciences and engineering, biological models, traffic flow and applications from other areas depending on the interest of the class.

Mechanical Engineering

MENG 2112 - Strength of Materials (3 cr.)

Prerequisites
ENGR 2102 or ENGR 2105

Description
Concept of stress and strain in components, mechanical behavior of materials under tensile, compressive, and shear loads, hardness, impact loading, fracture and fatigue. Analysis of stresses and the corresponding deformations in components, axial loading, torsion, bending, and transverse loading. Statically indeterminate problems. Transformation of plane stresses, and Mohr's circle.

Hours
Two class periods
When Offered
Offered in fall and spring.

MENG 2200 - The Art, Science, and Global Aspects of Contemporary Sculpture (3 cr.)

Description
Creating a successful sculpture requires an imaginative and innovative concept as well as a sound design that utilize the potential and avoid the limitations of the materials and the processes used in making it. This course discusses the global aspects of sculpture and the close interrelationship between the social and political constraints on the sculptors in creating their artwork. Topics explored will include issues of interpretation and audience interaction, the social responsibility of the artist especially in creating public art to heighten social and political awareness and sensitivity to certain issues and to start discussions relating to them. The

characteristics of the wide range of materials and processes of sculpture will also be compared and contrasted in order to help the students appreciate their esthetic qualities and understand their potential in creating works of art. An important part of the course is a hands-on component, where students, individually and collaboratively, create works of sculpture.

MENG 2202 - Introduction to Computational Thinking and Programming for Engineers Lab (1 cr.)

Prerequisites
PHYS 1021

Description

This lab is intended for students with no programming background. It teaches students solving engineering problems via the principle of programming and computing employing a programming language and techniques of current use in engineering. Topics covered include data types, arithmetic, scripts, user-defined functions, inputs, outputs, conditionals, loops, arrays, and modular programming. An emphasis is given to the visualization and graphical representation. Basics of software engineering introduced (code maintenance, debugging, and documentation). Accuracy and speed are discussed as limitations of engineering computation.

Hours
3 hours per week
When Offered
Offered in Fall and Spring.

MENG 2505 - Mechanical Engineering Drawing (1 cr.)

Prerequisites
ENGR 1005

Description

Computer-aided drafting. Mechanical details and assembly drawings. Working drawings. Geometrical tolerances. Welding symbols and details, introduction to 3D modeling. Introduction to civil and architectural drawings.

Hours

One three hour lab period

When Offered

Offered in fall and spring.

MENG 2601 - Fluid Mechanics Fundamentals (3 cr.)

Prerequisites

PHYS 1021 and ENGR 2104

Description

Fluid properties and fluid statics. Fluid flow, Euler's and Bernoulli's equations, Conservation of continuity, momentum, and energy. Laminar and turbulent flows, Reynolds number, closed conduit flow and secondary losses, and pipe networks. Fundamental flow measurements.

Hours

Two class periods and one three-hour lab period

When Offered

Offered in Fall and Spring.

MENG 3207 - Engineering Materials (3 cr.)

Prerequisites

CHEM 1005 and MENG 2112

Concurrent

MENG 3217

Description

Introduction to materials. Crystal structure of solids. Construction and use of phase diagrams in materials systems. Relationship of crystal structure to properties of metallic materials and their applications. Heat treatment of steels. Types of polymers, ceramics, glasses, and semiconducting materials and their applications.

When Offered

Offered in fall and spring

MENG 3209 - Fundamentals of Manufacturing Processes (3 cr.)

Prerequisites
MENG 3207

Description
Processing by casting, powder metallurgy, metal working, material removal, welding and joining. Processing of plastics and ceramics. Finishing processes. Materials recycling.

Hours
Two class periods and one three-hour lab period.
When Offered
Offered in fall and spring.

MENG 3217 - Mechanical and Structural Behavior of Engineering Materials Lab (1 cr.)

Prerequisites
MENG 2112

Concurrent
MENG 3207
Description
Through a series of experiments carried out by the students, the behavior of the different classes of engineering materials including metals, polymers, ceramics, and composites are demonstrated. Relationship of bonding type, crystalline/amorphous structures to properties of metallic/polymeric/ceramic materials and their applications. Materials' mechanical performance under the various loading modes. Difference between meso and microstructure, single and multiphase solids, etc. Experiments that demonstrate the influence of cooling rate, strain hardening and heat treatment on the mechanical behavior of materials. Identify causes of failure resulting from chemical attack (corrosion), mechanical wear (erosion) or due to structural changes associated with high temperature (creep), etc.

When Offered
Offered in fall and spring.

MENG 3402 - Quality and Process Control (3 cr.)

Prerequisites

ENGR 3202 and MACT 3224

Description
Fundamentals of statistical quality control; control charts for variables and attributes; process capability analysis; sampling plans and techniques; introduction to design of experiments.

Hours
.Two class periods and one three hour lab period.
When Offered
Offered in fall and spring.

MENG 3446 - Engineering and Project Management (2 cr.)

Prerequisites
MACT 3224, ENGR 3222

Description
Concepts of Engineering Management, Organizing, Motivation and Leadership, Performance evaluation, Project selection and initiation, Project planning, Project scheduling, monitoring, control, and evaluation, Resources scheduling, Project management software.

When Offered
Offered in Fall.

MENG 3502 - Mechanical Systems (3 cr.)

Prerequisites
ENGR 2104 and ENGR 3202.

Description
Linkage synthesis, position, velocity, and acceleration of mechanisms, cams, gears and gear trains, machine dynamics, rotating and reciprocating machines, dynamic balancing.

When Offered
Offered in fall and spring.

MENG 3505 - Mechanics of Materials (3 cr.)

Prerequisites
MENG 2112, MENG 2505, and Concurrent (or prerequisite) ENGR 3202.

Description
Internal reactions, load-stress relations and transformation of stresses for generally loaded rods. Generalized concepts of stress, strain and material relations. Computerized Methods. Elastic-plastic behavior of beams. Analysis of thin walled beams. Membrane theory of axisymmetric shells. Stress concentrations.

When Offered
Offered in fall and spring.

MENG 3506 - Mechanical Design I (3 cr.)

Prerequisites
ENGR 2104, MENG 2505, MENG 3209, MENG 3505

Concurrent
MENG 3209
Description
Introduction to design concepts. Constructional details as affected by manufacturing, assembly, and strength considerations. Engineering materials. Design for steady and cyclic loading, and for rigidity and stability. Rigid and elastic connections. Bolts, rivets and welds. Design of shafts and springs. Use of interactive computer programs for problem solving is illustrated and encouraged. Design projects.

Hours
Two class periods and one three-hour design and analysis session
When Offered
Offered in fall and spring.

MENG 3601 - Fundamentals of Thermodynamics (3 cr.)

Prerequisites
(ENGR 2122 or MENG 2601), CHEM 1005, CHEM 1015

Description
Fundamental Concepts and Definitions. Thermodynamic Processes, pure substances and perfect gases, The First Law of Thermodynamics, the Second Law of Thermodynamics, the Carnot cycle. Thermodynamic Relations, Reversibility and Entropy.

When Offered
Offered in fall and spring.

MENG 3602 - Applied Fluid Mechanics (3 cr.)

Prerequisites
(ENGR 2122 or MENG 2601), MENG 3601

Description
Dimensional analysis, external flow and aerodynamic forces, compressible flow, turbomachinery, pumps, fans, compressors, and turbines. Measurements of fluid flow applications.

Hours
Two class periods and one three-hour lab period
When Offered
Offered in fall and spring.

MENG 3605 - Applied Thermodynamics (3 cr.)

Prerequisites
MENG 3601

Description
Availability and second-law analysis. Power cycles: air standard and actual cycles; reversed cycles: refrigerators and heat pumps, gas mixtures, psychrometry and air conditioning, hydrocarbon reactions, waste heat recovery.

Hours
Two class periods and one three-hour lab period.
When Offered
Offered in fall and spring.

MENG 3705 - System Dynamics (3 cr.)

Prerequisites
(PHYS 2211 or (PHYS 2216 and PHYS 2217)), MENG 3502

Description

Mathematical modeling of mechanical, electrical, electromechanical, and thermo-fluid systems. Free and forced vibrations for a single degree of freedom systems. Free and forced vibrations of multiple degrees of freedom systems. Linearization. Stability, Steady-state error, and Time response analysis. State-space and transfer function solutions. System analogies. Introduction to automatic control and Feedback control systems. Team based project covering modeling, analysis, and design of a selected system by each team.

When Offered
Offered in Fall and Spring.

MENG 4208 - Selection of Materials and Processes for Design (3 cr.)

Prerequisites
MENG 3209 and MENG 3506

Description
Effect of material properties on design. Effect of manufacturing processes on design. Failure and reliability of components in service. Economics of materials and manufacturing processes. Decision making and the selection process. Integration of design and economic analysis with materials and process selection. Case studies.

When Offered
Offered in fall and spring.

MENG 4221 - Composites: Design, Materials, and Manufacturing (3 cr.)

Prerequisites
MENG 3209

Description
This course provides the students with the knowledge and skills for designing composite products, selecting the type of composite material and its processing. Comprehensive knowledge of composite design principles is covered to tailor its properties. Composite materials, including natural composites such as wood and bone, and engineered materials from concrete to fiber and dispersion reinforced matrices are covered. The course also covers interfacial adhesion, mechanical and functional properties, defects, failure modes, and characterization to study how composite materials behave.

Hours
Two class periods and one three hour lab period.
When Offered
Offered in Spring.

MENG 4226 - Metals, Alloys and Composites (3 cr.)

Prerequisites
MENG 3209

Description
Structure-property relationship in alloy systems. Imperfections in solids. Diffusion and phase transformation. Heat treatment of ferrous and non-ferrous alloys. Structure, properties and processing of metal matrix composites (MMCs). Behavior of metallic alloys and composite materials in service. Case studies and laboratory experiments.

Hours
Two class periods and one three-hour lab period
When Offered
Offered in fall.

MENG 4227 - Failure of Mechanical Components (3 cr.)

Prerequisites
MENG 3209 .

Description
Mechanical failures, fracture mechanics, types of corrosion. Failure modes: fracture fatigue,

creep, corrosion and wear. Diagnosis and prevention of failures. Case studies.

When Offered
Offered in spring.

MENG 4229 - Nanostructured Materials (3 cr.)

Prerequisites
MENG 3209

Description

Introduction to Nanotechnology, Nanomaterials e.g. carbon nanotubes and nanoclays. Nanostructured materials. Transition from microstructure to nanostructure. Grain refinement techniques. Paradox of strength and ductility. Multi-modal microstructures. Fabrication techniques. Overview of mechanical, thermal and structural characterization techniques. Applications.

When Offered
Offered in spring.

MENG 4232 - Materials, Processing, and Design (3 cr.)

Prerequisites
MENG 3209

Description
Processing for grain refinement of engineering materials; Solidification, cooling rates and heat treatment for casting and molding; shape forming; powder, fiber, and composite processing; Joining processes; laser processes; deposition technology for coatings for various applications.

Hours
Two class periods and one three- hour laboratory

When Offered
Offered in fall.

MENG 4239 - Advanced Manufacturing Processes (3 cr.)

Prerequisites
MENG 3209 and PHYS 2216

Description
Automation of manufacturing processes. Numerically-controlled machine tools. NC programming. Nontraditional manufacturing processes include thermal, electrical, chemical, and mechanical machining processes, laser and electron beam welding, spark erosion, and microfabrication and nanofabrication technologies.

Hours
Two class periods and one three-hour lab period.
When Offered
Offered in spring.

MENG 4440 - Engineering Operations Research (3 cr.)

Prerequisites
ENGR 3202

Description
Introduction to operations research, Linear Programming (LP) models; LP Solution approaches; integer programming; post optimality analysis; transportation, transshipment, and assignment problems. Maximal flow, shortest route, minimum spanning tree, and travelling salesman problems. Case studies, model formulations and applications using software.

When Offered
Offered in fall and spring.

MENG 4441 - Decision Support in Engineering Systems (3 cr.)

Prerequisites

MENG 4440 and MACT 3224 .

Description
Interactive computer-based engineering decision support systems (DSS), Design and development, informational data base, mathematical models including nonlinear, goal and dynamic programming problems, queuing and decision analysis, heuristics and user interface.

When Offered
Offered occasionally.

MENG 4442 - Reliability Engineering and Risk Analysis (3 cr.)

Prerequisites
MENG 3402

Description
Basic concepts of components and systems reliability. Methods of modeling systems for reliability analysis. Reliability estimation & measurement. Principal methods of reliability analysis, including fault tree and reliability block diagrams; Failure Mode and Effects Analysis (FMEA); event tree construction and evaluation; reliability data collection and analysis. Design by reliability & probabilistic design. Overview of Risk Assessment and Risk Management, relation to System Safety and Reliability Engineering measures.

When Offered
Offered occasionally.

MENG 4443 - Systems Simulation (3 cr.)

Prerequisites
MENG 3402

Description
Basic concepts; examples of different production and service systems; pseudo random numbers; queuing models; random variate generation; discrete-event simulation; simulation languages; model validation and analysis of simulation data.

When Offered
Offered occasionally.

MENG 4444 - Work Analysis and Design (3 cr.)

Prerequisites
MENG 3209

Description
Methods used in determining the most effective utilization of effort in human activity systems; work methods, analysis and design; micro motion analysis; predetermined time systems; human and rating factors; work samplings; learning curves; physiological and psychological factors; computer-aided time study.

When Offered
Offered in fall and spring.

MENG 4445 - Production and Inventory Control (3 cr.)

Prerequisites
ENGR 3202 and ENGR 3222

Description
Basic concepts of production management ; forecasting; break-even analysis, aggregate production planning; inventory management; master scheduling, materials requirement planning; capacity planning; resource allocation and scheduling.

When Offered
Offered in fall and spring.

MENG 4448 - Facilities Planning (3 cr.)

Prerequisites
ENGR 3202

Description

Process analysis; operation analysis, job design; facility location; facility layout; materials handling systems; storage and warehousing; office layout; design principles and analytical solution procedures; computerized approaches.

When Offered
Offered occasionally.

MENG 4449 - Maintenance Management Systems (3 cr.)

Prerequisites
ENGR 3222

Description
Maintenance Systems performance measures, types of equipment, scheduled, preventive, and predictive maintenance, work orders, planning, scheduling and control of maintenance operations, equipment safety and reliability, life cycle costing and replacement, spare parts inventory management and cost of maintenance.

When Offered
Offered occasionally.

MENG 4477 - Manufacturing System Automation (3 cr.)

Prerequisites
MENG 3209

Description
Computer assisted manufacturing systems NC, CNC, DNC, robotics, material handling, group technology, flexible manufacturing systems, process planning and control.

Hours
Two class periods and one three-hour lab period
When Offered
Offered occasionally.

MENG 4507 - Mechanical Design II (3 cr.)

Prerequisites
MENG 3506 and MENG 3502

Description
Design of machine elements used in power transmission: couplings, gears, bearings, roller chain drives, clutches. Design for surface failure prevention. Applications: automotive and machine tool areas, etc. Basics of systems design. Design projects.

Hours
Two class periods and one three-hour design and analysis session.
When Offered
Offered in fall and spring.

MENG 4551 - Design for Additive Manufacturing (3 cr.)

Prerequisites
Senior standing, MENG 2505 and MENG 3506

Description
Introduction to CAD/CAM and additive manufacturing techniques. CAD software and hardware. 3D Geometric modeling. Types of curves and surfaces. Data capturing techniques. Surface fitting techniques. Rapid prototyping techniques. Materials and Processes for Additive Manufacturing. Overview and utilization of typical interactive computer graphics package. Hands-on experience in using CAD software, 3D laser digitizing scanner, rapid prototyping machine, and applications of additive manufacturing.

Hours
Two class periods and one three-hour lab period.
When Offered
Offered in spring.

MENG 4553 - Finite Element Method and Applications in Design (3 cr.)

Prerequisites
MENG 3505 and ENGR 3202

Description
Displacement approach for simple elements in structural mechanics. Generalization to three-dimensional elements. Overview of the finite element method (FEM), variational principles, transformation, assembly, boundary conditions, solutions, convergence and stability. Isoparametric elements. Applications to solid mechanics, heat conduction and coupled problems. Pre- and post processing. Integration of FEM in Computer Aided Design.

Hours
Two class-periods and one three-hour lab period.
When Offered
Offered in fall.

MENG 4554 - Finite Element Method in Dynamic Analysis and Design (3 cr.)

Prerequisites
MENG 4553

Description
Finite element formulation of eigen problems and initial value problems in one- and multi-dimensions; model, harmonic and transient response; applications in mechanical engineering.

When Offered
Offered occasionally.

MENG 4555 - Applied Vibration Measurements, Analysis and Control (3 cr.)

Prerequisites
Senior standing and MENG 3705

Description
Elements of vibration measuring systems, vibrations-severity measurements, frequency analysis of mechanical vibration, measuring systems for frequency analysis, vibration of continuous systems, application of vibration measurements in condition monitoring and diagnostics, fault detection in rotating equipment, vibration control.

Hours
Two class periods and one three-hour laboratory period

When Offered
Offered in fall.

MENG 4558 - Integrated Design (3 cr.)

Prerequisites
MENG 3209 and MENG 3506

Description
The engineering design environment. Design and manufacturing. Design pitfalls and their early identification. Design measures for improving the maintainability, reliability and environmental impact. Implementation of the principle of redundancy. Introduction to design optimization.

When Offered
Offered in fall.

MENG 4565 - Design of Engineering Systems (3 cr.)

Prerequisites
MENG 3506

Description
Elements of system architecture, product versus process-driven design objectives, design of systems, synthesis and analysis in systems design, case studies.

When Offered
Offered in occasional.

MENG 4606 - Heat Transfer (4 cr.)

Prerequisites
ENGR 3202 and MENG 3602

Description
Steady and unsteady, one and multi-dimensional, heat conduction. Finite-difference and Finite-volume methods applied to heat conduction. Heat transfer by natural and forced convection.

Introduction to Mass transfer. Heat transfer by radiation. Design of Heat exchangers.

Hours
Three class periods and one three-hour laboratory period
When Offered
Offered in fall and spring.

MENG 4661 - Turbo-Machinery (3 cr.)

Prerequisites
MENG 3602

Description

Preliminary design procedures for turbo-machines. Ideal and actual performance characteristics for hydraulic pumps and turbines, axial and centrifugal flow compressors and fans, axial and radial flow gas turbines. Cavitation in hydraulic machinery. Turbo-chargers. Hydro-power plants and pumped-storage.

When Offered
Offered in spring.

MENG 4662 - Power Plant Technology (3 cr.)

Prerequisites
MENG 4606 and MENG 3605 .

Description
Steam and Gas turbine power plants. Combined-cycle power plants. Co-generation. Principles of nuclear energy and introduction to Nuclear power plants. Environmental impacts of power plants.

When Offered
Offered in fall.

MENG 4663 - Design of Renewable Energy Systems (3 cr.)

Prerequisites
MENG 3605 and MENG 4606 .

Description
The world energy scene. Environmental impact of energy use. Wind power, PV and Solar Thermal Electricity and Biomass. Hybrid systems. Renewable energy generation in Power systems. Economics and sustainability.

When Offered
Offered in spring.

MENG 4665 - Internal Combustion Engines (3 cr.)

Prerequisites
MENG 3602 and MENG 3605

Description
Review of Air standard cycles. Diesel and Petrol combustion overview. Fuels and chemistry of combustion reactions. Octane and Cetane ratings. Fluid mechanic interactions with flames - burn rates. Overview of exhaust emissions. Turbocharging and supercharging, volumetric efficiency and valve timing.

When Offered
Offered in spring.

MENG 4666 - Design of Heating, Ventilation, and Air Conditioning Systems (3 cr.)

Prerequisites
MENG 3605 and MENG 4606.

Description

Calculation of building cooling and heating loads, and ventilation requirements. Design of Air conditioning and ventilation systems. Passive cooling and heating. Air conditioning equipment.

When Offered
Offered in fall.

MENG 4667 - Refrigeration and Air-conditioning (3 cr.)

Prerequisites
MENG 4606 and MENG 3605 .

Description
Refrigeration and Air conditioning cycles and C.O.P. Vapor compression refrigeration systems. Absorption refrigeration. Cryogenics. Design of Air conditioning systems and components. Heat pumps and heating systems. District cooling.

When Offered
Offered in spring.

MENG 4756 - Automatic Control Systems (3 cr.)

Prerequisites
Senior standing and MENG 3705

Description
Feedback control system and analysis in the time domain. System sensitivity to a parameter changes. PID controllers: analysis and design. State-space: analysis and design controllers. Stability and the concept of Routh-Hurwitz. Root locus analysis and design. Analysis of systems in frequency domains. Bode plots and controller design. Nyquist stability criterion. Introduction to intelligent control. Introduction to digital control systems. A term team-based project covering analysis and controller design of selected systems by each team.

When Offered
Offered in Spring.

MENG 4757 - Robotics: Design, Analysis and Control (3 cr.)

Prerequisites
ENGR 2104

Description
Robotics and Automation, Robot classification and technical specifications, Robotic safety, homogeneous coordinate transformation, Direct and inverse kinematics, Differential motion, Jacobian: Velocities and static forces, Trajectory planning, Manipulator dynamics: Newton-Euler and Lagrange-Euler dynamic models, robot control. A term team-based project covering the selection of a manual process and conducting planning and analysis to automate it using robots.

When Offered
Offered in fall.

MENG 4778 - Microcontrollers and Mechatronics Systems (3 cr.)

Prerequisites
(PHYS 2211) or (PHYS 2216 and PHYS 2217)

Description

Mechatronics and digital systems, Digital logic design (Combinational and Sequential logic design), Microprocessor and Microcontroller architecture, Microcontroller selection. Introduction to embedded systems. Sensors and Interfacing techniques, A/D and D/A conversion. Memory addressing techniques, Interrupt techniques, I/O needs, and expansion, Timers. Introduction to assembly, and a term team-based project covering problem selection, design, implementation and demonstration.

Hours
Two class periods and one three-hour laboratory period
When Offered
Offered in Fall.

MENG 4779 - Integrated Design of Electromechanical Systems (3 cr.)

Prerequisites
MENG 3705 or Concurrent

Description
Mechatronics design and development process, Digital systems, Microcontrollers in Mechatronics, Programmable logic controllers (PLC), PLC and interfacing techniques, Ladder logic programming, servo motors: motion, braking and speed control, Transducers and instrumentation, Vision sensing principles, Power supplies, Pneumatic and Electro-pneumatic control. Team based project covering design, control and application of electromechanical systems. Laboratory experiments.

Hours
Two class periods and one three-hour laboratory period.
When Offered
Offered in spring.

MENG 4920 - Special Problems in Engineering (1-3 cr.)

Prerequisites
Prerequisite: approval of department chair.

Description
Independent study in various problem areas of engineering may be assigned to individual students or to groups. Readings assigned and frequent consultations held.

When Offered
Offered in fall and spring.
Repeatable
May be repeated for credit if content changes

MENG 4930 - Selected Topics in Industrial Engineering (3 cr.)

Prerequisites
Senior standing.

Description

Specialized topics in industrial engineering, not covered in other listed courses, will be discussed. Offered more than once for credit if contents change. Precise course description depends on course topic.

When Offered
Offered occasionally.

MENG 4931 - Selected Topics in Design (3 cr.)

Prerequisites
Prerequisite: senior standing in mechanical engineering.

Description
Specialized topics in design will be discussed, e.g. advanced strength of materials, power-plant analysis and design, design of manufacturing aids, materials-handling equipment, microcomputers in control, fluid machinery and power systems, finite-elements method in engineering, etc.

When Offered
Offered in spring.

MENG 4932 - Selected Topics in Materials and Manufacturing (3 cr.)

Prerequisites
MENG 3209

Description
This course will cover topics to be chosen based on the emerging advancements in the field of Materials and Manufacturing. Maybe taken for credit more than once if content changes.

When Offered
Offered occasionally.

MENG 4936 - Selected Topics in Power Engineering (3 cr.)

Prerequisites
Depends on topic.

Description
Covers specialized topics in Power engineering not covered in other listed courses.
Offered more than once for credit if contents change. Precise course description depends on course topic.

When Offered
Offered in fall.

MENG 4937 - Selected Topics in Mechatronics (3 cr.)

Prerequisites
depends on topic

Description
Covers specialized topics in Mechatronics field not covered in other listed courses.
Offered more than once for credit if contents change. Precise course description depends on course topic.

When Offered
Spring

MENG 4950 - Industrial Training (1 cr.)

Prerequisites
Prerequisite: Senior standing and completion of all ENGR in addition to a minimum of 18 credits of MENG.

Description
Each student is required to spend a minimum of eight weeks in industrial training in Egypt or abroad. A complete account of the experience is reported, presented and evaluated.

When Offered
Offered in fall.

MENG 4980 - Senior Project I (1 cr.)

Prerequisites
Co- or pre-requisites

MENG 3446, MENG 3605 and MENG 3705

Description
Working in project teams, students will conceptualize and design a multi-disciplinary engineering solution addressing a real-world problem in an area of societal, national or international need. The project work constitutes a substantial design experience, typically based on the integration of knowledge and skills acquired in a broad range of earlier course work, incorporating applicable engineering standards and realistic constraints. Topics are selected by teams of students according to their areas of interest and the approval of advisors. This course is the first of a sequence of two capstone courses, which guides students through execution and documentation of the conceptual and detailed design stage.

When Offered
Offered in fall and spring.

MENG 4981 - Senior Project II (2 cr.)

Prerequisites
MENG 4980

Description
Working in project teams, students continue the work on the project topic selected in MENG 4980 to develop and analyze the engineering solution for the selected problem. The project work constitutes a substantial design experience, typically based on the integration of knowledge and skills acquired in a broad range of earlier course work, incorporating applicable engineering standards and realistic constraints. This course is the second of a sequence of two capstone courses, where development, testing, and analysis take place, resulting in a functional solution that meets design requirements.

When Offered
Offered in fall and spring.

MENG 5168 - Nuclear Power Plant Engineering (3 cr.)

Prerequisites
Consent of instructor

Description
Fundamentals of nuclear reactor engineering and reactor safety. Aspects of nuclear physics, nuclear interactions, reactor criticality and heat removal. Introduction to current nuclear reactor types, and next generation reactor types.

When Offered
Offered occasionally

MENG 5222 - Materials in Design and Manufacturing (3 cr.)

Description
Interrelationship of design, materials and manufacturing. Control of material properties to meet design and manufacturing requirements. Thermo-mechanical processing, surface treatment and coatings. Composite materials. Reverse engineering and materials substitution. Materials recycling. Economic considerations and life cycle costing. Case studies.

MENG 5227 - Composite Materials: Mechanics, Manufacturing, and Design (3 cr.)

Description
Composite materials, including naturally occurring substances such as wood and bone, and engineered materials from concrete to fiber and dispersion reinforced matrices. Development of micromechanical models for a variety of constitutive laws and the link between processing, property and composite structural analysis. Fabrication and processing techniques of composites; dispersion of reinforcements; interfacial adhesion; mechanical and functional properties, design and applications.

MENG 5228 - Advanced Testing and Characterization Techniques (3 cr.)

Description
Experimental techniques in the study of materials including quantitative measurements for the

characterization of micro and nanostructured bulk and thin film materials using optical, electron and atomic force microscopy; Secondary ion mass spectroscopy (SIMS), Auger Electron Spectroscopy (AES), Rutherford Backscattering (RBS); EDX; X-ray diffraction and differential scanning calometry for thermal analysis. Advanced and conventional testing techniques for characterization of the physical, optical, magnetic and mechanical properties of micron and Nanomaterials and devices.

Cross-listed
Same as NANO 5203.

MENG 5229 - Failure Analysis and Prevention (3 cr.)

Description
Failure analysis methodology and techniques including fractography, metallography, and mechanical testing. Causes of failure in service including manufacturing defects, design deficiencies, environmental effects, overloads. Fail safe designs. Case studies in failure analysis.

MENG 5231 - Fabrication of Nanomaterials For Films And Devices (3 cr.)

Description
This course will cover different techniques implemented for preparing thin films such as chemical vapor deposition, physical vapor deposition (evaporation, sputtering, pulsed laser deposition, electron beam, etc), and molecular beam epitaxy. In addition, different techniques for enhancing the Physical properties of materials will be covered. This will include post-laser treatments, metal induced crystallization, thermal treatments, etc.

Cross-listed
Same as NANO 5204.
When Offered
occasionally.

MENG 5232 - Simulation and Modeling for Nanoscale Materials and Systems (3 cr.)

Description

Principles of modeling structures and processes at the nanometer scale, including meshing techniques, finite element analysis, and molecular dynamics. Simulation of Materials Science-based or Mechanics-based modeling methods employed; mechanical response of nanostructured materials; Modeling methods including electronic structure, molecular dynamics and Monte Carlo are included.

Cross-listed
Same as NANO 5202.

MENG 5233 - Additive Manufacturing: Materials, Processes and Applications (3 cr.)

Description
Introduction to the fundamentals of Additive Manufacturing (AM). AM benefits and challenges compared to conventional manufacturing techniques as an industrial means for accelerated customized product development by replacing the traditional low-volume and high-volume manufacturing processes. AM various processes, types of feedstock, energy sources, and controlling parameters. AM process design and process selection guidelines, post-processing and software issues, will be covered. The course also introduces rapid tooling, applications, and future AM directions.

When Offered
Offered in fall.

MENG 5234 - Materials for Energy Conversion and Storage (3 cr.)

Description
This course will focus on advanced electrochemical energy conversion and storage systems including fuel cells, lithium-ion batteries, and supercapacitors; Hydrogen storage; Advanced thermal storage . Through the journey in this course, students are anticipated to understand why and how these systems are advantageous in renewable energy applications.

Cross-listed
Same as NANO 5233.

MENG 5235 - Biomaterials (3 cr.)

Description
Lectures will include: materials for biomedical and dental restoration applications and their biocompatibility; design at a molecular scale of materials used in contact with biological systems, including biotechnology and biomedical engineering; methods for biomaterials surface modification and characterization. Other topics include analysis of protein absorption on biomaterials; tissue and organ regeneration; design of implants and prostheses based on control of biomaterials-tissue interactions; drung delivery, and cell-guiding surfaces.

Cross-listed
Same as NANO 6230.

MENG 5241 - Integrated Manufacturing Systems (3 cr.)

Description
Computer aided manufacturing, automation, flexible manufacturing systems, numerical control machines, computerized process planning, information systems in a plant, selection of automated systems.

MENG 5242 - Total Quality Management (3 cr.)

Description
Product quality and losses to society, loss function, product life cycle, design for quality, quality deployment charts, customer needs, process design planning and control, continuous quality improvement, quality circles.

MENG 5243 - Systems Modeling and Optimization (3 cr.)

Description
Modeling of large scale industrial problems, theory of optimization, software performance evaluation, simulation of complex industrial systems, input/output analysis, model validation, overview of simulation languages, manufacturing systems case studies.

MENG 5245 - Production Systems Design (3 cr.)

Description
Production planning, workforce and line balancing capacity planning and expansions, optimal sequencing and scheduling, measures of effectiveness of operating systems, computer applications, applied case studies.

MENG 5251 - Engineering Systems Analysis and Design (3 cr.)

Description
Introduction, system design process, system modelling and optimization, design for operational feasibility, artificial intelligence and expert systems, applications.

MENG 5253 - Advanced Computer Aided Design (3 cr.)

Description
Homogeneous Coordinates and Cartesian Coordinates. Explicit and Implicit Representations of Lines, Planes, Surfaces and Intersections. Surface Modeling:Bezier, B-Spline and NURBS surfaces. Curve and Surface Fitting and Approximation. Solid Modeling: Constructive Solid Modeling, and Boundary Representation. Shading and Rendering. Homogeneous perspective, stereographic projections and virtual reality. Introduction to Shape and Topology Optimization.

MENG 5255 - Analysis and Design of Dynamic Systems (3 cr.)

Prerequisites
Consent of instructor.

Description
Dynamic analysis of lumped-parameter and continuous systems including strings, rods, beams and plates, use of finite elements in dynamic analysis, design of dynamic systems, systems concepts, design and synthesis of mechanical networks, modern control, system behavior analysis in time and frequency domains, compensation and design of control systems using different design methods, digital control systems.

MENG 5257 - Engineering Design Methodologies (3 cr.)

Description
Conceptual design: levels, generic concepts, main and subconcepts. The preliminary design stage. Design for reliability. Design optimization. Examples and a case study.

MENG 5258 - Applied Finite Element Analysis for Engineers (3 cr.)

Description
Advanced modeling techniques. Material, geometric and boundary condition nonlinearities. Application to elastoplasticity, creep and buckling. Time response dynamic analysis, nonlinear heat transfer. Projects involving extensive utilization of FEM packages on engineering workstations.

MENG 5263 - Cogeneration and Energy Storage (3 cr.)

Prerequisites
B.Sc. level Mechanical engineering courses in Thermodynamics, Heat transfer, Fluid mechanics and applications, or equivalent.

Description
Introduction to cogeneration; cogeneration technologies; issues and applications; introduction to energy storage; types; applications in renewable energy and conventional systems; economic analysis.

MENG 5265 - CFD and Turbulence Modeling (3 cr.)

Prerequisites
Undergraduate level knowledge of:
i) fluid properties, fluid flows with and without friction, duct flows, Bernouli's equation and continuity equation; heat and mass transfer.
ii) numerical analysis including solution of sets of algebraic linear equations, and P.D.E.s employing F.D.; programming in MATLAB or any other language.

Description
Introduction to CFD, basic equations of Flow, FV method, SIMPLE algorithm and variants. Turbulence modeling. Introduction to state of the art Fluid Flow Simulation codes; application to

case studies.

When Offered
Offered in Fall

MENG 5266 - Solar Radiation and Energy Conversion (3 cr.)

Prerequisites
University level heat transfer, thermodynamics, trigonometry and calculus. Computer usage proficiency in use of EXCEL or MATLAB

Description
Characteristics of solar radiation and relative motion of Earth and Sun; beam incidence angles; sun-path diagrams and collector shading; clear sky models; isotropic and anisotropic diffuse radiation models; utilizability. Solar thermal energy conversion with emphasis on the design, performance and selection of solar thermal technologies such as: tracking and stationary solar concentrators, solar water heaters and systems, solar thermal power plants, solar ponds, and solar updraft towers.

MENG 5270 - Applied Control, Vibration and Instrumentations (3 cr.)

Prerequisites
Instructor Consent.

Description
Feedback control systems and role of sensors. Process modelling and identification. Linear system response in time domain, Routh-Horwitz stability criteria. PID controllers design and implementations. Root locus: analysis, design, lead/lag compensators. Frequency response methods and analysis. Vibrations of multi-degree-of-freedom and continuous systems, introduction to finite element vibrations analysis, response to periodic and arbitrary inputs, passive and active vibration control, applied vibration measurement and analysis. Sensors: characteristics, physical properties and usage. Industrial automation and sensors. Measurement and uncertainty. Study of various techniques for sensor integration. Common instrumentation networks. Remote instrumentation for monitoring and control. Future prospect of instrumentations and intelligence.

MENG 5271 - Robotics: Kinematics, Dynamics and Control (3 cr.)

Prerequisites
Instructor Consent.

Description
Robot mechanisms, End-effector mechanisms, Actuators and drives, Sensors. Robot forward and inverse kinematics. Differential motion and Jacobian (Velocities and forces). Simulation software and analysis. Acceleration and Inertia, Robot dynamics. Trajectory generation and control of robot manipulators. Robot planning and control. Task oriented control, Force compliance control. Robot programming, Robot work cell design and work cycle analysis. Robot vision, Teleoperation and Interactive haptics. Closed-Loop Kinematic chains, Parallel-link robot kinematics. Non-holomonic systems, Legged robots.

Cross-listed
Same as RCSS 5201.

MENG 5272 - Embedded Real Time Systems (3 cr.)

Prerequisites
Instructor Consent.

Description
Fundamentals of embedded control system design, embedded processor architecture and operation. General overview of existing families of micro-controllers, DSPs, FPGAs, ASICs. Selected embedded 8/16/32 processor architectures, and programming. Real- time, resources and management, I/O, Virtual memory and memory management. Concurrency, resource sharing and deadlocks. Scheduling theory. Real-time programming and embedded software. Real-time kernels and operating systems. Bus structure and Interfacing. Programming pervasive and ubiquitous embedded system. Designing embedded system. Discretization and implementation of continuous-time control systems. Networked embedded systems and integrated control.

Cross-listed
Same as RCSS 5202.

MENG 5273 - Modern Control Design (3 cr.)

Prerequisites
Instructor consent.

Description
Basic linear system response: Analysis in time domain, stability analysis, Routh- Horwitz stability criteria of LTI. Feedback analysis and design continuous-time systems on the basis of root locus: analysis, design, lead/lag compensators, and Control synthesis in frequency domain: (Bode response, Nyquist stability criteria, sensitivity and design). Control design concepts for linear multivariable systems using state variable techniques. State space representation and transition matrix. Control system design in state space: controllability, pole method and pole placement design, observer/observability and compensators design. Optimal observer based feedback. Lyapunov Stability. The solutions to LQR problem, Kalman filtering problem. LQG and LTR based design methods. Discrete-time systems and computer control.

Cross-listed
Same as RCSS 5203.

MENG 5274 - Autonomous Robotics: Modeling, Navigation and Control (3 cr.)

Prerequisites
Instructor Consent.

Description
Autonomous and Mobile robots, Locomotion concepts and mechanisms, Degrees of mobility and steering. Non holonomic concept and constraint. Wheeled mobile robots: Kinematic and dynamic models. Trajectory generation and Control methods. Sensors, sensor models and perception. Mapping and knowledge representations. Control architectures and Navigation: Planning, Subsumption, Potential field, Motor Schemas, Probabilistic, Learning from observations and Reinforcement learning. Relative and absolute localization. Navigation and localization techniques. SLAM (Simultaneous Localization and Mapping). Multi robotic system: navigation, cooperation and autonomy.

Cross-listed
Same as RCSS 5221.

MENG 5910 - Independent Study in Engineering (3 cr.)

Description
Independent study in various problem areas of engineering may be assigned to individual students or to groups. Readings assigned and frequent consultations held.

Notes
(Students may sign for up to 3 credits towards fulfilling M. Sc. requirements).

MENG 5930 - Advanced Topics in Engineering (3 cr.)

Prerequisites
Prerequisite: consent of instructor.

Description
Topics to be chosen every year according to specific interests.

Repeatable
May be taken for credit more than once if content changes.

MENG 5980 - Capstone Project (3 cr.)

Description
Students are required to attend the library and writing modules of ENGR 5940 and to undertake an engineering project approved by the chair of the supervisory committee, which consists of the student advisor and two additional faculty members. A final report is submitted and orally defended in the presence of the supervisory committee.

MENG 5981 - Research Guidance Thesis (3 cr.)

Prerequisites
ENGR 5940

Description
Consultation on problems related to student thesis.

Repeatable
Must be taken twice for credit.

MENG 6241 - Stochastic Simulation (3 cr.)

Prerequisites
Graduate level knowledge of probability, statistics and stochastic processes.

Description
Continuous and discrete event Simulation models, random number generation, relevant probability distributions, replications, transient and steady-state conditions, design of simulation experiments, statistical analysis of results, data and file management, stochastic queues, simulation languages.

MENG 6255 - Continuum Mechanics (3 cr.)

Prerequisites
MENG 3505

Description
Mechanics of deformable bodies, finite deformation and strain measures, kinematics of continua and global and local balance laws. Thermodynamics of continua, first and second laws. Introduction to constitutive theory for elastic solids, viscous fluids and memory dependent materials. Examples of exact solutions for linear and hyper elastic solids and Stokesian fluids.

When Offered
Offered in fall.

MENG 6261 - Sustainability of Thermal Systems (3 cr.)

Description
Energy systems; energy demand; energy audit; sustainable development; energy efficiency; energy management.

MENG 6262 - Advanced Transport Phenomena (3 cr.)

Prerequisites
MENG 3602 ,MENG 4606 and CFD course covering numerical solutions of flow equations.

Description
Mass, momentum, and energy transport; kinetic theory of transport properties; analytical and approximate solutions to the equations of change; boundary layer theory; turbulence; simultaneous heat and mass transfer; over-all balances.

MENG 6263 - Advanced Measurements in Thermofluids (3 cr.)

Description
Pressure measurements instruments - Velocity measurements techniques - Introduction to laser - Types of lasers - LDV and PIV technique for flow field - Rayleigh - Raman - LIF for radicals - Imaging techniques for 2-D and 3-D measurements - Test cases.

MENG 6270 - Nonlinear and Adaptive Control (3 cr.)

Prerequisites
Consent of instructor.

Description
Introduction to the analysis and design of nonlinear control systems. Linearization of nonlinear systems. Phase-plane analysis, Lyapunov stability analysis. Design of stabilizing controllers. Properties of adaptive systems, Adaptive control and real-time parameter estimation, Deterministic self-tuning regulators, model reference control, Adaptive observers, model reference adaptive control, gain scheduling controller modeling. Stability of adaptive control systems.

Cross-listed
Same as RCSS 5233.

MENG 6930 - Advanced Selected Topics in Mechanical Engineering (3 cr.)

Prerequisites
Consent of instructor.

Description
Topics to be chosen every year according to specific interests of faculty and students. May be taken for credit more than once if content changes.

Notes
May be taken for credit more than once if content changes.

MENG 6980 - Research Guidance Dissertation (3 cr.)

Description
Consultation on problems related to student thesis. To be taken 11 times for credit.

Middle East Studies

MEST 4210 - Individual Study and Selected Readings (1-3 cr.)

Prerequisites
Prerequisite: Consent of instructor and department on the basis of a well-defined proposal.

Description
Guided reading, research, and discussion based on a subject of mutual interest to a student and faculty member.

MEST 4301 - Special Topics in Middle East Studies (3 cr.)

Description
Selected topics to be investigated under the guidance of a faculty member, may be offered as a seminar.

Repeatable
May be repeated for credit if content changes.

MEST 5201 - A Critical Introduction to Middle East Studies (3 cr.)

Description
Required for all MA students in Middle East Studies. Introduces major debates in several disciplines of Middle East area studies: the history and politics of Orientalism; modernization theory; area studies as a field of knowledge; gender as a category of analysis; economic and political development; international relations and US Middle East policy; contending understandings of Islamism.

When Offered
Offered in fall.

MEST 5202 - Interdisciplinary Seminar in Middle East Studies (3 cr.)

Prerequisites
Prerequisite: completion of 24 credit hours toward the degree or consent of program director.

Description
Required for all MA students in Middle East Studies. Reading, discussion and intensive writing about cutting edge scholarly literature on: the nature of modernity, colonialism and social science, gender and colonialism, nationalism, the nature of "national economies", the politics of realist literature, economic development, the character of autocracy and political liberalization.

When Offered
Offered in spring.

MEST 5280 - Selected Topics (3 cr.)

Description
Problems discussed may vary depending on instructor and students needs. Course is offered only if participating departments do not offer an equivalent course. Focus will be announced prior to registration.

When Offered
Offered only occasionally.

MEST 5281 - Independent Study and Readings (3 cr.)

Prerequisites
Pre-requisites: completion of one semester and Program approval required.

Description
Guided individual readings and/or research on a subject of mutual interest to the student and faculty member.

When Offered
Offered in fall and spring.

MEST 5289 - Comprehensives (no cr.)

Description
This course provides a forum for an independent review of the main concepts of the program' core subject areas in preparation for the comprehensive examination. The student will take a written examination at the conclusion of the course and must receive a passing grade to be successful. An oral examination may be required in addition to the written examination. The comprehensive examination may be repeated once. A student who fails the comprehensive examination a second time would be dismissed from the degree program at the end of the semester in which the examination was retaken.

**Students who need to complete a comprehensive exam as part of the requirements of their program must enroll in MEST 588/5289 - Comprehensives (no cr.)

When Offered
Offered in fall and spring.

MEST 5298 - Research Methods (3 cr.)

Description
A seminar designed to help students formulate and execute an MA thesis proposal.

MEST 5299 - Thesis (no cr.)

Description
Supervision in the preparation and writing of the master's thesis.

When Offered
Offered in fall and spring.

Migration & Refugee Studies

MRS 5101 - International Refugee Law (3 cr.)

Description
This course introduces the international refugee law regime and the background and historical context from which foundational concepts emerged. The bulk of the course is spent on the 1951 Refugee Convention and its Protocol, as well as the expanding mandate of UNHCR. The course considers some of the contradictions and dilemmas of international refugee law and takes into account, developments in related areas of international human rights law, international humanitarian law and migration law. This course is required for all students seeking the MA or Diploma in Migration and Refugee Studies.

Cross-listed
Same as LAW 5218.
When Offered
Offered in the fall.

MRS 5112 - Psychosocial Issues in Forced Migration (3 cr.)

Description
The course explores the psychosocial dimensions of forced migration including ethno-cultural. Concepts of well-being, sources of stress and coping, the impact of forced migration on child development, psychosocial consequences of torture and sexual victimization, and the interaction of trauma and bereavement. Culturally, appropriate mental health assessment, community-based intervention programs, methods of program evaluation, and ethical issues in working with refugee populations will be discussed.

Cross-listed
Same as PSYC 5112.

When Offered
Offered in spring.

MRS 5200 - Introduction to Migration and Refugee Studies (3 cr.)

Description
Drawing on interdisciplinary approaches in history, political science, sociology, economics and psychology, this introductory course examines the causes and consequences of population movements, and provides basic background , terminology and concepts for further studies in this field. It offers an overview of migrants' trajectories across national boundaries, analyzes migrants' integration and their transformative impact on as well as contribution to host societies. It examines the networks of relations migrants may maintain with their home countries. It also looks at the role of policies and practices of the humanitarian regime in shaping the experience and addressing the challenges faced by refugees, asylum seekers, and returnees.

When Offered
Offered in fall.

MRS 5202 - Migration & Refugee Movements in the Middle East and North Africa (3 cr.)

Description
The course offers a systematic review of international migration and refugee movements to, through and from, the Middle East and North Africa (MENA) over the last decades. It addresses their trends, causes and consequences for individuals and societies, and stresses the universality of international mobility determinants, but the specificity of the context in which they operate in the MENA, combining insecurity engendered by wars and civil conflicts with acute international inequalities of economic, social and political opportunities.

The course starts with concepts and theories, then addresses the various facets of cross-border mobility in the MENA: voluntary and forced migration; migration and labor markets; financial transfers (remittances and investment) and migration; the mobility of skills and the brain drain / brain gain nexus; transnational communities, diasporas and their countries of origin; families and communities left behind; MENA states' policies on emigration; integration of migrant and refugee communities; EU and Gulf states' policies on asylum and immigration; transit migration; trafficking in migrants; return migration.

When Offered
Offered in Fall.

MRS 5203 - International Migration and Development (3 cr.)

Description
The course provides an overview of recent literature and debates concerned with the relationships between migration and development. Migration and development are related issues. On the one hand, development is a determinant of migration. International differentials in development, mainly economic (labor-, income- and capital-related), but also political (state- and society-related), will be reviewed. These elements apply at the sending end as push factors (underemployment and unemployment; poverty; poor access to welfare; low rewards to skills; poor governance, political or civil instability, etc.) and at the receiving end as pull factors (jobs availability; higher incomes; social security; higher education; networks of previous migrants; etc.). On the other hand, migration has an impact on development. International mobility of workers and their family members can work for, or against, development. Debates on the impact of development include the following:
Destination Countries:

Considering whether migrant workers compete with or complement local labor? Do they reduce or increase average incomes/wages? Contribute to or drain host country welfare services?
Origin Countries:

While migrant remittances provide for better housing, education and health of families left behind, their impact on the local and national economy is much debated. Do they boost production or imports? Do they create employment or deter entry into the local labour market? Do they lead to sustainable patterns of development? Do they further the access to credit of local communities and migrants themselves? To what extent do migrants establish businesses as a result of their earnings abroad? To what extent do governments foster development along with migrant communities and host countries with migration-induced development through confidence building, infrastructure and skills training? Under what conditions does migration of skills result in a brain drain or a brain gain for sending countries? In both sending and receiving countries, different patterns of migration: circular, return, temporary, permanent, regular/irregular may have different impacts on development.

MRS 5204 - Research Methods in Migration and Refugees Studies (3 cr.)

Description

The course seeks to provide an orientation to the primary methodological issues that need to be addressed when conducting both primary and secondary research. The course addresses the cross-disciplinary and trans-national aspects of research that place extra demands on research methods in data collection, sampling, comparative policy framework analysis, usage of terminology, ethical considerations, comparisons of discourses and ideological representations in a sometimes contested and controversial field of inquiry. Designed with both quantitative and qualitative approach, this course addresses challenges and dilemmas that researchers confront when collecting and interpreting data in studies of refugees and migration. This course further addresses in-depth analysis regarding accessibility of relevant data (ranging from use of statistics as well as access to social fields), how to handle ethical issues; how to develop intersectional analysis, and specific questions related to multi-strategy research design; ethical issues and how to handle after-use questionnaire and checklist.

When Offered
Offered in the spring.

MRS 5205 - Palestinian Refugee Issues (3 cr.)

Description
This inter-disciplinary course will be an opportunity for students to engage directly with the major practical and theoretical issues connected with Palestinian refugees, critically assessing the historical, political, legal and ideological forces that have shaped their turbulent circumstances.

MRS 5206 - Comparative Migration Policies (3 cr.)

Description
Countries at both ends of the migration process develop migration policies that govern a variety of issue areas. In countries of destination, migrants essentially contribute to economic activity. Therefore, their policies address issues such as demand for migrant workers, admission criteria, recognition of skills, non-discrimination and integration of migrant workers and their families, curbing irregular migration, border control and patrolling sea lanes, the role of business and trade union and international cooperation. Countries of origin are mainly concerned with releasing pressures over their labor markets, the protection of migrants, their welfare, maximizing the contributions of migrants to development through financial remittances and their productive use, effective return migration policies, migration statistics, and international cooperation. The course will examine how a selected number of countries of origin and

destination formulated and implemented policies in the respective areas of concern to the two sets of countries.

MRS 5208 - Special Topics in Migration and Refugee Studies (3 cr.)

Description
Topics discussed vary every semester and depends on the instructor. The topic of the course will be announced prior to registration.

When Offered
Offered annually.

MRS 5209 - Migration, Integration and Citizenship (3 cr.)

Description
This course will examine the challenges brought to citizenship theory by migrations and migrants integration. Diverging definitions of citizenry embody and express distinctive understandings of nationhood, be it state-centered and assimilationist, ethnocratic and 'differentialist' or multiculturalist, that are deeply rooted in the political and cultural history of different nations. The course will focus on the various conceptions of citizenship and how they influence the integration and the migrants' identity (re)constructions well as, to a certain extent, trigger a redefinition of receiving countries 'cultural and political norms, including the very meaning of Nation-State.

MRS 5214 - Psychosocial Interventions for Forced Migrants and Refugees (3 cr.)

Prerequisites
MRS 5112

Description
This course exposes students to diverse interventions for addressing psychosocial needs faced by refugees and forced migrants across the continuum from emergency responses to resettlement programs, such as psychological first aid, mental health interventions and community building, and community stigma reduction. Students will gain experience with local organizations. Ethical, professional, and cultural issues will be interwoven throughout the

course.

Cross-listed
PSYC 5246

MRS 5228 - Migration in International Law (3 cr.)

Description
This course explores international law's impact on state migration control, as well as its broader influence on the global phenomenon of migration. States and other actors have increasingly sought to manage aspects of migration at the international level to ensure orderly and humane control of population movements. This course examines the different ways in which international law engaged with migration through, amongst other things, general principles of international law, human rights and labor law, international criminal law, the laws of armed conflict, as well as trade and environmental law.

Cross-listed
Same as LAW 5228.

MRS 5284 - Practicum: Internship or Research (3 cr.)

Prerequisites
Permission of Advisor.

Description
Internship for four to six months in an organization working with migrants/refugees or active involvement on an institutional research project that examines elements of population movements. The work is assessed on the basis of a written report and discussions with faculty advisor.

MRS 5299 - Research Guidance and Thesis (3 cr.)

Description
Supervision in the writing of the thesis.

When Offered
Offered in fall and spring.

Music

MUSC 1011 - Vocal Methods (3 cr.)

Description
An overview of the skills required to sing well. Training in vocal production, some sight-singing, and study of songs chosen by the instructor and by the student.

Notes
Requires no previous musical training.

MUSC 1099 - Selected Topics for Core Curriculum (3 cr.)

Description
A course that addresses broad intellectual concerns and is accessible to students from any major or class level. The course is offered as part of the Freshman Level of the Core Curriculum.

When Offered
Offered occasionally

MUSC 1800 - Individual Lessons in Voice or an Instrument (1 cr.)

Prerequisites
MUSC 1805

Students with prior knowledge of music theory and notation may take a MUSC 1805 exemption exam in the first week of the semester. Those who pass are exempted from taking MUSC 1805. Contact the Academic Registration Specialist in the Department of the Arts and/or the Music Program Director to learn more.

Concurrent
MUSC 1805
Description
This course is for individual lessons (one-to-one instruction between teacher and student) in an

instrument or voice. Twelve one-hour lessons in the semester. Students are expected to practice a minimum of one hour every day. Students will perform before a jury of teachers for the final examination. A lab fee will be assessed for each semester of instruction.

When Offered
Offered in fall and spring
Repeatable
The course may be repeated multiple times for credit.
Notes
Students are encouraged to contact the Academic Registration Specialist in the Department of the Arts in the first week of classes to arrange the first meeting with their instructor. Students in MUSC 1800 will be assigned the appropriate teacher at the discretion of the Music Program. Students may register for more than one section of MUSC 1800 in the same semester.

MUSC 1805 - How to Read Music (3 cr.)

Description
Instruction in how to read music and the fundamentals of western music theory.

When Offered
Offered in fall and spring
Notes
Students taking MUSC 1800 - Individual Lessons in Voice or an Instrument (1 cr.) are required to take this course in the same semester, or pass the How to Read Music placement exam. Alternatively, students can take this course as a prerequisite to the course listed directly above.

MUSC 2000 - World Music (3 cr.)

Description
Study of the musical practices and cultures of representative diverse nations and peoples.

Notes
Requires no previous musical training

MUSC 2010 - The Songs of the Americas (3 cr.)

Description
An introduction to music of the Americas (North America, South America, Central America and the Caribbean), focusing on culture, society, diffusion, genre and performance. Understanding of basic principles of ethnomusicology as well as study of discrete sets of musical practices, from historical to contemporary.

Notes
Requires no previous musical training.

MUSC 2099 - Selected Topics for Core Curriculum (3 cr.)

Prerequisites
RHET 1010

Description
Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

When Offered
Offered occasionally.

MUSC 2200 - Introduction to Music (3 cr.)

Description
The course will consist of two parts. The first is an introduction to the fundamental elements of music, including harmony, melody, timbre, rhythm and tempo, dynamics, articulation, and texture; a brief survey of the doroob, i.e., the rhythms of Arab music; and to the instruments of the Western orchestra and the Arab takht, and to the human voice. The second is a survey of great music in the Western tradition and of some of the composers who created it, together with a brief look at some of the great musical performers and composers of Egyptian music in the 20th century.

When Offered
Offered in fall and spring.

MUSC 2300 - Introduction to Music Technology (3 cr.)

Description
Introduction to the study of acoustics and digital audio, music synthesis, MIDI, music sequencing, and basic recording techniques. Students will produce and record audio projects with available facilities.

Notes
Preference will be given to declared music minors. No prior musical training is required.

MUSC 2301 - Music Production Using Digital Audio Workstations I (3 cr.)

Description
This course is an introduction to audio production environments using digital audio workstations (DAWs). Students will explore a specified DAW (i.e. Pro Tools or Logic X) and discuss the fundamentals of audio production workflows. Students will also explore the fundamentals of the specified DAW, audio workflows, media management and signal routing. Students will apply their understanding of the processes used in a typical DAW to their own productions.

MUSC 2303 - Microphone Techniques (3 cr.)

Prerequisites
MUSC 2300 and MUSC 2301

Description
A brief history of microphone development and a general introduction to microphone theory and design, with an overview of wireless microphones. Detailed study of microphone polarity, frequency response, and amplitude ability, which are the features that define how the microphone captures sound and its suitability to different instruments. In addition, the course will study microphone placement, and microphone preamplifiers and accessories, in recording in studio and in live performances.

MUSC 2400 - Western Music Theory I (3 cr.)

Prerequisites
MUSC 1805 Or a passing grade on the MUSC 1805 exemption exam.

Concurrent
MUSC 2401
Description
Students will review the elementary concepts of pitch and rhythmic notation. The course quickly progresses through scale construction, pitch intervals, chord construction, and fundamental concepts of counterpoint and instrumentation. By the end of the semester, students will be able to compose two-part counterpoint, spell triads and seventh chords, and will begin to understand four-part notation and scoring.

When Offered
Offered in fall.

MUSC 2401 - Sight-Singing and Aural Skills I (1 cr.)

Prerequisites
MUSC 1805 or a passing grade on the MUSC 1805 exemption exam.

Concurrent
MUSC 2400
Description
Students will review the elementary concepts of pitch and rhythmic notation. By the end of the semester, they will be able to sing melodies in major and minor tonalities, articulate rhythms in simple and compound meters, and vocally arpeggiate triads and seventh chords. Students will practice dictation as well as aural skills.

Notes
Students must be able to match pitch within a 1-octave range.

MUSC 2450 - Arab Music Theory I (3 cr.)

Prerequisites
MUSC 1805 or a passing grade on the MUSC 1805 exemption exam.

Concurrent
MUSC 2451
Description
Students will review the elementary concepts of jinses (Arab tri-, tetra-, or pentachord), maqamat (Arab music modes), and doroob (Arab rhythm) notation. The course quickly progresses through maqam construction, jins intervals, darb construction, and fundamental concepts of Arab music texture and instrumentation. By the end of the semester, students will be able to compose Arab music simple forms, spell jinses and maqamat, and will begin to understand maqamat families and how to modulate between maqam family members, and the takht (traditional Arab music ensemble) notation and scoring.

MUSC 2451 - Maqam I (Arab Music Sight-Singing and Aural Skills) (1 cr.)

Prerequisites
MUSC 1805 or a passing grade on the MUSC 1805 exemption exam.

Concurrent
MUSC 2450
Description
Students will learn the elementary concepts of Arab pitch and rhythmic notation. By the end of the semester, students will be able to sing Arab melodies in different maqams, and articulate doroob in simple and compound meters. Students will practice dictation as well as aural skills.

MUSC 2620 - Arab Music Ensemble (1 cr.)

Description
The class will constitute a vocal and instrumental performing ensemble, which will rehearse during class periods.

When Offered
Offered in fall and spring.
Repeatable
The course may be repeated multiple times for credit.
Notes
Rehearsal will lead to a concert performance of the music prepared.

MUSC 2630 - Guitar Ensemble (1 cr.)

Description
The class will constitute a performing ensemble, which will rehearse during class periods. Work will also include the techniques of playing, and some study of how to read music.

Repeatable
Course may be repeated multiple times for credit.

MUSC 2640 - Chamber Music Ensemble (1 cr.)

Prerequisites
Permission of the ensemble director.

Description
A chamber music ensemble consists of approximately two to eight vocalists and/or instrumentalists. This may be a jazz combo, a takht, a vocal ensemble, or conventional chamber ensemble for Western art music (e.g. string quartet or piano-violin duo). Students will perform before a jury of teachers or in a concert (with permission of the teacher) for the final examination. A lab fee will be assessed for each semester of instruction.

Repeatable
The course may be repeated multiple times for credit.

MUSC 2650 - Rehearsal/Performance Practicum (1 cr.)

Prerequisites
Permission of the instructor

Description
Rehearsal and performance with a suitable music ensemble other than those offered at AUC, by arrangement with the Director of the Music program. The Director or another AUC faculty member designated by the Director will assess the final performance and assign the final grade. Director or designee may request a juried final exam in case of need.

Repeatable

The course may be repeated multiple times for credit.

Notes

Offered by special arrangement with the Music Program with the permission of the Director.

MUSC 2660 - Chamber Singers (1 cr.)

Prerequisites

Consent of the director.

Description

The class will constitute a chorus, which will rehearse during class periods. Work will also include the techniques of singing, and some study of how to read music.

When Offered

Offered in fall and spring.

Repeatable

The course may be repeated multiple times for credit.

Notes

Rehearsal will lead to a concert performance of the music prepared.

MUSC 2670 - Cairo Choral Society (1 cr.)

Prerequisites

Permission of the instructor

Description

A community chorus dedicated to the study, promotion, and performance of the great choral works in the Western musical tradition. It presents performances with professional soloists and orchestra at various venues in Egypt. Students registered in this course will participate in all rehearsals and performances in the semester.

Students may also choose to join the chorus on a not-for-credit basis.

When Offered

Fall and spring semesters

Repeatable

The course may be repeated multiple times for credit.

MUSC 2850 - Individual Instruction for Piano Proficiency I (1 cr.)

Prerequisites
MUSC 1805 (Maybe taken concurrently)

Concurrent
MUSC 1805
Description
Individual (one-to-one) lessons in piano, intended for music technology majors and music performance majors or minors whose primary instrument is not piano. Twelve one-hour lessons in the semester to teach basic piano technique (including playing triads and scales) and beginner repertoire. Students will perform before a jury of teachers for the final examination. A lab fee will be assessed for each semester of instruction.

When Offered
Offered in fall and spring.

MUSC 2851 - Individual Instruction for Piano Proficiency II (1 cr.)

Prerequisites
MUSC 2850

Description
Individual lessons in piano, intended for music technology or music performance majors or minors whose primary instrument is not piano. Twelve one-hour lessons in the semester. Students will perform before a jury of teachers for the final examination. A lab fee will be assessed for each semester of instruction.

Notes
Students who pass the MUSC 2851 Piano Proficiency Exemption exam are exempted from taking this course. Students desiring to take the exam should contact the Music Program Director.

MUSC 3099 - Selected Topics in Music (3 cr.)

Prerequisites
Prerequisite: consent of the instructor.

Description
Offered occasionally.

Repeatable
May be repeated for credit if content changes.

MUSC 3110 - Diction for Singers in the Western Tradition (3 cr.)

Prerequisites
At least two semesters of MUSC 1800, or permission of the instructor.

Description
Study of the fundamentals of diction for singing in German, French, Italian, and English. Students will learn the International Phonetic Alphabet (IPA) and perform repertory in these languages in class. Open to students outside the voice concentration, including non-majors, with permission of the instructor. However, some prior study of voice is required.

MUSC 3150 - Western and Arab Musical Instruments (3 cr.)

Prerequisites
MUSC 1805 or a passing grade on the MUSC 1805 exemption exam.

Description
Fundamentals of percussion, brass, woodwind, string, keyboard, and electric and electronic instruments in Western and Arab music. The course will explain how sound is produced in these instruments, looking at pitch and decibel ranges as well as playing techniques. Also, this course will examine the structure of music ensembles, from the orchestra and Arab takht to modern and contemporary ensembles in Western and Arab music.

MUSC 3200 - Music in the Western Tradition: Ancient to Classical (3 cr.)

Prerequisites
MUSC 1805 or MUSC 2400

Description
The study of western music in its historical and cultural context, from its ancient Mediterranean roots to through the classical era European Enlightenment, with an emphasis on representative great works and their composers.

MUSC 3250 - Music in the Arab Tradition (3 cr.)

Description
Study of Arab music and song in its historical and cultural context, from its origins to the present day.

Notes
No previous experience in Arab music is required.

MUSC 3300 - Music in the Western Tradition: Romantic to Contemporary (3 cr.)

Prerequisites
MUSC 1805 or MUSC 2400

Description
This course will survey the literature of western music in its cultural and historical context, from the Romantic era to the present day, with an emphasis on representative great works and their composers.

MUSC 3302 - Digital Audio / MIDI Lab (1 cr.)

Prerequisites
MUSC 2300

Description

A production course where students are required to fulfill a series of concert recordings and personal projects to build up a typical workflow to be prepared to work in the professional field. This will include live-stream production concert recordings and personal projects. Each credit accumulation will lead to more responsibilities in managing the production workflows and

managing the students from the lower levels.

Repeatable
This course can be repeated to fulfill the series of concert recordings and personal projects.

MUSC 3304 - Music Production for Visual Media (3 cr.)

Prerequisites
MUSC 2200 MUSC 2300 and MUSC 2301

Description
This course is designed to introduce students to a range of techniques and technologies used in producing audio for visual media. The course will examine theory and practice used in music production for TV, film, web, video games, and art installations. Students will acquire skills in digital music production for visual media by working on projects which simulate actual professional productions. The course also provides the terminology of audio production and the basic theoretical framework upon which production skills can be built.

MUSC 3305 - History of Electronic Music (3 cr.)

Description
A study of the history of Electronic music, in brief prior to 1945, and in more detail thereafter, touching on the different schools of Electronic music in Paris (Musique Concrete), Cologne (Elektronische Muzik), Milan, and America, the use of the Voltage-Controlled synthesizer, tape composition, live Electronic music, Rock and Pop Electronic music, the Digital Revolution and MIDI. In addition to history, the course will explore significant Electronic musical instruments, forms and composers.

MUSC 3306 - Sound for Picture Production (3 cr.)

Prerequisites
MUSC 2301

Description

This course provides an in-depth, interactive study of sound and its relationship to picture. Topics will include post production areas relative to time code, synchronization, workflow, data interchange, sound recording and editing, lip-syncing and voice over tracks using ADR (Automatic Dialog Replacement), creating special effects with Foley, routing structures, sound mixing, and delivery methods. All of the above will be first described in class lectures and then applied practically in projects.

MUSC 3308 - Live Sound Reinforcement (3 cr.)

Prerequisites
MUSC 2300.

Description
The course is intended to provide understanding of the fundamentals of Live Sound and knowledge of the various components, equipment, tools, history and theory, as well as sound system design concerns commonly encountered in the real world. The practical part consists of setting-up a basic sound reinforcement system and hands-on operation. Previous experience or knowledge in music, recording or live sound is not expected nor required, although it is a plus.

MUSC 3400 - Western Music Theory II (3 cr.)

Prerequisites
MUSC 2400 and MUSC 2401

Concurrent
MUSC 3401
Description
Students will review the concepts of counterpoint and harmony. The course will cover instrumentation, phrase, tonic and dominant, embellishing tones, chorale harmonization and figured bass, phrase structure and expansion, diatonic sequence, and intensifying the dominant. Students will learn to analyze, compose, and write about music topics covered in class.

MUSC 3401 - Sight-Singing and Aural Skills II (1 cr.)

Prerequisites

MUSC 2400 and MUSC 2401

Concurrent
MUSC 3400
Description
Students will review the intermediate concepts of pitch and rhythmic notation. By the end of the semester, they will be able to sing more complex melodies in major and minor tonalities, and develop their ability to perform simple and compound meters, aurally identify all intervals, and study phrasing, cadences, and the harmonic expansion of secondary chords.

MUSC 3450 - Arab Music Theory II (3 cr.)

Prerequisites
MUSC 2450 and MUSC 2451

Concurrent
MUSC 3451
Description
Review of the instrumental and song forms of Arab music. The course will explore maqam construction, jins intervals, darb construction, and fundamental concepts of Arab music texture and instrumentation. By the end of the semester, students will be able to analyze Arab music instrumental and song forms and extract darbs and maqamat from them. In addition students will be able to compose Arab music, modulating between maqamat and changing darbs in the same piece.

MUSC 3451 - Maqam II (Arab Music Sight-Singing and Aural Skills) (1 cr.)

Prerequisites
MUSC 2450 and MUSC 2451

Concurrent
MUSC 3450
Description
Study of pitch and rhythmic elements of Arab music at an advanced level. By the end of the semester, students will be able to sing complex Arab melodies in different maqamat and their families, and articulate and decorate darbs in simple and compound meters. Students will practice dictation as well as aural skills.

MUSC 3500 - Interactive Sound Design (3 cr.)

Prerequisites
MUSC 2300

Description

This course explores the principles and practice of digital sound synthesis and interactive audio. Students will learn key techniques such as subtractive, additive, FM, wavetable, granular, and sampling while developing both technical skills and creative approaches to sound design. Emphasis is placed on programming, timbre creation, and integrating synthesis into musical and multimedia contexts. Additionally, through hands-on work with Max and related environments, students will design interactive audio systems, build real-time performance tools, and experiment with sensor-based and generative sound interactions. The course encourages exploration of responsive sound design for installation, game, and performance applications, bridging artistic expression and digital technology.

When Offered
Offered in fall or spring.

MUSC 3520 - Music Pedagogy (3 cr.)

Prerequisites
MUSC 1805 or a passing grade in the MUSC 1805 exemption exam.

Description
Preparation for a professional career that balances performance and teaching. Coursework will involve the analysis of instrumental and vocal methods, technique manuals, and various publications about best practices in music pedagogy. Topics will include early childhood education methods and group instruction, as well as how to coordinate beginning, intermediate and advanced level lessons and studios for adults.

MUSC 3900 - Independent Study (1-3 cr.)

Prerequisites
Open to students with a minimum B average.

Description
In exceptional circumstances, some advanced music students may arrange, with departmental approval, to study beyond the regular course offerings.

When Offered
Offered in fall and spring.
Repeatable
May be repeated for credit if content changes.

MUSC 4308 - Music Production Using Digital Audio Workstations II (3 cr.)

Prerequisites
MUSC 2300 and MUSC 2301

Description
A continuation of Music Production Using Digital Audio Workstations (DAWs) I, the course will teach students advanced sound engineering techniques. For example, students will learn how to adapt their workstation (including the rams, processor, and hard disks) to accommodate large recording sessions without facing problems of slow processing which can affect quality, by adjusting the playback engine and delaying compensation. The course will also explore different types of recording and advanced editing techniques, and develop essential techniques for using plug-ins in the mixing and mastering stages.

MUSC 4309 - Digital Mixing Techniques (3 cr.)

Prerequisites
MUSC 2200 ,MUSC 2300 and MUSC 2301

Description
The course will examine the theory and practice of the music mixing process and mixing analysis, using a digital audio workstation (DAW) application, Protools v.8.0.1, currently the market standard. Students will study the different hardware (like studio monitors or speakers), software (i.e. the Protools application), and processes (like meters and signal flow), involved in digital mixing, the use of equalizers, dynamics processors, effects (reverb, chorus and delay) and pitch corrections, and the different types of panning, automation and bouncing of final mixes.

MUSC 4400 - Western Music Theory III (3 cr.)

Prerequisites
MUSC 3400 and MUSC 3401

Concurrent
MUSC 4401
Description
In-depth study of phrase rhythm and motivic analysis, tonicizing scale degrees other than V, modulation to closely related keys, binary and ternary forms, modal mixture and chromatic mediants and submediants, and the Neapolitan sixth and augmented sixth chords. Students will leave this course with ability to analyze, compose, and write about all of the topics covered in Western Music Theory I-III.

MUSC 4401 - Sight-Singing and Aural Skills III (1 cr.)

Prerequisites
MUSC 3400 and MUSC 3401

Concurrent
MUSC 4400
Description
Review of advanced concepts of pitch, harmony, and rhythmic notation. By the end of the semester, students will be able to sing melodies in all major and minor tonalities, articulate rhythms in simple, compound, and irregular meters, arpeggiate harmonic progressions include augmented and other predominant harmonies and modulation, and handle various chromatic techniques.

MUSC 4900 - Advanced Seminar (3 cr.)

Prerequisites
Prerequisite: Consent of the instructor.

Description

In-depth examination of special advanced topics in music determined by the special interest and expertise of the faculty.

When Offered
Offered occasionally.
Notes
Designed for advanced students.

MUSC 4980 - Capstone Final Recital (3 cr.)

Prerequisites
Six sections of MUSC 1800

Description
Twelve one-hour individual lessons in voice or an instrument, constituting final preparation for a solo recital at least forty minutes in length, of repertory chosen by the instructor, normally presented in the senior year. A jury will attend the recital and assign the final grade for the course, which is required for graduation with the Bachelor of Musical Arts degree. Students are expected to practice at least three hours each day. A lab fee will be assessed.

Nanotechnology

NANO 5200 - Nanomaterials, Synthesis, Processing and Applications (3 cr.)

Description
This course provides a comprehensive introduction to nanomaterials, their synthesis, properties, processing techniques and applications. The coverage addresses top-down and bottom-up approaches including nanomaterials ranging from small particles and isolated clusters to nanostructured materials, multilayer and consolidated bulk products, thin film and coatings. Their chemical, mechanical, optical and magnetic properties will be introduced.

NANO 5202 - Simulation and Modeling for Nanoscale Materials and Systems (3 cr.)

Description
Principles of modeling structures and processes at the nanometer scale, including meshing techniques, finite element analysis, and molecular dynamics. Simulation of Materials Science-

based or Mechanics-based modeling methods employed; mechanical response of nanostructured materials; Modeling methods including electronic structure, molecular dynamics and Monte Carlo techniques are included.

Cross-listed
Same as MENG 5232.

NANO 5203 - Advanced Testing and Characterization Techniques (3 cr.)

Description
Experimental techniques in the study of materials including quantitative measurements for the characterization of micro and nanostructured bulk and thin film materials using optical, electron and atomic force microscopy; Secondary ion mass spectroscopy (SIMS), Auger Electron Spectroscopy (AES), Rutherford Backscattering (RBS); EDX; X-ray diffraction and differential scanning calometry for thermal analysis. Advanced and conventional testing techniques for characterization of the physical, optical, magnetic and mechanical properties of micron and Nanomaterials and devices.

Cross-listed
Same as MENG 5228.

NANO 5204 - Fabrication of Nanomaterials For Films And Devices (3 cr.)

Description
This course will cover different techniques implemented for preparing thin films such as chemical vapor deposition, physical vapor deposition (evaporation, sputtering, pulsed laser deposition, electron beam, etc), and molecular beam epitaxy. In addition, different techniques for enhancing the physical properties of materials will be covered. This will include post-laser treatments, metal induced crystallization, thermal treatments, etc.

Cross-listed
Same as MENG 5231.

NANO 5205 - Nanochemistry (3 cr.)

Description
This course introduces students to the basics of chemistry at the nanoscale, and would entail a general introduction to the nano world; physico-chemical considerations for properties at the nanoscale (band structures, typical and useful "nano effects" etc...); basic synthesis and fabrication methods for nano structures (top-down and bottom up approaches).

Cross-listed
CHEM 5205

NANO 5206 - Management and Economics of Nanotechnology (3 cr.)

Description
The course will discuss various aspects of management and economics of nanotechnology. It would include: (1) Nanotechnology's role in society and particularly within a fast changing world. (2) Nanotechnology is the next big driver of wealth creation within corporations and countries. (3) Product and Production Nanotechnologies, (4) Enhancing creativity and managing innovation in the context of nanotechnology. (5) Nanotechnology Life Cycles (The Curves of Technological Progress, Nanotechnology & Market Interactions and Products & Process Life Cycles)

NANO 5207 - Advanced Nanophysics (3 cr.)

Prerequisites
Consent of instructor

Description
Nanophysics fundamentals, physics of nanostructures, crystalline nanostructures, light-matter interaction on the nanoscale, quantum nanostructures, diffraction and scattering from nano objects.

Cross-listed
PHYS 5207

NANO 5210 - Advanced Quantum Mechanics (3 cr.)

Prerequisites
PHYS 4042 or equivalent.

Description
Fundamental concepts of quantum mechanics including the harmonic oscillator, the hydrogen atom, electron spin and addition of angular momentum. Qualitative and approximation methods in quantum mechanics, including time-independent and time-dependent perturbation theory, variational methods, scattering and semiclassical methods. Applications are made to atomic, molecular and solid matter. Systems of identical particles including many electron atoms and the Fermi gas.

Cross-listed
Same as PHYS 5243.
When Offered
Offered in fall and spring.

NANO 5221 - MEMS/NEMS Technology and Devices (3 cr.)

Prerequisites
Consent of instructor.

Description
Basic MEMS/NEMS fabrication technologies, various transduction mechanisms such as piezoelectric, pyroelectric, thermoelectric, thermionic, piezoresistive, etc. The theory of operation of few sensors including infrared detectors, radiation sensors, rotation and acceleration sensors, flow sensors, pressure and force sensors, and motion sensors. An introduction to different techniques for analyzing experimental data.

Cross-listed
Same as PHYS 5277,RCSS 5242 .
When Offered
Offered in fall

NANO 5222 - Advanced Semiconductor Physics (3 cr.)

Description
This course will cover three main topics namely: Near-equilibrium transport in the presence of small gradients in the electrochemical potential or temperature, with or without the application of a small magnetic field.Physics of carrier scattering and how the microscopic scattering processes are related to macroscopic relaxation times and mean-free-paths. High-field transport in bulk semiconductors and "non-local" transport in sub-micron devices.

Cross-listed
Same as PHYS 5236.

NANO 5232 - Nanocomposite Science and Technology (3 cr.)

Description
This course is designed to provide fundamental understanding of emerging nanocomposite materials science and technology. The topical areas to discuss include synthesis of various nanoscale reinforcements, such as nanowires, nanotubes, and inorganic nanoparticles; fabrication and processing techniques of nanocomposites; dispersion of nanoreinforcements; interfacial adhesion; mechanical and functional properties of nanocomposites including gas/moisture barrier characteristics, electrical and magnetic properties, thermal properties and flame retardancy; molecular dynamic simulations; design and applications of nanocomposites.

NANO 5233 - Materials for Energy Conversion and Storage (3 cr.)

Description
This course will focus on advanced electrochemical energy conversion and storage systems including fuel cells, lithium-ion batteries, and supercapacitors; Hydrogen storage; Advanced thermal storage . Through the journey in this course, students are anticipated to understand why and how these systems are advantageous in renewable energy applications.

Cross-listed
Same as MENG 5234.

NANO 5241 - The Chemistry of Nanostructures (3 cr.)

Prerequisites
NANO 5205

Description
This course addresses the synthesis and chemical properties of the different categories of nanostructures such as carbon NANOubes/nanorods/ etc..., fullerenes, colloids, Self-assembled monolayer structures (SAMs), dendrimers and other macromolecules, oxide and inorganic nanotubes/fibers/rods/etc. For each category examples of applications would be giving to demonstrate the applicability of the properties discussed.

Cross-listed
CHEM 5241

NANO 5242 - Nanoelectrochemistry (3 cr.)

Prerequisites
NANO 5205

Description
This course addresses the fundamentals of electrochemistry, and their application to the synthesis of nanostructures, together with applications (e.g. sensors, fuel cells, batteries, electrolysis, photovoltaic cells, reduction of carbon dioxide, environmental remediation, water disinfection, ect...). Characterization and analysis techniques would also be addressed.

Cross-listed
CHEM 5242

NANO 5251 - Nanotechnology Applications in Construction Materials (3 cr.)

Description
This course covers the use of nanotechnology in studying the particle shape, size and composition of conventional and advanced construction materials on a sub micro level. The correlation between the nano level characteristics and the mechanical properties as well as the

durability of the materials is studied. Composition and arrangement of crystalline structures and chemical composition of materials are examined to yield materials of superior properties.

NANO 5252 - Nanotechnology in Studying Damage and Failure in Structures (3 cr.)

Description
The course employs nanotechnology to study submicro cracks, flaws and damage indications in structures through examining the materials used. The course aims at providing early prediction of the life time of structures and nano-based prediction of the damage patters and hence around decision on repair intervention and the technique used.

NANO 5261 - Advanced Solid-State Devices (3 cr.)

Prerequisites
Graduate standing in engineering and physics. Electromagnetics, vector algebra, differential equations, and MATLAB programming.

Description
This course covers crystal structures, band gap theory, ionic equilibrium theory, fundamentals of carrier transport, compound semiconductors III-V. This course will make special emphasis on the properties of various types of junctions (p-n junctions, heterojunctions, metal-semiconductor junctions) leading to various electronic devices such as field effect transistors (FETs), metal oxide-semiconductor FETS (MOSFETs), high electron mobility transistors (HEMTs), etc. Short Channel effects and nanoscale phenomena will be emphasized throughout the course and their impact on device modeling in analog and digital circuits.

Cross-listed
Same as ECNG 5210.

NANO 5262 - Advanced Integrated Circuit Design (3 cr.)

Description
The objective of this course is to provide the students with the knowledge of designing emerging nanoelectronic devices and using these devices to build future computing systems. After an introduction to CMOS devices and circuits, the course will cover CMOS design and

simulation topics. More attention will be paid to the applications of these devices in the implementation of future computers. The memory and logic architectures that take advantage of the properties of the emerging devices will be discussed. Particularly, signal integrity and timing issues, as well as power consumption will be emphasized.

Cross-listed
Same as ECNG 5218.

NANO 5271 - Bionanotechnology (3 cr.)

Description
This course covers the use of various nanostructures for ultrasensitive detection of DNA, bacteria and viruses. Recent techniques for detection of single biomolecules that offers superior advantages over the conventional bulk measurements will also be presented. This course will also cover the use of different nanoparticles such as nanocrystals and gold nanoparticles for optical imaging, as hyperthermia agents for cancer therapy, and the development of smart drug delivery nanocarriers.

Cross-listed
BIOT 5271

NANO 5910 - Independent Studies (1-3 cr.)

Prerequisites
Consent of supervisor, graduate standing.

Description
In the exceptional circumstances, some senior graduates with the approval of the program director may arrange to study beyond the regular course offerings. Guided reading for research and discussions based on a subject of mutual interest to the student and the responsible faculty member. The student demonstrates his/her achievement by a report and by passing a subsequent examination.

NANO 5930 - Selected Topics in Nanotechnology (3 cr.)

Prerequisites
Consent of the faculty advisor.

Description
Topics to be chosen every year according to specific interests. Maybe taken for credit more than once if content changes.

NANO 5980 - Research Guidance Thesis (3 cr.)

Prerequisites
SCI 5940

Description
Consultation on problems related to student thesis
Must be taken at least twice for credit.

NANO 6121 - Nanophotonics (3 cr.)

Description
The course will cover: Maxwell's equations, light-matter interaction, dispersion, EM properties of nanostructures, etc., Photonic crystals Photonic crystal fibers, Photonic nanocircuits Metal optics, manipulating light with plasmonic nanostructures, plasmonic nano-sensors, near-field optics, metamaterials, negative refractive index and super-resolution.

Cross-listed
PHYS 6121

NANO 6230 - Biomaterials (3 cr.)

Description
Lectures will include: materials for biomedical applications and their biocompatibility; design at a molecular scale of materials used in contact with biological systems, including biotechnology and biomedical engineering; methods for biomaterials surface modification and characterization. Other topics include analysis of protein adsorption on biomaterials; tissue and

organ regeneration; design of implants and prostheses based on control of biomaterials-tissue interactions; drug delivery, and cell-guiding surfaces.

Cross-listed
Same as MENG 5235.

NANO 6240 - Nanoporous Materials (3 cr.)

Prerequisites
NANO 5205

Description
Review of the field of nanoprous materials. Synthesis, characterization and surface modification. Adsorption and separation processes, biological and catalytic applications. Nanoporous materials for the removal of pollutants in the gaseous and liquid phases.

Cross-listed
CHEM 6240

NANO 6242 - Nanocatalysis (3 cr.)

Description
This course covers the characterization and reactivity of nanoscale catalysts. Concept of nanocatalysis. Reaction Engineering. Modeling in Nanocatalysis. Nanocatalytic membranes for gas to liquid conversion. Nanocatalysis for dehydrogenation of hydrocarbons. Charge transport in Molecular and Nanoscale systems. Synthesis of Nanoceramic catalysts by chemical and physical routes.

NANO 6910 - Independent Studies (1-3 cr.)

Prerequisites
Consent of superviosr, graduate standing.

Description
In exceptional circumstances, some senior graduates with the approval of the program director may arrange to study beyond regular course offerings. Guided reading for research and

discussions based on a subject of mutual interest to the student and to the responsible faculty member. The student demonstrates his/her achievement by submitting a report and by passing a subsequent examination.

NANO 6980 - Research Guidance Dissertation (3 cr.)

Description
Consultation on problems related to student thesis. To be taken 11 times for credit.

Petroleum Engineering

PENG 2013 - Petroleum Industry Overview (1 cr.)

Description
Overview and history of the petroleum industry and petroleum engineering; nature of oil and gas reservoirs, exploration and drilling, formation evaluation, well completions and production, surface facilities, reservoir mechanics, improved oil recovery; overview of refining, petrochemical industry and downstream processing of oil and gas.

When Offered
Every semester

PENG 2400 - Energy Industry Overview (1 cr.)

Description
Introduction to the fundamentals of petroleum and renewable energy resources and related business activities. Introduction to the trends of energy mix with emphasis on challenges, environmental impacts, and integrated solutions.

When Offered
Offered every semester.

PENG 3011 - Petroleum Geology and Exploration (3 cr.)

Prerequisites

SCI 2005

Description

History of petroleum geology, the occurrence of petroleum, source rock, migration and accumulation, reservoir rocks, reservoir pore space, reservoir fluids, stratigraphic traps, structural traps, hydrodynamic traps, combination traps, subsurface geology and mapping, and reservoir appraisal. Exploration engineering, gravity surveying, magnetic surveying, seismic data acquisition, seismic data. Introduction to logging and formation testing, hydrocarbon indicators, exploration risk, and analysis.

When Offered

Offered in fall and spring

PENG 3021 - Reservoir Rock Properties (2 cr. + 1 cr.)

Prerequisites

SCI 2005 and PENG 2400

Description

Basic petrophysical properties of reservoir rocks including porosity, permeability, fluid saturation, electrical properties, surface tension, wettability, capillary pressure, relative permeability, compressibility, and Other SCAL properties. Routine and core analysis and SCAL reports. Laboratory measurement of the reservoir rock properties.

When Offered

Once a year.

PENG 3022 - Petrophysics and Fluids Lab (1 cr.)

Prerequisites

PENG 3211 (or Concurrent) and Concurrent with PENG 3021

Description

Lab safety and core plug preparation, measurements of porosity, gas and liquid permeabilities, saturation, electrical properties of the rock, Dean stark and retort, surface tension (Amott Test), wettability, capillary pressure calculation, relative permeability, PVT analysis.

When Offered
Offered in spring or fall.

PENG 3111 - Drilling Engineering I (3 cr.)

Prerequisites
PENG 3021

Description

Basic concepts of, rig types, rig components, drilling tools, well head equipment, drilling fluids, practices of well drilling operations, drilling techniques and well control equipment. Fundamental concepts of rotary drilling bits, drill string, bottom-hole assembly, casing, cementing operations. Completion concepts, types, equipment, and work-over operations.

When Offered
Once a year.

PENG 3112 - Drilling Engineering I Lab (1 cr.)

Prerequisites
Concurrent with PENG 3111

Description
Mud program design, Mud rheology tests (e.g. viscosity, Mud Balance, sand content, etc.); well control simulation, bits dulling, bits selection.

When Offered
Every semester

PENG 3211 - Reservoir Fluids (2 cr. + 1 cr.)

Prerequisites
PENG 2013 or PENG 2400

Description
Basic petroleum fluid properties including petroleum fluid composition, phase behavior, phase envelopes, classification of reservoir fluids, ideal gas and real gas laws, z-factor, dry gas properties, modification for wet gases, black-oil PVT properties definition, PVT properties from correlations, oil formation volume factor and solution gas oil ratio corrections, and formation water properties. Fluid sampling. PVT and other reservoir fluid properties laboratory measurement and reporting.

When Offered
Every semester.

PENG 3215 - Reservoir Engineering Fundamentals (3 cr.)

Prerequisites
PENG 3211, PENG 3021 or concurrent

Description
This course covers the main methods to estimate oil-in-place and reserves such as volumetric methods and material balance. It explains the different natural drive mechanisms in reservoirs focusing on saturated, undersaturated, and gas reservoirs. The course covers the basics to understand the differences between steady-state, pseudo-steady state, and unsteady-state flow. Water influx calculations are also introduced. The course also introduces waterflood as a displacement mechanism.

When Offered
Every semester.

PENG 3225 - Natural Gas Engineering (3 cr.)

Prerequisites
PENG 3215

Description
The increased Importance of natural gas as an energy resource; The dynamics of Natural Gas Industry and differences from the oil industry; Properties of Natural Gas (wet gases and gas condensates); Estimating gas reserves for wet gases and gas condensates; fluid flow in Gas Reservoirs, p squared approach and Pseudo-Pressure m(p) approach; flow of gas through tubing

and production pipes; introduction to gas processing.

When Offered
Every other semester

PENG 3227 - Formation Evaluation (3 cr.)

Prerequisites
PENG 3011 and PENG 3021

Concurrent
PENG 3228
Description

This course provides the students with the understanding of the modern well logging tools, measurements, and interpretation. It starts with Borehole environment, environmental corrections of each measurement then the petrophysical evaluation of formation properties using the logging measurements. The evaluation part of the course covers the Clay volume and types, formation porosity and types, fluids distributions and types, rock mechanical properties, core to log calibration.

When Offered
Every semester.

PENG 3228 - Formation Evaluation Laboratory (1 cr.)

Concurrent
PENG 3227
Description
This course provides the students with hands-on applications on the material covered in the formation evaluation course. The applications are performed on industry petrophysical software(s). It includes Data Loading and Extracting, Borehole Environmental Corrections of all measurements for all service companies and Petrophysical Evaluation of all formation properties. The evaluation part of the laboratory covers the Clay volume and types, formation porosity and types, fluids distributions and types and core to log calibration.

When Offered
Every semester

PENG 3310 - Well Completion and Workover (3 cr.)

Prerequisites
PENG 3111

Description
Introduction and definition of well completion and workover, Types of completions and pros and cons of each type (OH, CH, CH cemented, Linear, ...etc), Surface (SWHs) and Downhole components of completions (equipment) (tbg, packers, bridge plugs, SSDs, SSSV, SCSSV, ...etc) including the tubing design calculations, Coiled tubing/Wireline and coiled tubing operations, Stimulation (frac, acidizing and acid fracs), carbonate and sandstone acidizing, Perforation, Sand control/gravel pack, Formation damage, Workover fluid, Design completion of directional wells, Well completion economics, Lift systems.

When Offered
Every other semester

PENG 3311 - Petroleum Production I (3 cr.)

Prerequisites
PENG 3211

Description
The course covers production system components: inflow, outflow, and choke performance. Inflow Performance Relationships (IPR) for oil and gas wells are included. Nodal analysis of the entire production system is reviewed. Formation damage in vertical and horizontal wells and introduction to Well stimulation and artificial lift methods are covered. A review of production problems is covered.

When Offered
Every semester

PENG 3411 - Thermodynamics (3 cr.)

Prerequisites
ENGR 2122 and CHEM 1005

Description
Thermodynamic fundamentals, concepts, and definitions, first and the second law of thermodynamics, volumetric properties of fluids, thermodynamics of flow processes, solution thermodynamics, phase equilibria, and flash calculations.

When Offered
Offered in fall or spring.

PENG 3415 - Principles of Energy Engineering (3 cr.)

Prerequisites
PENG 2400

Description

Fundamentals of material balances: single-phase systems, and multiphase systems. Energy and energy balances: balances on nonreactive processes, balances on reactive processes, computer-aided balance calculations, balances on transient systems. Energy storage systems.

When Offered
Offered occasionally.

PENG 3430 - Health, Safety, Environment and Sustainability (3 cr.)

Prerequisites
PENG 2013 or PENG 2400

Description
The fundamental aspects of health and safety at work and identification of different types of workplace hazards and their control systems. Explores different sustainability topics such as climate change, global warming, energy, water, waste, socially responsible business, CO2 emissions, and capture and sequestration among others. Examples of creative and integrated strategies on local, national, and global environmental levels (to create a sustainable future); are

shown through environmental impact assessment of oil and gas projects.

When Offered
Every other semester.

PENG 4015 - Exploration Methods (3 cr.)

Prerequisites
PENG 3011

Description
Fundamental seismic principles and its exploration methods, oil exploration and sub-surface imaging. the elastic wave equation, the acquisition and processing of seismic reflection data and seismic, tomography data. Introduction to seismic stratigraphy, seismic inversion and attribute analysis, role of seismic in reservoir properties and facies modeling. Data acquisition, processing, and interpretation of gravity data, Data acquisition, processing, and interpretation of magnetic data. Introduction to electromagnetics and their applications in petroleum industry.

When Offered
Offered occasionally

PENG 4121 - Drilling Engineering II (3 cr.)

Prerequisites
PENG 3111

Description
Rig systems; advanced drilling tools; well control and BOP equipment and calculations; casing design; cementing calculations and operations; bits design; well drilling operations techniques and process optimization for directional drilling, horizontal drilling, multilateral drilling; predicting and over-coming drilling problems (e.g. hole stability, lost circulation, swelling, kicks, etc.); controlled drilling, geo-steering; offshore drilling; well survey; MWD and LWD tools; well trajectory calculations.

When Offered
Every other semester.

PENG 4125 - Advanced Well Construction (3 cr.)

Prerequisites
PENG 4121

Description
Advanced well planning; rig selections; well cost estimation; advanced well design of horizontal and multi-lateral wells; deep water drilling techniques; HPHT wells; drilling operations optimizations; well control predictions and solutions (e.g. relief wells); cement evaluation; advanced geo-steering design and operations; drilling software.

When Offered
Offered occasionally

PENG 4223 - Reservoir Simulation and Modeling (2 cr. + 1 cr.)

Prerequisites
ENGR 3202 and PENG 4224

Description
Reservoir simulation fundamentals, input and output for reservoir simulation, understanding reservoir simulation, simulation equations, IMPES method, introduction to reservoir simulation matrix solvers, history matching, reservoir simulation prediction, types of simulators, static models, grid models, exercise on the use of a commercial simulator in single well and full field applications.

When Offered
Every other semester

PENG 4224 - Well Testing (2+1 cr.)

Prerequisites
PENG 3215

Description
Diffusivity equation, skin factor, radius of investigation, types of well tests, semi-log analysis for

drawdown and build up tests, gas well testing, dimensionless variables, type curve analysis, derivative plots, hydraulically fractured wells, DST, well test design. Data Analysis and Modeling Exercises using the state of the art well testing software.

When Offered
Every other semester

PENG 4225 - Secondary and Tertiary Recovery (3 cr.)

Prerequisites
PENG 3215

Description
The course presents all aspects of enhanced oil recovery (EOR) processes of chemical, miscible, and thermal. It covers secondary recovery by water flooding and calculations of reservoir heterogeneity using V-number and Lorenz techniques. It also presents how to use mobility ratio and capillary number to maximize oil recovery for mature oil fields under development.
The course also presents principles, application, and screening depleted oil reservoir for application of different EOR processes. More materials will be assigned as technical report for updating the participants with edge technology and EOR actual field cases.

When Offered
Every other semester

PENG 4226 - Energy Economics (3 cr.)

Prerequisites
PENG 2400 and senior standing.

Description

The dynamics of energy prices; Demand and supply for primary energy sources; Energy business and structure of energy companies; Time value of money; Cash flow analysis, Inflation, interest rate, CAPEX and OPEX; Investments choices and performance metrics (Yardsticks); Reserves and resources classification; International contracts and concession agreements; Risk analysis in energy projects

When Offered

Every other semester.

PENG 4227 - Reservoir Description and Characterization (3 cr.)

Prerequisites

PENG 3227

Description

This course provides the students with the methodologies and basics of the reservoir description and characterization for both clastics and carbonates. The course integrates geology, reservoir rock properties and formation evaluation to better characterize the reservoir. The in depth understanding of core description, depositional environment from both core and logs and the comparison between core and logging calculations are the core of this course. The geo-statistics part of this course concentrates on building and analyzing the histograms and the variograms and their roles in the reservoir characterization.

When Offered

Every other semester.

PENG 4229 - Unconventional Reservoirs (3 cr.)

Prerequisites

PENG 3215 and PENG 3227

Description

This course provides the students with the understanding of the unconventional reservoirs from definitions to evaluation and production. The course includes classifications of unconventional reservoirs, signature of unconventional reservoirs on logging measurements, evaluation of hydrocarbon potential. Total organic carbon (TOC) evaluation and determination, pyrolysis analysis of S1, S2, S3 for evaluation of hydrocarbon saturation are covered. The course also covers evaluation of rock mechanical properties including brittleness, drilling unconventional reservoirs.

When Offered

Offered occasionally.

PENG 4313 - Oil and Gas Transmission and Storage (3 cr.)

Prerequisites
PENG 3311

Description
Pipe line transport, pipe line design, calculation of the pressure drop through the pipes, fittings, valves, and bends, pipe line construction, pumping and boosting stations, gas transmission lines, metering, pipe line automation, tanker and railroad transportation, pipeline safety, regulations, specifications of the pipeline for onshore and offshore networks, examples of international pipelines, pipeline operations and maintenance, crude oil storage type, temporary storage of crude oil, crude oil stock calculations.

When Offered
Offered every other semester.

PENG 4314 - Petroleum Production II (2+1 cr.)

Prerequisites
PENG 3311

Description
Artificial Lift (AL) methods theory. Artificial lift applicability, screening criteria, operation, design, and field applications. Well stimulation methods which involve matrix acidizing, hydraulic fracturing, and acid fracturing. Software applications for production system modeling and artificial lift design are introduced.

When Offered
Every other semester

PENG 4320 - Artificial Lift Methods (3 cr.)

Prerequisites
PENG 3311

Description

Overview of the artificial lifting methods screening criteria and their applicability, description of each method components, operation, design and field applications including Electric Submersible Pump (ESP), Gas Lift, Rod Pumping, Hydraulic Jet Pump and Progressive Cavity Pump. Problem solving sessions include full design calculations for ESP, Rod Pumping, Gas Lift, and Hydraulic Jet Pump applications. State of the art software application will be used in sessions for simulating gas lift and ESP. Modeling their performance and conducting full design and trouble shooting of each system.

When Offered
Offered occasionally

PENG 4324 - Surface Facilities (3 cr.)

Prerequisites
PENG 3311 and PENG 3411

Description
Oil and gas separation systems, mechanical design of pressure vessels, crude emulsion treatment, stabilization and desalting of crude oil, produced water treatment, and gas processing plants that include: gas specifications, gas test methods, natural gas liquids, gas treating, gas gathering and gas injection.

When Offered
Every other semester.

PENG 4325 - Well Stimulation (3 cr.)

Prerequisites
PENG 3311 and PENG 3227

Description
Well stimulation involves matrix acidizing, hydraulic fracturing proppant, and acid fracturing in vertical and horizontal wells. New applications in the multistage frac, unconventional frac, Candidate selection, treatment design and execution of acidizing and hydraulic fracturing treatments. selection of acid additives, lab testing, QA/QC, and treatment evaluation

When Offered
Offered occasionally

PENG 4333 - Energy Efficiency and Management (3 cr.)

Prerequisites
PENG 3411

Description

Design of efficient production and use of energy, predominantly strategies in the oil and gas business. It covers the development of Transport, water, and energy efficiency policies. Technical and economic calculations of energy efficiency, management and optimization of energy costs, and environmental impact assessment in the oil and gas industry. Implementation of international standards in energy management supported with successful and industry best practices.

When Offered
Offered occasionally.

PENG 4421 - Renewable and Alternative Energy (3 cr.)

Prerequisites
PENG 2400 and senior standing.

Description

Principles of Renewable and Alternative Energy Systems: Wind, Solar, Biogas, Geothermal, Fuel Cells, and Hydrogen Technologies. Economic Aspects; Efficiency; Introduction to Nuclear Energy. Connection to Grid, Smart Grids and intermittency.

When Offered
Offered occasionally.

PENG 4423 - Energy and Environmental Sustainability (3 cr.)

Prerequisites

PENG 2400 and senior standing.

Description

Energy use and energy patterns in modern society; Resource estimates; Engineering analysis of energy systems; Managing carbon emissions; Environmental impact and protection, Environmental remediation technologies. Supply and Demand of energy; Energy Scenarios and modeling; Energy Policy and Auditing; Sustainable development.

When Offered

Offered occasionally.

PENG 4525 - Petrochemical Technology (3 cr.)

Prerequisites

PENG 4511 or (CHEM 3003 and CHEM 3522)

Description

Ethylene and propylene production, petrochemical products, thermoplastics, thermosetting resins, fertilizers from natural gas, gas to liquid processes, equipment design and calculations.

Notes

This course can only be offered to PENG students matriculated before fall 2015 or to CHEM students.

PENG 4920 - Independent Studies in Petroleum and Energy Engineering (1-3 cr.)

Prerequisites

Consent of instructor and department chair on the basis of a well-defined proposal.

Description

Independent study in various problem areas of Petroleum and Energy Engineering may be assigned to individual students or groups. May be repeated for credit if content changes. Readings assigned and frequent consultations held.

PENG 4930 - Selected Topics in Petroleum and Energy Engineering (1-3 cr.)

Prerequisites
Senior standing.

Description
Petroleum Topics chosen from: Petroleum or Gas exploration, drilling production, simulation, recovery, and gas liquefaction. Field study including assessment, evaluation, feasibility and economic studies will be required.
Energy Topics chosen from: Alternative Energy resources including solar, wind, biomass, fuel cells, nuclear or geothermal energy. Field study including assessment, evaluation, feasibility and economic studies will be required.

When Offered
Offered fall and spring.
Repeatable
May be repeated for credit more than once if content changes.

PENG 4950 - Industrial Training and Professional Ethics (1cr.)

Prerequisites
A minimum of 12 credits of PENG courses.

Description
Each student is required to spend a minimum of eight weeks of industrial training in Egypt or abroad. A detailed report is presented and evaluated. Students are also introduced to professional ethics, various moral issues and codes of ethics.

When Offered
Offered fall and spring.

PENG 4980 - Senior Project I (1cr.)

Prerequisites
Consent of Department Chair

Description

In the capstone projects, students are required to work with field data that cover the life cycle of a petroleum reservoir. Students perform several analyses and design different system components in the areas of geology, formation evaluation, and drilling. Report submission and oral presentation are required.

When Offered
Offered in fall and spring

PENG 4981 - Senior Project II (2 cr.)

Prerequisites
PENG 4980

Description
Senior Project II is a continuation of the capstone project. Students perform analyses and integrate the results of Senior Project I to design different system components in the areas of reservoir engineering, production engineering, and surface facilities. Report submission and oral presentation are required.

When Offered
Offered in fall and spring

PENG 5111 - Advanced Drilling (3 cr.)

Prerequisites
Consent of instructor.

Description
The drilling operations and the various factors affecting them. Advanced drilling techniques such as under-balanced drilling, mud cap drilling, etc. surge and swab pressure, situational problems, smart wells, and real-time monitoring and adaptive control. the wellbore stability, optimization of drilling operations, and penetration rate.

PENG 5112 - Well Control (3 cr.)

Prerequisites

consent of instructor

Description
The course covers the basics of well control such as causes of kick, well pressure control importance and strategies, well blow out and its consequences, well control methods and equipment, and some relevant case studies are presented. The course also covers the kill mud calculations, and problems & solutions related to well control system.

PENG 5131 - Applied PVT and EOS Modelling (3 cr.)

Prerequisites
consent of instructor

Description
Review of principles of PVT data in petroleum reservoirs. Classification of reservoir fluids and PVT data models. PVT laboratory experiments and quality control. Deriving PVT data from correlations and ANN models. Deriving PVT data form laboratory reports. Advanced PVT experiments for gas injection processes and EOR. Introduction to flow assurance. PVT experiments for flow assurance. Principles of cubic EOS. Fluid characterization and plus fraction modeling. Flash calculations. EOS tuning. Compositional gradients. Separator optimization.

PENG 5134 - Reservoir Management (3 cr.)

Prerequisites
consent of instructor

Description
Definitions of reservoir management. Elements of reservoir management. Reservoir management processes. Economic evaluation of reservoirs. Technologies enabling reservoir management. Static and dynamic reservoir models. Field Development Plans (FDP) and redevelopment. Integration between subsurface and surface components. Digital oil field. Case histories.

PENG 5136 - Advanced Reservoir Simulation (3 cr.)

Prerequisites

consent of instructor

Description
Classification of reservoir simulators. Chemical reservoir simulators to handle polymers and surfactants. Applications of chemical reservoir simulation in simulating EOR processes. Compositional simulators and their applications. Thermal simulators and their applications. Dual porosity/dual permeability simulators. Applications of dual porosity simulators. Assisted history matching concepts. Specific data inputs required for different simulator types.

PENG 5141 - Advanced formation evaluation (3 cr.)

Prerequisites
consent of instructor

Description
Review of basic formation evaluation using triple and quad combo. Review of basic interpretation techniques; clay volume, porosity, saturation and permeability. Fracture identification and quantification using both resistivity and acoustic imaging tools. Porosity, Pore sizes, fluid, and permeability evaluations using NMR tools. A direct measurement of water saturation using a combined dielectric tool and NMR. Integration of core description, routine core analysis and SCAL in all aspects of the course and the evaluation techniques.

PENG 5142 - Cased-hole logging (3 cr.)

Prerequisites
consent of instructor

Description
Cased-hole logging environment. Effect of casing and cement on cased-hole measurements and their environmental correction. Measurements of porosity through casing. Resistivity through casing. Saturation through casing using the SIGMA and the Carbon/Oxygen measurements. Evaluation methodology of water saturation behind casing. Borehole fluids evaluation using production logging. Three phase flow measurements and analysis.

PENG 5143 - Applied Techniques in Unconventional Reservoirs (3 cr.)

Prerequisites
Consent of instructor.

Description
Review of the basics of unconventional reservoirs. Identifications of unconventional potential and source rocks. Pyrolysis analysis and unconventional reservoir quality determination. Unconventional reservoirs evaluation; porosity, adsorption, saturation and permeability. Calculations of hydrocarbon in place using pyrolysis and wireline logging techniques. Drilling unconventional reservoirs. Completion and Production methods of unconventional reservoirs using different multi-stages fracturing techniques.

PENG 5144 - Geostatistics (3 cr.)

Prerequisites
consent of instructor

Description
Statistics, data analysis and transformation. Spatial variables. Variograms and variogram modeling. Uncertainty. Deterministic and stochastic models. Estimation and simulation. Kriging. Co-Kriging. Simulation methods. Using trends in geological modeling. Static model construction. Upscaling of static models.

PENG 5221 - Advanced Production Engineering (3 cr.)

Prerequisites
consent of instructor

Description
The course covers petroleum production system, production from oil and gas reservoir, vertical lift performance, multiphase flow, surface gathering system, nodal analysis, well completion and formation damage, well stimulation techniques, artificial lift, and production related problem. In addition, a detailed study is offered on inflow performance relationships, horizontal, vertical and inclined multiphase flow correlations and mechanistic models. These are then used to determine the current and future performance of the well and the optimum size of the tubing and flow line as well as the optimum production strategy for the whole life of the well.

PENG 5222 - Petroleum Assets Evaluation (3 cr.)

Prerequisites
consent of instructor

Description
This course discusses concepts related to economic valuation of petroleum projects.
The fundamentals of discounted cash-flow analysis are covered in class with focus on petroleum projects. The course highlights the notion of risk quantification and its relationship to economic valuation. It discusses capital budgeting and project ranking process as well as sensitivity analysis of different factors on both the revenue side and the cost side (such as oil prices, cost of services, ... etc.). Relationships of subsurface reserves estimates to the economic valuation of a project is discussed, as well as the importance of subsurface reserves as a financial asset for the future existence of a petroleum company. The main types and elements of fiscal regimes are emphasized in the class with examples of cash flows for concessionary systems, production sharing contracts, as well as service agreements.

PENG 5232 - Advanced Well Testing (3 cr.)

Prerequisites
consent of instructor

Description
Theoretical background of pressure transient testing. Diffusivity equation. Solutions of diffusivity equation. Laplace solutions principles. Superposition in space and time. Phase redistribution. Deconvolution. Pressure transient test types. Applications of pressure transient tests. Multiphase well test analysis methods. Numerical well testing. DST analysis. Slug and impulse tests analysis. Repeat formation testers.

PENG 5233 - Enhanced Oil Recovery (3 cr.)

Prerequisites
consent of instructor

Description
The course introduces principles, mechanisms, and theories related to enhanced oil recovery,

either as improved secondary recovery or some form of tertiary oil recovery techniques. The fundamental concepts of steam injection, CO2 injection, chemical flooding, polymer flooding, microbial recovery, and miscible and immiscible flooding techniques are covered.

PENG 5235 - Compositional Simulation (3 cr.)

Prerequisites
consent of instructor

Description
Differences between black oil, modified black oil, and compositional simulators. Principles of composition simulation. Solution vectors and compositional simulation solution schemes. Construction of PVT models using EOS. Miscibility concepts. Treatment of compositional gradients. Problems with compositional simulation. Application of compositional simulation in CO2 injection.

PENG 5251 - Selected Topics in Fundamentals of Petroleum Engineering (1-3 cr.)

Description
Selected topics in fundamentals of petroleum engineering from geology, formation evaluation, drilling, production and reservoir engineering topics. The course is specifically designed to cover the missing fundamentals that some MS and MEng students may lack. This course will not be counted towards the credits required for MS or MEng degrees in Petroleum Engineering.

Repeatable
May be repeated for credit more than once if content changes.

PENG 5252 - Selected Advanced Topics in Petroleum Engineering (3 cr.)

Description
Selected advanced topics in petroleum engineering from geology, formation evaluation, drilling, production and reservoir engineering topics. The course is designed to introduce advanced topics and new technologies in the petroleum industry.

Repeatable
May be repeated for credit more than once if content changes.

PENG 5253 - Independent Study (3 cr.)

Description
Students with faculty/department approval may arrange to study topics beyond the regular course offerings. It can include guided reading for research and discussions based on a subject of mutual interest to the student and the responsible faculty member. The student demonstrates his/her achievement by submitting a report and/or by passing a subsequent examination.

PENG 5255 - Capstone Project (3 cr.)

PENG 5980 - Research Guidance Thesis (3 cr.)

Prerequisites
ENGR 5940

Description
Consultation on problems related to student thesis.

Notes
Must be taken twice for a total of 6 credits.

Ph.D. in Applied Sciences

PHDS 6888 - Doctoral Qualifying Examination (0 cr.)

Description

Ph.D. Qualifying Examination is to evaluate the students ability to analyze problems and synthesize solutions. It should demonstrate the ability of the student to interrelate basic concepts and ideas in her/his field of study. The qualifying examination is typically taken in the semester immediately following the completion of the coursework credit hours, but no later than during the fourth semester since admission into the program.

When Offered
Offered in fall and spring.

Ph.D. in Engineering

PHDE 6888 - Doctoral Qualifying Examination (0 cr.)

Description

Ph.D. Qualifying Examination is to evaluate the students ability to analyze problems and synthesize solutions. It should demonstrate the ability of the student to interrelate basic concepts and ideas in her/his field of study. The qualifying examination is typically taken in the semester immediately following the completion of the coursework credit hours, but no later than during the fourth semester since admission into the program.

When Offered
Offered in fall and spring.

Philosophy

PHIL 1099 - Selected Topics for Core Curriculum (3 cr.)

Description
Course addressing broad intellectual concerns and accessible to all students, irrespective to major.

PHIL 2010 - Truth, Lies, and Logical Reasoning (3 cr.)

Description
Truth, Lies, and Logical Reasoning aims to analyze and improve argumentation and reasoning as they occur in everyday life, to identify logical fallacies, and to critically examine common techniques of persuasion. The course examines logically valid forms and rules of inference, introduces deductive and inductive methods in ancient and modern logic, and elaborates the nature of definitions, categories and judgments. Students will mine their everyday lives, media, and various forms of public discourse for real-world examples of good and bad reasoning.

When Offered
Offered every year.

PHIL 2099 - Selected Topics for Core Curriculum (3 cr.)

Description
Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

When Offered
Offered occasionally.

PHIL 2100 - Philosophical Thinking (3 cr.)

Prerequisites
RHET 1010

Description

This course, through the study of representative figures from the history of philosophy, introduces the basic methods and aims of philosophical discourse, and develops the skills of critical thinking. It opens the broad field of philosophical questions; but, more fundamentally, it is a course in questioning as such, It is about the basic human desire to know. It is also about learning how to understand and how to be understood. It teaches students to listen to what others say, interpret what others have written, and take responsibility for one's own words. This is accomplished through reading texts of great intellectual distinction, patiently practising the art of interpretation without easy answers, and carrying out a sustained effort to write thoughtfully. This course encourages students to think independently, responsibly, and critically.

When Offered
Offered in fall and spring.
Notes

Course enrollment is restricted to freshman and sophomore students. Junior or Senior students who have not yet completed the course should consult with the Philosophy department office to inquire about manual enrollment procedures.

PHIL 2111 - Self and Society (3 cr.)

Description

What is 'the self'? What do we mean by 'consciousness' or 'personal identity'? Is the self a social being, or is it an entity within society that stands apart from it? Through selected readings drawn from the meeting-points and confrontations between philosophy and fields such as psychology, anthropology and sociology, this course investigates the nature of the self and its place within the plurality of selves we call society.

PHIL 2112 - Philosophy of Religion (3 cr.)

Description
Many religions include an intellectual and theoretical component that can be investigated independently of the religion itself. This course examines and clarifies some themes that arise from the rational investigation of the intellectual component of religion. Topics may include: reason and religious belief, proofs of the existence of God, the nature of religious language, the problem of evil, mysticism as a form of knowledge, and theological paradoxes (omnipotence, omniscience and free will, etc.)

PHIL 2113 - Introduction to Ethics (3 cr.)

Description
This course introduces moral philosophy, the attempt to provide systematic explanations of standards for human conduct. Can we determine what the right thing is for us to do? How does society set its normative rules? How is a normative discourse possible? Selected texts provide the relevant context in which these questions will be examined.

When Offered
Offered in alternate years.

PHIL 2117 - Political Philosophy (3 cr.)

Description
This course is an introduction to the history of political philosophy and addresses dominant issues central to political thinking in the Western tradition. Themes may include the question of justice, the exercise of power, the meaning of democracy, the freedom and rights of the individual, the circumstances of revolution, the roots of authority, and the role of violence. Course readings are drawn from figures such as Plato, Aristotle, Machiavelli, Hobbes, Locke, Rousseau, Mill, Kant, Hegel, Nietzsche, and Marx.

PHIL 2200 - Philosophy and Globalization (3 cr.)

Description
This course introduces the student to the phenomenon known as Globalization. The course will highlight a historical as well as systematic perspective. The approach is based on an interdisciplinary methodology that emphasizes the economic, political, social, religious, and moral aspects of globalization since 1492 (the discovery of America and the expulsion from Al Andalusia) up until the present wave of the globalization process. The course is designed for students from all majors, in order that they may gain a general view of globalization - but especially one from a philosophical perspective.

PHIL 3010 - Philosophy and Art (3 cr.)

Description
The course introduces the theme of beauty and issues of aesthetic value. Examples are drawn from areas such as literature, music, the plastic arts, and architecture.

PHIL 3014 - Literature and Philosophy (3 cr.)

Description
The course concentrates on the intersection of the literary mode with the philosophical quest in Eastern and Western writing. Students are trained to analyze philosophical myths, tales, poems and dialogues as well as grasp the symbolic structures and expository techniques of philosophers.

Cross-listed
Same as ECLT 3014.
Repeatable
May be repeated for credit if content changes

PHIL 3015 - Islamic Philosophy (3 cr.)

Description

A thematic study of how perennial questions about creation, mind, science, ethics, history and politics arose amid and were influenced by the unique cultural context of the Arab world in

dialogue with major monotheistic religious traditions. Discussions may include not only classical, but also post-classical and contemporary developments in philosophy in the Arab world.

Cross-listed
Same as ARIC 3405.
When Offered
Offered occasionally.

PHIL 3016 - American Philosophy (3 cr.)

Description
The course examines philosophy in North America, focusing on the central themes of democracy and pragmatism. A guiding question of the course will be: How is the democratic process embedded in the philosophic enterprise? The views of major thinkers such as Peirce, James, Royce, Santayana, Dewey, Quine, and Hartshorne will be examined.

Cross-listed
Same as AMST 3016

PHIL 3017 - Philosophy of Science and Technology (3 cr.)

Description

It has become a pervasive fact that science and technology have altered human abilities and experiences of the world. These changes have lead to new responsibilities for us, the creators and users of science and technology. First, we should aim at a better understanding of how science and technology work. Does science discover truth and create knowledge? How does this knowledge lead to technology? And how does technology influence the conduct of science? Second, we should also aim at understanding the impact of science and technology in society. How does science and technology influence and determine the behavior of individuals? What is their impact on the development of entire societies. How is the environment affected? Third, we should be aware of the normative aspects of using science and technology. Does the existence of technology legitimize its use? Are there principles to restrict the use of science and technology? This course will tackle these important questions to examine the interrelation between humans, science, and technology.

PHIL 3101 - Classical Philosophy (3 cr.)

Description
This course is a survey of the history of philosophy from its beginnings in Greece through the revival of Aristotelian learning in thirteenth century Europe. This is a long period of time, and philosophers had interesting and important things to say about all manner of topics, including science, logic, ethics, politics, religion, and art. Our goal in this course will be to explore some of the most important things that some of the most important philosophers from this era had to say. Authors to be discussed may include Plato, Aristotle, Augustine, Anselm, Averroes, Avicenna, and Aquinas. Topics to be discussed may include the nature of knowledge, the relationship between faith and reason, the theory of Forms, the nature of the good life, and the existence of God.

PHIL 3102 - Modern Philosophy (3 cr.)

Description
Philosophical progress played an essential role in the historical changes of the Enlightenment and the development of industrial society. This course focuses on some of the major schools and figures of Modern thought, which include Rationalists such as Descartes and Leibniz, Empiricists such as Locke and Hume, and/or pivotal thinkers such as Bacon, Rousseau, Hegel, Kant, and Marx.

When Offered
Offered every year.

PHIL 3104 - Knowledge and Reality (3 cr.)

Description

What is the fundamental structure of reality? What is reality really like? Why is there something rather than nothing? Is there a God? Do human beings have free will? Metaphysics is the study of questions like these. Epistemology is the study of the nature of knowledge. What is knowledge? Do we know anything? If so, how can we acquire more of it? In this class we will examine questions like these by reading classic texts both historical and contemporary. Students will be expected to read these texts carefully and charitably, while simultaneously being encouraged to think about them critically so as to draw their own conclusions.

PHIL 3200 - Philosophy of History (3 cr.)

Description
Philosophies of History offer a broad range of reflections on the historic dimension of our existence, i.e. on the fact that we understand ourselves in a temporal horizon of being-with-others. These reflections might prompt us to reflect on the genesis of notions such as 'universal history' or 'progress', or they might aim at clarifying what we mean when we ascribe causality to individuals, groups or any other kind of 'historical force'. Finally, we might even feel the need to analyze and evaluate which ways of conceiving of a maximal horizon of action are rationally justifiable in the situation we find ourselves in.

PHIL 5100 - Independent Study in Philosophy (1-3 cr.)

Description
In exceptional circumstances, some students may arrange for independent research projects in specific topics in Philosophy that are not covered by the course offerings for that academic year.

PHIL 5101 - Advanced Seminar in Classical Philosophy (3 cr.)

Description
This course will deal with issues in Ancient Greek and Medieval Philosophy that are relevant for an appreciation of Egypt's philosophical tradition, as well as for an understanding of the philosophical debates that contributed to the development of Islamic Philosophy. Special emphasis will accordingly be placed upon the following: Some of the great philosophers who lived and worked in Egypt (such as Philo Judaeus, Clement of Alexandria, Origen and Moses Maimonides); the history of Platonism (Plato, Plotinus and the Ancient commentators on Plato and Aristotle working in the schools of Athens and Alexandria); and the Aristotelian tradition (Aristotle, Alexander of Aphrodisias and Themistius).

PHIL 5104 - Selected Topics in Contemporary Philosophy (3 cr.)

Description

This course will focus on themes which bear on the way perennial concerns have articulated themselves in recent philosophical discourse. The course will trace questions raised and methodologies employed by a particular tradition or school of thought and compare several such perspectives in an interdisciplinary framework. Topics may include contemporary perspectives on the nature of action and agency, on the future of democracy in a world dominated by new

technologies of communication and decision-making such as AI and social media, or on the plurality of modern attitudes about the nature and task of philosophical inquiry.

PHIL 5112 - Advanced Seminar in Aesthetics (3 cr.)

Prerequisites
Prerequisites For Undergraduates: PHIL 3010 or consent of instructor.

Description
This course offers in-depth analysis and discussion concerning key texts from the history of aesthetics and/or addressing current debates in aesthetic theory. Issues covered may include the beautiful and the sublime, classicism and romanticism, tragedy and the absurd, modernism and post-modernity.

When Offered
Offered occasionally.

PHIL 5117 - Philosophy of Language (3 cr.)

Description
Although the emphasis on the importance of a systematic philosophical reflection of language is a characteristic feature of its development in the 20th century which, thus, has been described as taking a 'linguistic turn', the philosophical interest in language is, nonetheless, almost coeval with the ancient origins of the discipline. As a result of this perennial interest, philosophers have studied various dimensions of language and the ways in which it is constitutive of the way we conceive of ourselves, relate to the world, establish and preserve political communities and partake in a shared historical world of meanings and linguistic practices. This course, consequently, aims at a both historically and systematically informed exploration of these dimensions of language in its philosophical reflection.

When Offered
Offered in fall.

PHIL 5119 - Advanced Seminar in Political Philosophy (3 cr.)

Description

This advanced seminar will focus on contemporary trends in political philosophy with an emphasis on how classical political texts and problems have served as points of departure for new perspectives. The approaches studied in this course will vary from semester to semester and may include deliberative democracy, theories of recognition, liberalism, secularism/post-secularism, cosmopolitanism, and the relationship between politics and aesthetics. Reading may include the work of Arendt, Schmitt, Agamben, Ranciere, Honneth, Habermas, Rawls, Taylor, Zizek, Fraser, and Foucault.

When Offered
Offered in alternate years.

PHIL 5120 - Advanced Seminar in Feminist Philosophy (3 cr.)

Description
This advanced seminar will focus on a particular issue in feminist philosophy. Topics will vary and may include an emphasis on sex, gender, class, race, embodiment, power, intersectionality, disability, and other contemporary issues relevant to feminism.

PHIL 5121 - Philosophical Logic (3 cr.)

Description
Speaking of logic, we do not only mean that science which analyzes the components, forms and grounds of the soundness of reasoning; we do also refer to a human capacity that comes into play whenever we defend our claims and attack those of others. Logic, thus, is both: a theory that can be studied and a know-how, governing our practices of argumentation. With that in mind, philosophers are expected to cultivate their abilities to analyze and critically assess the logical structures of philosophical arguments. This course, therefore, offers an introduction to syllogistic and symbolic logic with a focus on the argumentative exigencies of the discipline.

When Offered
offered occasionally

PHIL 5122 - Advanced Seminar in Islamic Philosophy (3 cr.)

Description
This course will survey the classical tradition of Islamic Philosophy. It will constitute a close

study of the works of figures such as Al-Farabi, Ibn Sina, Al-Ghazali, and the Andalusian thinkers such as Ibn Tufayl and Ibn Rushd. Ibn Al-Arabi and the Sufi tradition, as well as selective writings by Shihab al-Din Suhrawardi and Mulla Sadra, may also be studied. Some consideration may also be given to the significant status of Islamic Philosophy within the History of Science. Additionally, towards the end of the course, some contemporary work in the field of Islamic Philosophy may also be considered.

PHIL 5123 - Kant and Idealism (3 cr.)

Description

This course will focus upon the transformation of philosophy during the late enlightenment period that was enacted by Immanuel Kant and which gave rise to what is now known as 'Continental Philosophy.' Kant's works will be studied alongside either those thinkers by whom he was influenced, such as Leibniz and Hume, or those thinkers upon whom he had an influence, such as Fichte, Schelling, Hegel and Schopenhauer.

PHIL 5124 - Advanced Seminar in Phenomenology (3 cr.)

Description

This course will begin by investigating the origins of phenomenology by means of a close reading of key selections from the work of Husserl. It shall then move on to consider Heidegger's transformation of phenomenology. The work of later phenomenologists, such as Sartre, Merleau-Ponty, and Edith Stein, may also be discussed.

PHIL 5125 - Advanced Seminar in Moral Philosophy (3 cr.)

Prerequisites

Senior level, graduate level, or consent of instructor.

Description

Contemporary moral philosophy encompasses a number of distinct, though related disciplines: normative ethics, which focuses on finding principles to evaluate the moral worth of actions, institutions and persons; applied ethics, which attempts to answer controversial moral questions in order to inform concrete policies; and meta-ethics, which theorizes about the metaphysics, epistemology, and semantics of moral properties, concepts and judgments. This course provides students with a grounding in cutting-edge work in moral philosophy through investigating the

interrelations between these three disciplines.

When Offered
Offered occasionally.

PHIL 5130 - Philosophy of Mind (3 cr.)

Description
This course is an introduction to the philosophy of mind. Philosophy of mind is a branch of philosophy that deals with the analysis and resolution of conceptual questions concerning the nature of the mind. Research in the philosophy of mind tackles such questions as: What is a mind? What is consciousness? Is a person's mind a distinct thing from her body? Could a sufficiently complicated artificial neural network or robot be a conscious agent, in the fullest possible sense? Questions such as these clearly straddle a boundary between conceptual analysis and empirical science. Therefore, philosophy of mind is an interdisciplinary subject, which draws on cutting-edge research from a diverse range of fields, including psychology, neuroscience, cognitive science, and computer science

PHIL 5150 - Philosophy and Film (3 cr.)

Prerequisites
Students other than Philosophy majors must take FILM 3130 Film Theory prior to registering for this course.

Description
This course considers the relationship between philosophical reflection and aesthetic practice through the lens of cinema, with the purpose of engaging students of both philosophy and film theory in a cross-disciplinary investigation into cinema. The course will draw both from philosophical texts on film, and classical and contemporary film theory. Topics may include epistemological, ontological and ethical questions about film; the role of memory, subjectivity, identity, and desire in cinema; time, space, and the nature of the image; perspectives on sexuality, gender, and race in film; psychoanalytic, feminist, and postcolonial film theory; and analytic and continental approaches to film and philosophy.

Cross-listed
FILM 4350

PHIL 5151 - Philosophy of Media (3 cr.)

Prerequisites
Senior level, graduate level, or consent of instructor.

Description

This course analyzes the nature, power and responsibilities of media, including social media, by exploring how means of sharing and preserving information define cultural systems, shape political practices, direct social interaction and impinge on the historical self-understanding of humanity.

When Offered
Offered occasionally.

PHIL 5199 - Selected Topics in Philosophy (3 cr.)

Prerequisites
Senior level, graduate level, or consent of instructor.

Description
According to special interest of faculty and students.

Repeatable
May be repeated for credit if content changes.

PHIL 5299 - Research Guidance and Thesis (0 cr.)

Description

Students are required to write a thesis of approximately 10,000 words in length, which should demonstrate the student's ability to conduct research and write critically and pointedly about a given subject. There will also be a final defense of the finished thesis.

Physics

PHYS 1001 - Physics for Poets (3 cr.)

Description
A conceptual overview of classical and modern physics. Mechanics, properties of matter, heat, sound, electricity and magnetism, light, atomic and nuclear physics, relativity theory.

When Offered
Offered in fall and spring.
Notes
No credit for Thannawia Amma Math/Science students, or equivalent, or students majoring in any of the departments of the School of Sciences and Engineering.

PHYS 1002 - Introduction to Renewable Energy (3 cr.)

Description
The course will explore the society's present and future energy demands. Discuss different types of renewable energy resources such as solar energy, hydro-power and others.

When Offered
Offered in fall, spring, summer and winter.
Notes
No credit for Thannawia Amma Math/Science students, or equivalent, or students majoring in any of the departments of the School of Sciences and Engineering.

PHYS 1003 - Origin of the Universe (3 cr.)

Description
The course presents the modern scientific understanding of the origin and evolution of the Universe. It addresses the science of how the present Universe came to be, What its fate is, the concept of a parallel Universe and Multiverses, the anthropic and anti-anthropic principles, galaxies and their evolution, Stellar properties. This is done by covering various concepts like the laws of motion and gravitation, light, matter, cosmic distances, spacetime and gravity, the big bang, inflation, dark matter and dark energy.

When Offered
Offered in fall, spring, summer and winter.
Notes

No credit for Thannawia Amma Math/Science students, or equivalent, or students majoring in any of the departments of the School of Sciences and Engineering.

PHYS 1004 - Physics of Sports - Unleashing the Science Behind Athletic Mastery (3 cr.)

Description

Introduction to the basic principles of Newtonian mechanics applied to sports, covering kinematics in 1D and 2D, projectile motions, Newton's three laws of motion, linear and angular momentum, work and Energy, impulses and collisions, static equilibrium and fluid mechanics.

When Offered

Offered in fall, spring and summer.

PHYS 1011 - Physics 1: Classical Mechanics, Sound and Heat (3 cr.)

Prerequisites

MACT 1121

PHYS 1012 to be taken concurrently

Description

An introduction to classical mechanics covering vectors, applications of Newton's laws, conservation laws and forces, motion in a plane, circular motion, equilibrium and elasticity, rotational motion, simple harmonic motion, energy and power; mechanical and sound waves, temperature, heat and the first law of thermodynamics.

When Offered

Offered in fall, spring and summer.

Notes

Thanaweyya Amma Math or Science, German Abitur, French Baccalaureate, IGCSE O-Level Physics, International Baccalaureate, Canadian certificates, or American Diploma (with SATII in MATH or PHYS) students are allowed to take MACT 1121 concurrently with PHYS 1011.

PHYS 1012 - General Physics Laboratory I (1 cr.)

Prerequisites

Concurrent with PHYS 1011

Description
The fundamental quantities of physics are measured through selected experiments in mechanics, heat, and sound. Data are summarized, errors are estimated, and reports are presented.

Hours
.One three-hour laboratory period
When Offered
Offered in fall, spring and summer.

PHYS 1021 - Physics 2: Electricity and Magnetism (3 cr.)

Prerequisites
PHYS 1011 ,PHYS 1012 ,MACT 1122 or concurrent.

Concurrent with PHYS 1022

Description
An introduction to electricity and magnetism covering the electric field, Gauss's law, electric potential, capacitance, dc circuits, magnetic fields, Faraday's and Ampere's laws, time-varying fields, Maxwell's equations in integral form and alternating currents.

When Offered
Offered in fall, spring and summer.

PHYS 1022 - General Physics Laboratory II (1 cr.)

Prerequisites
Concurrent with PHYS 1021

Description
The fundamental quantities of physics are measured through selected experiments in electricity, magnetism, and optics. Data are summarized, errors are estimated, and reports are presented.

Hours

One three-hour laboratory period

When Offered

Offered in fall, spring and summer.

PHYS 1930 - Selected Topic for Core Curriculum (3 cr.)

Description

Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

When Offered

Offered occasionally.

PHYS 2041 - Foundations of Modern Physics (3 cr.)

Prerequisites

PHYS 1021. Co-requisite MACT 2141 .

Description

Introduction to special relativity and quantum physics, experimental basis of relativity, Einstein's Postulates, Lorentz transformation, relativistic momentum and energy, experimental evidence of quantization, wave-particle duality, and Schrodinger equation.

When Offered

Offered in fall and spring.

PHYS 2042 - Modern Physics Laboratory (1 cr.)

Prerequisites

PHYS 1022

Description

Quantization of electric charge, thermal radiation law, quantization of energy, particle nature of light, spin.

When Offered
Offered in fall and spring

PHYS 2211 - Introduction to Electronics (3 cr.)

Prerequisites
PHYS 1021

Concurrent
PHYS 2213
Description
Foundation of DC and AC Circuit Analysis, Resonance and Filter Circuits, Semiconductor Basics, Diode and transistor fundamentals and applications, and feedback oscillators.

When Offered
Offered in fall, spring and summer.

PHYS 2213 - Electronics Lab (1 cr.)

Concurrent
PHYS 2211
Description
Basic experiments in circuits and electronics.

When Offered
Offered in fall, spring and summer.

PHYS 2216 - Fundamentals of Circuits and Electronics (2 cr.)

Prerequisites
PHYS 1021

Concurrent
PHYS 2217
Description
Foundation of circuit analysis and Theorems, AC theory and circuits analysis, Introduction to

semiconductor basics and diodes, Metal-Oxide-Semiconductor Structure, Transistors, Operational amplifiers, Digital Electronic fundamentals, and Logic gates.

When Offered
Offered in fall, spring and summer.

PHYS 2217 - Fundamentals of Circuits and Electronics Lab (1 cr.)

Concurrent
PHYS 2216
Description
Basic experiments demonstrating the fundamental theory of circuits and electronics for mechanical engineering students.

When Offered
Offered in fall, spring and summer.

PHYS 2221 - Waves and Optics (3 cr.)

Prerequisites
PHYS 1021

Description
Wave phenomena; EM waves, geometrical and physical optics, and matter waves.

When Offered
Offered in fall and spring.

PHYS 2222 - Optics Laboratory (1 cr.)

Prerequisites
PHYS 2221 or concurrent.

Description
Basic experiments in physical optics with special emphasis on laser optics.

When Offered
Offered in fall and spring.

PHYS 3013 - Theoretical Mechanics (3 cr.)

Prerequisites
MACT 2141 ; MACT 2123

Description
Newton's laws of motion, projectiles and charged particles, momentum and angular momentum, energy, oscillations, calculus of variations, Lagrange's equations, Hamiltonian mechanics, mechanics in noninertial frames.

When Offered
Offered in fall.

PHYS 3023 - Electromagnetic Theory (3 cr.)

Prerequisites
PHYS 2221 and MACT 2123

Description
Electric field and potential. Gauss's law; divergence. Conductors, dielectrics and capacitance. Poisson's and Laplace's equations. Electrostatic analogs. Magnetic field and vector potential. Time varying fields; displacement current. Maxwell's equations in differential form, Poynting's theorem, Electromagnetic waves in vacuum and in matter.

Cross-listed
Same as ECNG 3401
When Offered
Offered in spring.

PHYS 3031 - Thermodynamics and Statistical Mechanics (3 cr.)

Prerequisites
Concurrent PHYS 4042

Description
A macroscopic and microscopic study of equilibrium thermal physics, fundamental laws of thermodynamics, and statistical mechanics applied to various systems.

When Offered
Offered in spring.

PHYS 3052 - Nuclear Physics Lab (1 cr.)

Prerequisites
PHYS 2041 or concurrent.

Description
Experiments in atomic and nuclear physics.

When Offered
Offered in fall and spring.

PHYS 3223 - Advanced Optics (3 cr.)

Prerequisites
PHYS 2222 ,PHYS 2221

Description
Geometric optics: generalized paraxial formulas, matrix formalism of Gaussian optics. Imaging properties of lens systems: lens combination, the vector nature of light: polarization effects, diffraction effects, superposition of waves: interference, spatial and temporal coherence length, and multilayer structures.

When Offered
Offered in spring.

PHYS 3232 - Advanced Physics Lab (2 cr.)

Prerequisites

PHYS 2042

Description
Experiments in solid-state physics and semiconductor devices.

When Offered
Offered in fall and spring.

PHYS 3241 - Computational Methods in Physics (3 cr. + 1 cr.)

Prerequisites
MACT 2132, MACT 2141

Description
Principles of programming and computing employing MATLAB. Topics covered include data types, arithmetic, scripts, user-defined functions, inputs, outputs, conditionals, loops, arrays, and modular programming. An emphasis is given to the visualization and graphical representation. Linear systems of equations and matrices; eigenvalues and eigenvectors; numerical errors; numerical solution of linear and nonlinear equations; curve fitting; numerical differentiation and integration; numerical solution of ordinary differential equations; applications in various fields of physics. MATLAB will mostly be used as a programming language in the weekly computer laboratory sessions.

Hours
Three-credit lectures and one credit computer lab.
When Offered
Offered in fall or spring.

PHYS 4042 - Quantum Mechanics I (3 cr.)

Prerequisites
PHYS 2041 , MACT 2132, PHYS 3013

Description
Stern-Gerlach experiments, operators and measurement, Schrödinger time evolution, quantized energies and particle in potential wells, unbound states, angular momentum, Hydrogen atom, harmonic oscillator.

When Offered
Offered in spring.

PHYS 4043 - Quantum Mechanics II (3 cr.)

Prerequisites
PHYS 4042

Description
Perturbation theory, hyperfine structure and the addition of angular momenta, perturbation of Hydrogen, identical particles, time-dependent perturbation theory, periodic systems, modern applications of quantum mechanics.

PHYS 4051 - Nuclear and Particle Physics (3 cr.)

Prerequisites
PHYS 4042

Description
A modern view of the fundamental structure of matter, nuclear structure, nuclear models, nuclear decay and radioactivity, nuclear reactions; quarks, gluons, leptons; accelerators, particle interactions with matter, detectors; weak, electromagnetic and strong interactions.

When Offered
Offered in fall.

PHYS 4071 - General Relativity and Cosmology (3 cr.)

Prerequisites
MACT 2132 and PHYS 3023

Description

Coordinate symmetries, the principle of equivalence and its implications, metric description of a curved spacetime, Geodesic equation and Einstein field equation, applications of spacetime

outside a spherical star, Hubble's law, dark matter, Robertson-walker metric, the expanding universe and thermal relics, inflation and the accelerated universe.

PHYS 4224 - Photonics (3 cr.)

Prerequisites
PHYS 2221 or consent of instructor.

Description
Light sources and transmitters, receivers, laser diodes, LEDs and photodiodes. Electromagnetic mode theory for optical propagation. Optical fiber measurements: fiber materials, multimode fibers, single-mode fibers. Fabrication, cabling, connectors and couplers. Optical amplifiers, Erbium-Doped fiber amplifiers. Modulation of light, multiplexing and de-multiplexing, fiber networking.

When Offered
Offered in fall.

PHYS 4225 - Photonics and Optical Communication Laboratory (1 cr.)

Prerequisites
PHYS 2222

Description
Experiments in fiber optics illustrating concepts pertaining to fiber dispersion, attenuation measurements, characterization of light sources (LEDs and laser diodes) and detectors (photodiodes), optical multiplexing and de-multiplexing, optical and interferometric sensors.

When Offered
Offered in fall.

PHYS 4227 - Fundamentals of Quantum Computing (3 cr.)

Prerequisites
PHYS 1011, PHYS 1012, MACT 2132 or equivalent.

Description

Covers the fundamental principles of quantum computing and quantum information science. Topics include the postulates of quantum mechanics, quantum states, unitary evolution, entanglement, teleportation and quantum measurement, essential quantum algorithms, quantum circuits, as well as the architectures and implementation approaches of various quantum computing platforms.

When Offered

Offered in fall or spring.

PHYS 4231 - Introduction to Solid-State Physics (3 cr.)

Prerequisites

PHYS 3031

Description

Classification of materials and their structural characteristics, symmetry and properties of materials, free-electron theory, band theory, dielectric processes, optical processes in material.

When Offered

Offered in spring.

PHYS 4233 - Semiconductor Physics (3 cr.)

Prerequisites

PHYS 2211 and PHYS 2041

Description

Fundamental theory and characteristics of elemental and compound semiconductors. Semiconductor technology. P-N junctions and transistors.

When Offered

Offered in fall.

PHYS 4234 - Solar Energy Lab (2 cr.)

Prerequisites
PHYS 1022

Description
Experiments on solar energy systems and photovoltaic technology.

When Offered
Offered in fall and spring.

PHYS 4241 - Introduction to Solar Energy (3 cr.)

Prerequisites
PHYS 2221

Description
Working principle of a solar cell, fabrication of solar cells, PV module construction and the design of a PV system. The suitable semiconductor materials, device physics, and fabrication technologies for solar cells are presented. The cost aspects, market development, and the application areas of solar cells are also presented.

PHYS 4242 - Introduction to Nanophysics (3 cr.)

Prerequisites
PHYS 2221 , PHYS 2041

Description
Nanophysics fundamentals, physics nanostructures, thermodynamics of nanostructures, monocrystalline structures, Quantum nanostructures, Nano optics, nanoplasmonics.

PHYS 4243 - Physics of Solar Energy Conversion Systems (3 cr.)

Prerequisites
PHYS 2221

Description

Atomic structures, basics of energy conversions, fundamental of nanoscience and nanotechnology, wave optics, light-matter interactions, diffractions and interference, Solar cell physics and design.

PHYS 4244 - Introduction to Nanotechnology (3 cr.)

Prerequisites
PHYS 2221, PHYS 2041 and (PHYS 2211 or PHYS 2216 or ECNG 3105)

Description

Fabrication methods of nanomaterials and nano devices, properties of nanoparticles, nanowires and nanotubes. Electronic transport in nanostructures, nanoelectronics and nanophotonics, nanomagnetism.

PHYS 4281 - Experimental Methods in Physics (3 cr.)

Prerequisites
Prerequisites: Junior standing. Consent of instructor.

Description
Experimental techniques for studying thermal, optical, magnetic and electric properties of matter. Low temperature physics: gas liquefaction, storage of liquefied gases, cryostats for low temperature studies, applied cryogenics.

When Offered
Offered in fall and spring.

PHYS 4910 - Independent Study (1-3 cr.)

Prerequisites
Prerequisites: consent of the instructor, senior standing.

Description
In exceptional circumstances some senior physics students, with departmental approval, may arrange to study a selected topic outside of the regular course offerings. The student and faculty member will select a topic of mutual interest and the student will be guided in research and

readings. The student would demonstrate achievement either by submitting a report or passing an examination, according to the decision of the supervisor. May be repeated for credit more than once if contents change.

PHYS 4930 - Selected Topics in Physics (3 cr.)

Prerequisites
Prerequisite: Junior standing or consent of instructor.

Description
Topics may include Quantum Field Theory, Superconductivity, Laser Physics, Biophysics, and Geophysics. Can be taken more than once as long as the topic is different

When Offered
Offered occasionally.
Repeatable
May be repeated for credit more than once if content changes.

PHYS 4980 - Research Skills (1 cr.)

Prerequisites
Senior standing.

Description
A capstone course, essential research methods such as preparing a literature survey, assembling a bibliography, using order of magnitude estimates and dimensional analysis. Each student selects a topic in his/her field of interest under the supervision of a faculty member. The student submits a written study plan and delivers a seminar in which this plan is presented for departmental approval. The approved plan is carried out in the student's Senior Thesis PHYS 4981

When Offered
Offered in fall and spring.

PHYS 4981 - Senior Thesis (2 cr.)

Prerequisites
PHYS 4980

Description
A capstone course. A continuation of PHYS 4980 where the approved study plan from this course is carried out. After finishing this research project, an oral presentation, defense, and a written thesis are required of each candidate in accordance with the departmental guidelines.

When Offered
offered in fall and spring

PHYS 5113 - Classical Mechanics (3 cr.)

Prerequisites
PHYS 3013 or equivalent.

Description

Variational principles and Lagrange's Equations, central force problem, kinematics and equations of motion of rigid body problem, oscillations, classical mechanics of the special theory of relativity, Hamiltonian equations of motion, canonical transformations, Hamilton-Jacobi theory and action-angle variables.

When Offered
Offered in fall.

PHYS 5124 - Fundamentals of Microwaves (3 cr.)

Prerequisites
PHYS 5223

Description
Transmission line theory, Planar transmission lines, Network parameters, Impedance matching circuits, Directional couplers, Noise in microwave systems, Microwave diodes and transistors, Dielectric resonators, Maximum gain / specified gain / low-noise / balanced / distributed / power amplifiers, Diode / transistor / dielectric resonator oscillators, Monolithic microwave

integrated circuits.

When Offered
Offered in spring.

PHYS 5125 - Integrated Photonics (3 cr.)

Prerequisites
PHYS 4224 or equivalent.

Description

The basics of passive photonic components, focusing on working principles of the devices and their applications in communications, and sensing systems. Key topics include Optical Waveguides, optical resonators, periodic structures, optical thin films and gratings, photonic band gap materials, and couplers.

When Offered
Offered in fall and spring.

PHYS 5132 - Advanced Thermodynamics and Statistical Mechanics (3 cr.)

Prerequisites
PHYS 3031 or equivalent.

Description
The laws and applications of thermodynamics, Boltzmann transport equation and transport phenomena, classical statistical mechanics, canonical and grand canonical ensembles, quantum statistical mechanics, ideal Fermi and Bose gases, phase transitions and critical phenomena.

When Offered
Offered in spring.

PHYS 5142 - Computational Physics (3 cr.)

Prerequisites
MACT 2141, MACT 3143 or consent of instructor.

Description

Numerical methods for quadrature solution of integral and differential equations, and linear algebra. finite difference methods, finite element techniques, solving a system of equations. Use of computation and computer graphics to simulate the behavior of complex physical systems. Monte Carlo simulations.

When Offered

Offered in fall.

PHYS 5161 - Mathematical Physics (3 cr.)

Prerequisites

MACT 2141 or equivalent.

Description

Vector analysis, coordinate systems, tensor analysis, matrices, group theory, functions of a complex variable: conformal mapping and calculus of residues, series solutions of differential equations, special functions, partial differential equations of theoretical physics, separation of variables, nonhomogeneous equations-Green's function, integral transforms, Fourier and Laplace transforms.

When Offered

Offered in fall.

PHYS 5207 - Advanced Nanophysics (3 cr.)

Prerequisites

Consent of Instructor

Description

Nanophysics fundamentals, physics of nanostructures, crystalline nanostructures, light-matter interaction on the nanoscale, quantum nanostructures, diffraction and scattering from nano objects.

Cross-listed
NANO 5207

PHYS 5223 - Classical Electrodynamics I (3 cr.)

Prerequisites
PHYS 3023 or equivalent and PHYS 5161

Description

Boundary value problems in electrostatics: Poisson and Laplace equations, formal solution of electrostatic boundary value problem with Green function, applications in rectangular, spherical and cylindrical coordinates, multipoles, electrostatics of macroscopic media, magnetostatics, Faraday's law and quasi-static fields, Maxwell equations, macroscopic electromagnetism and conservation laws.

When Offered
Offered in spring.

PHYS 5225 - Classical Electrodynamics II (3 cr.)

Prerequisites
PHYS 5223

Description

Plane electromagnetic waves and wave propagation, waveguides, resonant cavities, radiating systems, multipole fields and radiation, scattering and diffraction, covariant formulation of electrodynamics, dynamics of relativistic particles and electromagnetic fields, collisions, energy loss, and scattering of charged particles, Cherenkov and transition radiation, radiation by moving charges, radiation damping.

When Offered
Offered in fall and spring.

PHYS 5235 - Solid State Physics I (3 cr.)

Prerequisites
PHYS 4231 or equivalent.

Description
Classification of solids; preparation and characterization; binding energies; ionic, covalent and metallic bonds; crystallography; reciprocal lattice; Brillouin zones; vector representation; crystal symmetry and macroscopic properties; tensor formulation; diffraction in crystalline and amorphous solids; crystal imperfections; point-, linear-, and planar type; effects on properties; origin of microstructure in crystalline and amorphous solids.

When Offered
Offered in fall.

PHYS 5236 - Advanced Semiconductor Physics (3 cr.)

Prerequisites
PHYS 2211 and PHYS 4231 or equivalent.

Description
This is a course about how charge flows in semiconductors with an emphasis on transport in nanoscale devices. The course consists of three main parts. Part 1 focuses on near- equilibrium transport in the presence of small gradients in the electrochemical potential or temperature, with or without the application of a small magnetic field. The emphasis in Part 2 is on the physics of carrier scattering and how the microscopic scattering processes are related to macroscopic relaxation times and mean-free-paths. Part 3 examines high-field transport in bulk semiconductors and so-called "non-local" transport in sub-micron devices. The course concludes with a brief introduction to quantum transport. The objective of the course is to develop a broad understanding of the basic concepts needed to understand modern electronic devices. It is intended for those who work on electronic devices - whether they are experimentalists, device theorists, or computationalists.

Cross-listed
Same as NANO 5222 .
When Offered
Offered in fall.

PHYS 5237 - Solid State Physics II (3 cr.)

Prerequisites
PHYS 5235

Description
Semi-classical theory of electron dynamics; classification of solids; failures of the static lattice model; classical and quantum theories of harmonic crystal: phonons and lattice vibrations; thermal properties of insulators; defects, dislocations and thermodynamics stability; dielectric properties; phenomena in insulators: excitons, photoconductivity, light amplification, non-linear optics, luminescence.

When Offered
Offered in spring.

PHYS 5238 - Quantum Computation (3 cr.)

Prerequisites
MACT 2132, PHYS 3241, PHYS 4042

Description

Quantum physics as a powerful computational paradigm. Topics include: Quantum bits (qubits); quantum gates and their physical realization; Advanced aspects of Quantum entanglement and its applications in quantum computation; The needs and limitations of quantum simulators; Physical implementation of quantum computation.

When Offered
Offered in fall or spring.

PHYS 5239 - Computational Electromagnetics (3 cr.)

Prerequisites
PHYS 5223, PHYS 5142 or equivalent.

Description

Modeling electromagnetic phenomena related to microwave, millimeter, terahertz, and optical frequencies. Fundamentals of electromagnetic theory, Green's functions in layered media, Integral equation formulation, Method of Moments, The Mode Matching Method, Finite difference time domain, Variation approaches in electromagnetic and finite element methods, the Beam propagation method, Spectral Fourier method for periodic structures.

When Offered

Offered in fall and spring.

PHYS 5243 - Advanced Quantum Mechanics (3 cr.)

Prerequisites

PHYS 4042 or equivalent.

Description

Fundamental concepts of quantum mechanics including the harmonic oscillator, the hydrogen atom, electron spin and addition of angular momentum. Qualitative and approximation methods in quantum mechanics, including time-independent and time-dependent perturbation theory, variational methods, scattering and semiclassical methods. Applications are made to atomic, molecular and solid matter. Systems of identical particles including many electron atoms and the Fermi gas.

Cross-listed

Same as NANO 5210.

When Offered

Offered in fall and spring.

PHYS 5277 - MEMS/NEMS Technology and Devices (3 cr.)

Prerequisites

Consent of instructor.

Description

Basic MEMS/NEMS fabrication technologies, various transduction mechanisms such as

piezoelectric, pyroelectric, thermoelectric, thermionic, piezoresistive, etc. The theory of operation of few sensors including infrared detectors, radiation sensors, rotation and acceleration sensors, flow sensors, pressure and force sensors, and motion sensors. An introduction to different techniques for analyzing experimental data.

Cross-listed
Same as NANO 5221 ,RCSS 5242 .
When Offered
Offered in fall.

PHYS 5282 - Advanced Experimental Techniques (3 cr.)

Prerequisites
PHYS 3052 PHYS 3232 and PHYS 4234 or equivalent.

Description
This course is designed to introduce students to advanced techniques in experimental physics. The emphasis is on self-study of the phenomena, data analysis, and presentation in journal paper format. Experiments may vary each semester. Examples of topics: Thin film deposition and characterization, high pressure physics, photonics, solid state techniques, fluid flow visualization. This course is team-taught through a course coordinator.

When Offered
Offered in spring.

PHYS 5910 - Independent Studies (1-3 cr.)

Prerequisites
Prerequisite: Consent of supervisor, graduate standing.

Description
In exceptional circumstances, some senior graduates with departmental approval may arrange to study beyond the regular course offerings. Guided reading for research and discussions based on a subject of mutual interest to the student and the responsible faculty member. The student demonstrates his/her achievement by submitting a report and by passing a subsequent

examination.

Notes
Maximum of 3 credit hours of independent studies can be used towards the M. Sc. degree in physics.

PHYS 5930 - Selected topics in Physics (3 cr.)

Prerequisites
Consent of the faculty advisor.

Description
Topics to be chosen according to specific interests. Maybe taken for credit more than once if content changes.

When Offered
Offered in fall and spring.

PHYS 5980 - Research Guidance Thesis (3 cr.)

Prerequisites
SCI 5940

Description
Consultation on problems related to student thesis.

Notes
Must be taken twice for a total of 6 credits.

PHYS 6121 - Nanophotonics (3 cr.)

Prerequisites
Consent of Instructor

Description
The course will cover: Maxwell's equations, light-matter interaction, dispersion, EM properties

of nanostructures, etc., Photonic crystals Photonic crystal fibers, Photonic nanocircuits Metal optics, manipulating light with plasmonic nanostructures, plasmonic nano-sensors, near-field optics, metamaterials, negative refractive index and super-resolution.

Cross-listed
NANO 6121

PHYS 6930 - Advanced Selected Topics in Physics (3 cr.)

Prerequisites
Consent of the faculty advisor.

Description
Topics to be chosen according to specific interests. May be taken for credit more than once if content changes.

When Offered
Offered in fall and spring.

Political Science

POLS 1001 - Introduction to Political Science (3 cr.)

Prerequisites
ENGL 0210

Description
Methods of study and the nature of political phenomena; terminology and conceptual tools; origins, forms, and historical development of political organization; political institutions and functions; comparison of modern forms of political organization at the national, local, and international levels.

When Offered
Offered in fall and spring.

POLS 1099 - Selected Topics in Political Science (3 cr.)

Description
Course addressing broad intellectual concerns and accessible to all students, irrespective of major, and available for fulfillment of the primary level Social Sciences requirement in the core curriculum.

POLS 2003 - Introduction to Political Science II (3 cr.)

Prerequisites
ENGL 0210

Description
This course is reserved for students who have completed 30 credit hours who wish to major in Political Science, but cannot be taken if students have already taken POLS 1001. Students who are not eligible to register in POLS 1001 can take POLS 2003 during their freshman year.

When Offered
Offered in fall and spring.

POLS 2096 - Selected Topics for Core Curriculum (3 cr.)

Prerequisites
RHET 1010

Description
Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

When Offered
Offered occasionally.
Repeatable
May be repeated for credit if content changes.

POLS 2104 - Introduction to Research Methods in Political Science (3 cr.)

Prerequisites

POLS 1001 or POLS 2003, RHET 1010

Description
The course is an introductory course intended for students seeking a career in political science-related fields. The key purpose of the course is to introduce students to main methods of scientific political enquiry. Using existing data sources, qualitative and quantitative research methods are the main topics to be covered in this course.

When Offered
Offered in fall and spring.

POLS 2405 - History and International Politics (3 cr.)

Prerequisites
RHET 1010

Description
This course provides students with a foundational understanding of the historical events that gave shape to international politics and that today form the discipline of International Relations. It will give students the historical and conceptual foundations necessary to pursue a specialization in International Relations by introducing key events and their consequences in international politics.

When Offered
Offered in fall and spring.

POLS 3201 - History of Political Theory l (3 cr.)

Prerequisites
RHET 1020, POLS 1001 or POLS 2003

Description
This course analyzes the major ancient and medieval thinkers and texts in the history of political thought. Students will study works by representative authors such as Plato, Aristotle, Cicero,

Augustine, Aquinas, and Averroes. Topics and themes examined in the course include justice, equality, liberty, wisdom, the city, and the good life.

When Offered
Offered in fall and spring.

POLS 3202 - History of Political Theory II (3 cr.)

Prerequisites
RHET 1020, POLS 1001 or POLS 2003

Description
This course analyses major modern and late modern texts in the history of political thought. Students will study works by representative thinkers such as Machiavelli, Hobbes, Locke, Rousseau, Wollstonecraft, Kant, Hegel, Marx, and Mill. Topics and themes of the course include the state, individual rights, security, equality, revolution, commerce, cosmopolitanism, gender, and communism.

When Offered
Offered in fall and spring.

POLS 3401 - Introduction to Comparative Politics (3 cr.)

Prerequisites
POLS 1001 or POLS 2003, RHET 1010

Description
This course provides an introduction to the analysis of comparative politics, exploring differences in the institutional make-up and the workings of political systems worldwide. Topics covered include an examination of the key institutions of the state, executive-legislative relations, the different tiers of government, the media in politics, interest group and party politics and political transitions.

When Offered
Offered in fall and spring.

POLS 3408 - Comparative Politics of the Middle East (3 cr.)

Prerequisites
POLS 1001 or POLS 2003, RHET 1020

Description
Comparative study of government and ideologies, social stratification, and institutions in the Middle East. Also includes a study of the problems of modernization and political development.

When Offered
Offered in fall and spring.

POLS 3454 - Political and Social Thought in the Modern Arab World (3 cr.)

Prerequisites
POLS 1001 or POLS 2003, RHET 1020, or instructor approval for non political science majors

Description
Development of political and social ideologies in the Arab world since the beginning of the twentieth century. Topics will include the impact of liberal thought on Arab elites, the rise of nationalism, and the emergence of theories of political and social transformation.

When Offered
Offered occasionally.

POLS 3510 - Introduction to Development (3 cr.)

Prerequisites
POLS 1001 or POLS 2003, RHET 1020

Description
Introduces students to development dilemmas in the "Global South," using a political economy approach. Questions raised include: What is development? How to measure it? Why are some nations "developed" and others are not? The course covers theories of Modernization, Dependency, Neo-Liberalism, and Statism, as well experiences of various countries.

When Offered
Offered in fall and spring.

POLS 3550 - Introduction to Political Economy (3 cr.)

Prerequisites
POLS 1001 or POLS 2003, ECON 2021 and RHET 1010

Description
This course introduces students to the main approaches of political economy and the interconnections between power and wealth. It surveys the main schools of thought in political economy, their evolution, convergence, and divergence. The course covers issues essential to the understanding of the interaction between politics and economics in today's world, including wealth accumulation and distribution, the state, markets, gender, labor, and the environment.

POLS 3620 - Introduction to International Relations Theories (3 cr.)

Prerequisites
POLS 1001 or POLS 2003, RHET 1010, POLS 2405

Description
This course provides students with a foundational understanding of international relations theories. Students will engage in discussions of how these theories are applied to cases throughout history, gaining a thorough knowledge of the explanatory capabilities and limits of each of the major theories.

When Offered
Offered in fall and spring.

POLS 4000 - The Discipline and Critical Social Theory (3 cr.)

Prerequisites
POLS 3201 , POLS 3202, RHET 1020, Honors status

Description
This course familiarizes students with the relation between political theory and social theory; introduces them to a range of authors, texts, and ideas associated with critical social theory; and helps prepare them to write their major research project. This course is the capstone seminar for the Department of Political Science's Honors Program and is only open to students

enrolled in the Honors Program.

When Offered
Offered in fall.

POLS 4030 - Seminar: Special Topics in Political Science for Undergraduates (3 cr.)

Prerequisites
RHET 1020 and 6 credits at 3000 level in POLS

Description
Selected topics to be investigated under the guidance of a faculty member.

When Offered
Offered occasionally.
Repeatable
May be repeated for credit if content changes
Notes
May be offered as a seminar.

POLS 4033 - Individual Study and Selected Reading (1-3 cr.)

Prerequisites
POLS 1001 or POLS 2003 , RHET 1020 and consent of instructor and department

Description
Guided reading, research, and discussion based on a subject of mutual interest to a student and faculty member.

When Offered
Offered occasionally.

POLS 4035 - Political Sociology (3 cr.)

Prerequisites

9 hours of social science and junior or senior standing.

Description
Social bases of various political systems such as Western-type democracy, authoritarianism, and totalitarianism. Topics include: determinants of political behavior, power, elite formation, bureaucracy, and the political role of the military and intellectuals in Third World societies.

Cross-listed
Same as SOC 4035
When Offered
Offered occasionally.

POLS 4090 - Honors Thesis Seminar (3 cr.)

Description

This course will provide an overarching structure for the development and completion of the thesis component of the honors program in Political Science. Within the seminar structure, you will be guided through the process of turning your research proposal into a completed thesis to be submitted to the department by the end of the semester.

When Offered
Offered in spring.

POLS 4104 - Political Science Methods (3 cr.)

Prerequisites
POLS 3201 and POLS 3202, RHET 1020, Honors status

Description
This course seeks to provide students with a critical understanding of political science methods, the ability to read statistical materials, and to use advanced qualitative and quantitative research methods. Electoral behavior and systems are extensively studied in this course and used to demonstrate how different research methods are applied to study a topic as important as elections.

When Offered
Offered in fall.

POLS 4216 - Race, Class and Gender: Theorizing Political Identity (3 cr.)

Prerequisites
RHET 1020, 6 credits at the 3000 level in POLS.

Consent of Instructor.

Description
This course surveys a variety of contemporary trends in the political theorization of race, gender, and class as they relate to the development of notions of identity in a historical context and as categories of political exclusion and inclusion. Special emphasis will be given to modern and contemporary concepts of identity, including notions of subjectivity, gender, race, culture, class and ethnicity.

When Offered
Offered occasionally.

POLS 4217 - Cosmopolitanism and Global Justice (3 cr.)

Prerequisites
RHET 1020 , POLS 3620, and 3 POLS credits at 3000 level.

Consent of Instructor.

Description
This course considers questions of justice in a global context. It uses case studies and theoretical (historical and contemporary) to explore issues associated with just war, human rights, migration, citizenship, as well as economic, environmental, and social justice across state borders.

When Offered
Offered occasionally.

POLS 4226 - Contemporary Political Islam (3 cr.)

Prerequisites
RHET 1020, 6 credits at the 3000 level in POLS.

Consent of Instructor.

Description
This course is designed to provide an understanding of the phenomenon of political Islam in the Arab and Muslim worlds. It examines the reasons, implications, and consequences of the reassertion of Islam in today's politics. The course is divided into three parts. The first provides a thorough analysis of the main idea and model (s) that inspire contemporary Islamist activists. The second part critically examines the different trends within the Islamic movements and presents case studies of their origins, evolution, dynamics, and limitations. Finally, the course concludes with a critical analysis of the ideas of prominent Islamic thinkers that are considered as main ideologues of political Islam.

When Offered
Offered occasionally.

POLS 4371 - Introduction to Public International Law (3 cr.)

Prerequisites
RHET 1020 and POLS 3620

Description
Introduces students to the practice and theoretical foundations of public International law, covering such topics as source doctrine (customary International law, treaty law, etc.), international personality, jurisdiction, state responsibility, self-determination and the use of force. This course may be counted toward the Dual Degree Option combining a BA in Political Science and an MA in International Human Rights Law.

Cross-listed
Same as LAW 4371
When Offered
Offered in fall and spring.

POLS 4372 - International Law in the Middle East (3 cr.)

Prerequisites
RHET 1020 and POLS 4371

Description

An in-depth treatment of selected issues of contemporary international law. Provides students with an understanding of specialized areas of international law including the use of force and dispute resolution, acquisition of territory, state succession, law of the sea, and international human rights law by focusing on specific issues relevant to the Middle East.

POLS 4373 - Special Topics in Public Law (3 cr.)

Prerequisites
RHET 1020 and 6 credits at 3000 level in POLS.

Consent of Instructor.

Description
Topics drawn from constitutional and administrative law, including related jurisprudence and judicial institutions.

When Offered
Offered occasionally.
Repeatable
May be taken a second time if content changes.

POLS 4374 - Special Topics in Public International Law (3 cr.)

Prerequisites
RHET 1020 and POLS 4371

Description
Specialized areas of international law, such as human rights and humanitarian law.

When Offered
Offered occasionally.

Repeatable
May be taken if content changes.

POLS 4375 - Introduction to Egyptian and Islamic Law (3 cr.)

Prerequisites
RHET 1020, 6 credits at the 3000 level in POLS

POLS 3408

Consent of Instructor

Description

The Egyptian legal system will be considered according to its present structure and historical development including institutions, processes, laws, and the courts. There will be special emphasis on developments in constitutional law and the role played by the constitution in the political context of present day Egypt. The course also offers an introduction to Islamic jurisprudence in the classical doctrine, in the pre-modern Egyptian legal system, and in contemporary Egypt. This course may be counted toward the Dual Degree option combining a BA in Political Science and an MA in International Human Rights Law.

Cross-listed
Same as LAW 4375

POLS 4377 - Law and Development (3 cr.)

Prerequisites
RHET 1020, POLS 3510 and POLS 4371

Description
This course will explore the interface between law and processes of development. by looking critically at what is meant by "law", we will explore the impact of law (however defined) on social and economic development. In so doing, the beneficial and detrimental impacts of law on development will be assessed. The influence of law in the domains of population, constitutionalism, and the environment, among others, will be considered.

When Offered
Offered Occasionally.

POLS 4378 - Introduction to International Human Rights Law (3 cr.)

Prerequisites
RHET 1020

Description

The course provides an overview of the major human rights treaties, customary norms, international institutions and mechanisms of enforcement, while at the same time encouraging a critical stance that questions the role and effect of human rights in a world of distress and inequality. This course may be counted towards the Dual Degree Option combining a BA in Political Science and an MA in International Human Rights Law.

Cross-listed
Same as LAW 4378

POLS 4403 - American Government and Politics (3 cr.)

Prerequisites
POLS 1001 or POLS 2003, RHET 1020, POLS 3401 or instructor approval for non political science majors.

Description

Formation and implementation of public policy, with attention to the structure, powers, and functions of the presidency, the bureaucracy, the Congress, and the federal courts and the forces that influence their actions.

POLS 4405 - Comparative Politics of Contemporary Africa (3 cr.)

Prerequisites
POLS 1001 or POLS 2003, RHET 1020, POLS 3401 (or instructor approval for non political science majors who have not taken POLS 3401)

Description
Introduction to the social arena within which politics occurs and the political arena which helps to shape society in Africa today. Focuses on understanding continuity and change in African politics and societies, and sheds light on both the significant potential of Africa, and the enormous challenges the continent faces.

When Offered
Offered occasionally.

POLS 4420 - Issues in Middle East Politics (3 cr.)

Prerequisites
RHET 1020 and POLS 3401

Description
Selected Topics in Middle East Politics investigated under the guidance of a faculty member. May be offered as a seminar.

When Offered
Offered occasionally.
Repeatable
May be repeated for credit if content changes

POLS 4422 - Contemporary Egypt (3 cr.)

Prerequisites
RHET 1020, POLS 3401, 3 credits at the 3000 level in POLS (or instructor approval for non political science majors)

Description
This course examines the politics of the Egyptian Revolution in 2011; its antecedents, dynamics and aftermath. Aspects of continuity and change in Egyptian politics are examined in light of theories drawn a wide range of cases of political transformation across the world.

When Offered
Offered occasionally.

POLS 4423 - Comparative Government and Politics: Developing Systems (3 cr.)

Prerequisites
POLS 1001 or POLS 2003, RHET 1020, POLS 3401 (or instructor approval for non political science majors)

Description
The government and politics of selected countries in the developing world (Middle East, Africa, Asia, Latin America). Subjects covered may include the structural and functional characteristics of executive, legislative, and judicial institutions; bureaucracy, political parties, mass movements, political culture, the role of public opinion, foreign policy.

When Offered
Offered occasionally.

POLS 4424 - Comparative Government and Politics in Contemporary Eastern Europe and Russia (3 cr.)

Prerequisites
POLS 1001 or POLS 2003, RHET 1020, POLS 3401 (or instructor approval for non political science majors)

Description
The collapse of communism and post-communist political and economic developments. Transition to democracy and market economy. Ethnicity, nationalism and the emergence of nation states. Consideration of the government and politics of selected countries.

When Offered
Offered occasionally.

POLS 4425 - Government and Politics of Egypt (3 cr.)

Prerequisites
POLS 1001 or POLS 2003, RHET 1020, POLS 3401 (or instructor approval for non political science

majors)

Description
Examination of structure and process of the Egyptian government and political life including: the executive, legislative and judicial institutions and their powers; the legislative process; executive policy making; electoral processes; parties and interest groups; and other selected aspects of the interaction between state and society.

When Offered
Offered in fall.

POLS 4432 - Seminar: Comparative Politics and/or Policies (3 cr.)

Prerequisites
RHET 1020, POLS 3401

Description
Selected topics in the field of comparative politics or policies, with concentration on a single country, problem, or policy.

When Offered
Offered occasionally.
Repeatable
May be repeated for credit if content changes.

POLS 4435 - The State and Society (3 cr.)

Prerequisites
RHET 1020, POLS 3401, 3 credits at the 3000 level in POLS.

Consent of Instructor.

Description

The concept of the State is at the center of the study of politics and of our understandings of political and socio-economic problems like ethnic conflict, sectarian strife, law enforcement, economic development and democratization. This course offers a critical study of theories from

Marx, Weber, and other social scientists about the State, its institutions, and its interactions with its society and its citizens.

POLS 4437 - Comparative Politics of Asia (3 cr.)

Prerequisites
POLS 1001 or POLS 2003, RHET 1020, POLS 3401 or instructor approval for non political science majors

Description
This course is designed to provide an overview of politics and governments in different countries of Asia. There will be some historical coverage but we will concentrate on postwar developments. The course will cover all the major countries and a primary focus will be on democratic developments and transitions.

POLS 4438 - Modern China (3 cr.)

Prerequisites
RHET 1020, POLS 3401, 3 credits at the 3000 level in POLS.

Consent of Instructor.

Description
An examination of the evolution of modern China's political system in the light of Chinese history. Areas for consideration will include the structure of Chinese political culture, how communism has served China, how China's past may continue to determine China's future. When there is sufficient interest, and such arrangements are possible, the course will include a two- to three- week trip to China.

When Offered
Offered occasionally.

POLS 4439 - Comparative Politics of the Modern Caucasus and Central Asia (3 cr.)

Prerequisites
POLS 1001 / POLS 2003, RHET 1020, POLS 3401, 3 credits at the 3000 level in POLS.

Consent of Instructor.

Description
The policy of colonization and the collapse of the Soviet multi ethnic empire. New nation states in the post communist era including their relations with the Middle East.

When Offered
Offered occasionally.

POLS 4444 - Comparative Politics of Latin America (3 cr.)

Prerequisites
POLS 1001 or POLS 2003, RHET 1020, POLS 3401 or instructor approval for non political science majors

Description
This course introduces students to the fundamentals of political systems in Latin America. As the most unequal region of the world it has been home to a number of important political phenomena, including military coups, democratic transitions, and popular uprisings. In line with the comparative nature of the course, students will be looking at different countries in the region, as well as cross-regional comparisons.

POLS 4470 - The Politics of Human Rights (3 cr.)

Prerequisites
RHET 1020 and 6 credits at 3000 level in POLS.

Consent of Instructor.

Description
This is a research-oriented class on the politics of human rights in comparative perspective with special reference to issues in Egypt and the Middle East.

When Offered
Offered occasionally.

POLS 4480 - Israeli Politics and Society (3 cr.)

Prerequisites
RHET 1020, POLS 3401 and 3 credits at 3000 level in POLS.

Consent of Instructor.

Description
This course offers an analytic view of a wide variety of political and social aspects of Israel's domestic setting, including: Israel's political system; economy; civil-military relations; new immigrants; as well as the main political and social divisions.

When Offered
Offered occasionally.

POLS 4481 - The Politics of Palestinian-Israeli Relations (3 cr.)

Prerequisites
RHET 1020 and POLS 3620

Description
This course critically examines the politics of Palestinian-Israeli relations. Topics will include, inter alia, the history of political relations between the two communities, and the manner in which the relations have been historicized and politicized, the political economy of the relations, mechanisms of Israel's occupation and the prospects of and for a Palestinian state.

When Offered
Offered occasionally.

POLS 4502 - Political Economy of Egypt and the Middle East (3 cr.)

Prerequisites
RHET 1020, POLS 3510, POLS 3550

Description
This course applies political economy's approaches and tools to the study of Egypt and the contemporary Middle East. It cuts across domestic, regional, and international dynamics within and around the country by tackling the topics of rentierism, the impacts of neoliberal

globalization on development and democratization, state-business and capital-labor relations, revolutions, and popular uprisings. In doing so it examines the political economy of states, regimes, and societies of Egypt and the region.

When Offered
Offered occasionally.

POLS 4513 - International Financial Institutions (3 cr.)

Prerequisites
RHET 1020, ECON 2021, POLS 3620, POLS 3550

Description
The politics of international economics, focusing on the role of the IMF, World Bank, WTO, and other multinational institutions as well as regional financial and economic integration with emphasis on European Union and Middle East and Islamic finance and banking. Special attention will be given to the political dimensions of such issues as debt rescheduling, structural adjustment, international trade regulations, foreign aid, trade wars and embargoes.

When Offered
Offered occasionally.

POLS 4523 - The Political Economy of Poverty and Inequality (3 cr.)

Prerequisites
RHET 1020, POLS 3510, POLS 3550

Description
This course surveys different conceptualizations of poverty and inequality. It covers the different approaches to studying the issue on both global and national levels. Some of the major issues included are: the socio-economic and political characterization of the poor; poverty alleviation; the impact of globalization on poverty and inequality, poverty and gender, and urban and rural poverty; and different approaches to poverty reduction.

When Offered
Offered occasionally.

POLS 4525 - Global Political Economy (3 cr.)

Prerequisites
RHET 1020, POLS 3620, POLS 3550

Description
This course offers an overview of international economic relations from the end of the Second World War to contemporary economic globalization and global production networks that have instituted a new international division of labor. The first portion of the course examines trade, protectionism, and monetary relations. In the second portion, students also examine the consequences of globalization in terms of new developmental opportunities; income inequality across all countries; and regulatory issues relating to labor flows, environment, and sustainability.

When Offered
Offered in spring.

POLS 4526 - Political Economy of the Global South (3 cr.)

Prerequisites
RHET 1020, POLS 3510 and POLS 3550

Description
This course covers the political economy of the main regions and countries of the South, including Latin America, Africa, East Asia, and China, and the theoretical models pertinent to them. It is centred around global political and economic processes that have shaped the current contours of the Global South, such as colonialism, Southern perspectives on global capital accumulation, competing development narratives, foreign aid and humanitarian intervention, rentierism, globalization, and global inequality. The course also focuses on key issues such as poverty, migration, informality, cities, and gender.

When Offered
Offered in fall.

POLS 4542 - Environmental Politics (3 cr.)

Prerequisites
RHET 1020, POLS 3550, one 3000 level Political Science Course.

Consent of Instructor.

Description
This course analyses environmental politics in an international arena. It examines the policies and tactics of a range of actors, including national and local governments, non-governmental and intergovernmental organizations, corporations, mass movements and scientists.

When Offered
Offered occasionally.

POLS 4550 - Business -Government Relations (3 cr.)

Prerequisites
RHET 1020 and POLS 3550

Description
The course will explore interactions and the impact of government and business relations in modern economies. It will first look at some of the key theoretical issues and then examine the nature of this relationship in a comparative international context.

When Offered
Offered occasionally.

POLS 4551 - Theories of Political Economy (3 cr.)

Prerequisites
RHET 1020, POLS 3550

Description
This course provides an in-depth look into the theories of modern political economy. It introduces the methodological and ideological diversity of schools and traditions of political economy, ranging from the left to the right. The syllabus covers key topics tackled by political

economy, such as free markets, industrialization, the state, labor-capital relations, revolutions, and economic development. The course allows students to engage immediately and critically with political economy's formative texts and their basic concepts.

When Offered
Offered in spring.

POLS 4560 - Development Studies Seminar (3 cr.)

Prerequisites
RHET 1020 and 12 credit hours of social science courses.

Description
Interdisciplinary and comparative analysis of development as a process and as a historical phenomenon. Critical evaluation of economic, political, social, and cultural technological and managerial factors that structure developmental change.

Cross-listed
Same as SOC 4560.
When Offered
Offered occasionally.

POLS 4565 - Special Topics in Development and Political Economy (3 cr.)

Prerequisites
RHET 1020, POLS 3510, POLS 3550

Description
This course introduces students to a selected topic in the fields of development and political economy.

When Offered
Offered occasionally.

POLS 4605 - International Politics of the Middle East (3 cr.)

Prerequisites
RHET 1020 and POLS 3620

Description
This course examines the relationships of the Middle East to the great powers of our time, with emphasis on the political, military, economic and cultural impact of these powers on shaping the region, and its future.

When Offered
Offered occasionally.

POLS 4608 - Critical Approaches to International Relations and the Global South (3 cr.)

Prerequisites
RHET 1020 and POLS 3620

Description

This course subverts and critiques Eurocentrism in global politics and provides students with the full scope of critical scholarship available in the field. With this course, students will become familiar with the contemporary transformations of the discipline of International Relations and will be prepared for further engagement, independent research, and possible graduate studies.

POLS 4609 - International Organizations (3 cr.)

Prerequisites
RHET 1020 and POLS 3620

Description

This course examines the structure and evolution international organizations, both intergovernmental (IOs) and non-governmental (NGOs), with an emphasis on the United Nations system, its specialized agencies, and recent issues of global governance.

POLS 4610 - Global Security (3 cr.)

Prerequisites
RHET 1020 and POLS 3620

Description

This course encompasses the study of international crises, conflict, war, and global insecurities. It covers critical security studies to understand the challenges underpinning traditional approaches to security. Diverse topics including human security, migration, climate change, and international terrorism will be studied with a focus on the changing nature of international security.

POLS 4611 - Comparative Foreign Policy Analysis (3 cr.)

Prerequisites
RHET 1020, POLS 3620

Description

This course investigates the processes involved in foreign policy decision-making. This focus will be on understanding the contexts, constraints, and influences which foreign policy decision-makers have to deal with. This is combined with specialized knowledge of the post-1945 foreign policies of major and emerging states in the international system.

POLS 4614 - Egyptian Foreign Policy (3 cr.)

Prerequisites
RHET 1020 and POLS 4611

Description
This course examines the main themes of Egyptian foreign policy from 1952 to the present. This includes: Egypt's relations with the great powers; inter-Arab relations, the Arab League, and the Gulf Cooperation Council; the effects on foreign policy of the Arab-Israeli conflict; relations with the Non-Aligned Movement, the Islamic Conference, and the Organization of African Unity. It also covers policy concerns of the national interest including Nile waters and the Suez Canal.

When Offered
Offered occasionally.

POLS 4615 - U.S. Foreign Policy (3 cr.)

Prerequisites
RHET 1020 and POLS 4611

Description
This course examines the major issues and processes of U.S. foreign policy. It focuses on the post World War II era, including processes of policy formulation and the values that are manifested in U.S. foreign policy. This is explored in the context of specific issue areas.

When Offered
Offered occasionally.

POLS 4640 - Seminar: Special Topics in International Relations for Undergraduates (3 cr.)

Prerequisites
RHET 1020 and POLS 3620

Description
This course investigates special issues or themes in international relations under the guidance of a faculty member.

When Offered
Offered occasionally.
Repeatable
May be repeated for credit if content changes.

POLS 5130 - Seminar: Special Topics in Political Science (3 cr.)

Prerequisites
Junior standing, RHET 1020, 6 credits at the 3000 level in POLS (if taken towards fulfillment of an undergraduate degree).

Description
This course investigates special topics under the guidance of a faculty member.

Repeatable
May be repeated for credit if content changes.

POLS 5140 - Seminar: Special Topics in International Relations (3 cr.)

Prerequisites
RHET 1020, POLS 3620, Junior standing (if taken towards fulfilment of an undergraduate degree).

Description
Selected topics to be investigated under the guidance of a faculty member.

Repeatable
May be repeated for credit if content changes.

POLS 5201 - Comparative Theory (3 cr.)

Description
An examination of the field of Comparative Politics and major relevant theories, approaches to research, and analysis. Required of all students in the Comparative Politics Specialization.

POLS 5202 - Scope and Method of Developmental Analysis (3 cr.)

Description
This course offers students a critical review of the theories, models, and methodologies relevant to the study of development using a political economy approach. The first part of the course discusses major paradigms and theories in the realm of development and their application to various regions. The second part of the course explores some major issues impacting developmental trajectories as well as some major outcomes of development such as trade, foreign aid, inequality, and environmental challenges.

POLS 5203 - International Relations Theories (3 cr.)

Description
This course provides a critical review of major theories and concepts in international relations,

and explores the relevance of theory to contemporary world politics. Special attention will be given to the development of theoretical and research skills needed for the conducting of graduate research and the writing of graduate thesis.

POLS 5204 - Advanced Political Science Methods (3 cr.)

Description

The course provides students with a critical understanding of and training in quantitative and qualitative research methods in political science. It helps students draft thesis proposals according to the department guidelines by working on applying examined/studied research methods to their tentative research projects. Students should enroll in this course in their second semester in the program. The topics covered include: the design of research projects, methods to gather and analyze data, and the ethical problems involved in conducting social science research.

POLS 5205 - Identity, Culture and Norms in Middle East Politics and Societies (3 cr.)

Description

The course studies identities, cultures and norms in the Middle East. It explores, inter alia, the construction of domestic and state identities and the making of norms and cultures, as well as the intersection of these three elements in the region.

POLS 5206 - Foundations of Political Philosophy (3 cr.)

Description

This course surveys the main thinkers and themes of political philosophy. Each year, students will organize their readings around a particular theme. Possible themes include power, history, liberty, equality, identity, and justice. Students will critically assess their own opinions in the light of the theories examined in the course, and address issues of contemporary importance in theoretical context where appropriate.

POLS 5208 - Critical Approaches to International Relations Theories (3 cr.)

Prerequisites

POLS 5203 or approval of instructor.

Description
This course explores interdisciplinary and critical approaches to international relations. Critical theory in contemporary international relations has emerged as a key approach and perspective in the field and also produced stimulating formulations in other disciplines such as sociology, anthropology, history, and law. This course problematizes and interrogates the basic units of politics including concepts and notions of: the state, sovereignty, representation, nation, borders, identity, citizenship, and membership.

POLS 5209 - Race, Gender, and Sexuality in International Relations (3 cr.)

Description
This course considers the histories and politics of modernity, race, gender, and sexuality. The aim of this course is to explore issues in international relations by framing discussions within the interrelated contexts of race, gender, and sexuality. Students taking this course are encouraged to make interventions in case studies and international theory through these lenses.

POLS 5210 - Global Governance and World Order(s) (3 cr.)

Description
This course explores the ideas, institutions and practices of global governance, multilateralism and world order. A range of theoretical frameworks and case studies examine the role of social forces, state and non-state actors, issues such as cooperation and regulation, discourses of imperialism and institutional mechanisms in the current world order.

POLS 5220 - Protracted Social Conflicts (3 cr.)

Description
Protracted social conflicts (PSCs) are endemic conflicts based on horizontal inequalities such as ethnicity, religion, race and gender. This course will examine how PSCs affect development priorities, the distribution of income and services, etc; which exacerbates unequal access to economic resources and benefits, which in turn intensifies hatred and conflict on non-class demarcation lines.

POLS 5225 - International Political Economy (3 cr.)

Description
Patterns of the evolution, organization and functioning of the global political economy including the role of states and other international actors; theory and practice of international regimes and global issues of the third millennium.

POLS 5230 - Regime Change and Democratization (3 cr.)

Prerequisites
POLS 5201

Description
The course addresses the academic debate on authoritarianism, regime change, and democratization in theoretical and empirical perspective. Conceptual approaches include regime type analysis, theories of democratic transition and consolidation, and hybrid regimes. Empirical cases compare developments in different world regimes.

POLS 5233 - Middle East Conflicts (3 cr.)

Description
This course examines the different factors contributing to conflicts in the Middle East, including sectarian, ethnic, religious and international factors. In addition to offering an analysis of conflicts in the region, the course also surveys the impact of such conflicts on the region and the international world order, as well as regional and international actors' engagement with those conflicts.

POLS 5236 - Contemporary Issues in Political Islam (3 cr.)

Description
This course is designed to examine current intellectual, economic, political, and foreign policy issues in political Islam. Among the topics that will be analyzed are political Islam and the challenges modernity,; secularism; the Islamic state; democracy and pluralism; human rights; women; Islamic economic system; and globalization.

POLS 5240 - Politics of Modern Egypt (3 cr.)

Description
This course offers an in-depth analysis of the nature and dynamics of modern Egyptian politics. Assessments of the Nasser, Sadat and Mubarak presidencies are followed by a treatment of the major issues and themes confronting and shaping Egypt's contemporary political arena.

POLS 5244 - Comparative Politics of Europe (3 cr.)

Description
Considers the governance structures, processes, and patterns of politics in major states, institutions of the EU, and international organizations.

POLS 5245 - Development Politics and International Cooperation (3 cr.)

Description
This course examines the main features of the politics of development and international development cooperation, including, but not limited to, conceptual issues such as changing understandings of development, as well as theoretical approaches to explaining development or its absence

POLS 5250 - Comparative Politics of Asia (3 cr.)

Description
The general aim of this course is to acquaint the student with an overall historic view of contemporary Asian politics, in an evolving international political and economic environment. The course is divided into two parts: (I) an introduction to the continent, and to Comparative Politics; and (II) five case studies, most of them covering more than one country, which will be thought alternatively, according to the availability of lecturers, 2-3 cases studies per semester.

POLS 5251 - Comparative Politics of Africa (3 cr.)

Description
The course provides an in-depth examination of the nature and dynamics of African politics. It explores issues related to state formation; post-colonial development processes; conflicts and

civil wars; attempts at regional and sub-regional cooperation and integration and Africa international political and economic relations in the globalization era.

POLS 5252 - Arab-American Relations (3 cr.)

Description
This is a course which will introduce students to the growing importance of Arab-American relations in the post Cold War era. Informed by conceptual approaches in International Relations, it will examine changing patterns in political and strategic relationships, and will also assess the impact of US policy on some of the crucial regional issues which cause serious concerns to the governments and peoples of the region.

POLS 5254 - Comparative Foreign Policy: Theories and Applications (3 cr.)

Description
Patterns of the international system are greatly shaped by the strategies, objectives, and decisions of states, i.e. their foreign policies. Consequently, this course deals with the sources, processes and outcomes of these policies and how far they shape the global arena.

POLS 5255 - Conflict and Security in Global Politics (3 cr.)

Description
This course examines, theoretically and through case studies, conflict and security in world politics. This includes analysis of the dynamics of inter-state, ethnic, and anti-imperial and -colonial conflict, as well as security arrangements, from balance of power to regional and global security regimes.

POLS 5258 - Comparative Politics of the Middle East (3 cr.)

Prerequisites
POLS 5201 or POLS 5202

Description
This course considers polity, economy, and society as interconnected areas for research in comparative politics; the impasse debate about theory in Middle East politics is explored in

relation to comparative work on other areas and analysis of representative studies. It also examines materials relevant for studying the Middle East and practice in formulating a research proposal and in developing an agenda for research.

POLS 5261 - Public Policy and Development (3 cr.)

Prerequisites
ECON 2021 and POLS 5202

Description
Public policy-making considered within contexts of current policy debates. Historical perspectives emphasized, as well as the effects of the globalization of trade, rise of multinationals, and the parameters of effective policy making at national and sub-national levels.

POLS 5270 - Special Topics in Political Science for Graduates (1-3 cr.)

Description
Alternating selected Topics to be investigated and reported.

Repeatable
May be taken more than once if content changes.

POLS 5271 - Seminar: Special Topics in International Relations for Graduates (1-3 cr.)

Description
Issues in international relations regionally or topically defined. Each student will investigate an aspect of the topic as defined, researching it and reporting on it within the seminar context.

Repeatable
May be taken more than once if content changes.

POLS 5280 - Independent Study and Readings (1-3 cr.)

Prerequisites

Department Approval.

Description
Guided individual readings and/or research on a subject of mutual interest to student and faculty member.

Repeatable
May be taken more than once upon department approval.

POLS 5286 - Project Management in Development (3 cr.)

Description
This special seminar for the development studies specialization offers practical skills integral for working in the development field. It includes the examination, specification and identification of problem areas in developmental practices; conceptualization and design of programs and projects and their implementation; designing project proposals as well as monitoring and evaluation of projects . Students will be assessed through a variety of practical exercises, essays and research projects.

POLS 5299 - Research Guidance and Thesis (no cr.)

Description

This course involves working with a thesis supervisor to prepare/ write the Masters thesis. Students should continue to register in POLS 5299 until thesis completion.

Production /Operations Management

OPMG 2101 - Statistics for Business (3 cr.)

Prerequisites
MACT 1112 or ECON 2061

Description
Basic concepts and applications of statistical analysis in business decisions. Methods include probability, risk analysis, estimation, forecasting, analysis of variances, and regression analysis.

When Offered
Offered occasionally.
Notes

Enrollment in this course is limited, and priority is given to students from within the major, students enrolling in this course to complete a collateral requirement in another major, and students who have declared business administration as a minor.

OPMG 3201 - Operations for Sustainable Advantage (3 cr.)

Prerequisites
ECON 2061 or MACT 2222 or MACT 3223 or MACT 3224 or PSYC 2000 or SOC 3103

Description

Sustainable Operations Management focuses on the efficient and ethical management of business processes to drive sustainability. The course addresses the urgent need to align operations and business strategies with social and environmental goals while extending the core topics of operations management. Using real business cases, it explores key areas such as forecasting techniques, product and service design incorporating recycling and re-manufacturing principles, optimality in capacity planning and facility layouts, and effective inventory management. Additionally, it emphasizes quality management that maintains safety and ethical standards and provides smart applications within Industry 4.0 and green systems that allow organizations to optimize profitability while adhering to sustainability standards. In this course, students will learn to formulate sustainable operations strategies and manage tactical and operational activities, enhancing sustainability performance overtime.

When Offered
Offered in fall and spring.
Notes

Enrollment in this course is limited, and priority is given to students from within the major, students enrolling in this course to complete a collateral requirement in another major, and students who have declared business administration as a minor.

OPMG 4102 - Quantitative Approach to Management (3 cr.)

Prerequisites

OPMG 4202

Description
Topics like the philosophy and techniques of operations research, the theory of probability, inventory models, utility and decision game theory, linear programming, queuing models, and simulation methods are emphasized.

When Offered
Offered occasionally.
Notes

Enrollment in this course is limited, and priority is given to students from within the major, students enrolling in this course to complete a collateral requirement in another major, and students who have declared business administration as a minor.

OPMG 4202 - Production/Operations Management II (3 cr.)

Prerequisites
OPMG 3201

Description
Current theory and practice in the planning, operating, and control of production/service systems. Topics include: production planning, purchasing and materials management, quality assurance, and productivity analysis.

When Offered
Offered in fall and spring.
Notes

Enrollment in this course is limited, and priority is given to students from within the major, students enrolling in this course to complete a collateral requirement in another major, and students who have declared business administration as a minor.

OPMG 4203 - Business Process Management and Simulation (3 cr.)

Prerequisites
OPMG 3201

Description
Initiatives in quality (TQM), time-based competition, balanced score card, business simulation and business dynamics, including recent development in benchmarking and business process reengineering, with particular attention given to process management through supporting process design and improvement.

When Offered
Offered in fall.
Notes

Enrollment in this course is limited, and priority is given to students from within the major, students enrolling in this course to complete a collateral requirement in another major, and students who have declared business administration as a minor.

OPMG 4204 - Service Operations and Strategy (3 cr.)

Prerequisites
OPMG 3201

Description
Service organizations are dominating the global economy in terms of GDP share and employment, this is even more acute in the Egyptian economy. As such, the need to know how to design, operate and analyze service operational systems is more crucial than ever. This course covers the basic principles behind the design and operation of service enterprises with focus on service facility design, location, demand management, yield management and service capacity planning. Industries which could be considered include tourism, hospitality, financial, health care and government operations.

When Offered
Offered in spring.
Notes

Enrollment in this course is limited, and priority is given to students from within the major, students enrolling in this course to complete a collateral requirement in another major, and students who have declared business administration as a minor.

OPMG 4301 - Supply Chain Management (3 cr.)

Prerequisites
OPMG 3201

Description

The integrative managerial issues and challenges related to developing and implementing a firm's supply chain strategy. Attention is directed to the supply chain strategy mission confronted by varied types of business organizations.

When Offered
Offered in fall and spring.
Notes

Enrollment in this course is limited, and priority is given to students from within the major, students enrolling in this course to complete a collateral requirement in another major, and students who have declared business administration as a minor.

OPMG 4970 - Special Topics in Production / Operation Management (3 cr.)

Prerequisites
Consent of Instructor.

Description
Considers selected topics of current relevance in Production / Operation Management.

When Offered
Offered occasionally.
Notes

Enrollment in this course is limited, and priority is given to students from within the major, students enrolling in this course to complete a collateral requirement in another major, and students who have declared business administration as a minor.

OPMG 4975 - Independent Study in Production/Operation Management (1-3 cr.)

Prerequisites
Senior standing and consent of OPMG unit head and chair.

Description
Guided readings, research, and discussions on specific selected topic in Production/Operation Management.

When Offered
Offered occasionally.
Notes

Enrollment in this course is limited, and priority is given to students from within the major, students enrolling in this course to complete a collateral requirement in another major, and students who have declared business administration as a minor.

OPMG 5201 - Introduction to Business Statistics (3 cr.)

Description
This course provides a basic introduction to statistics as applied to finance, business, and accounting problems. Conceptual understanding of the concepts is stressed. Students will learn both limitations of statistics and how to interpret results. Hands-on experience in applying the concepts using Excel and SPSS is an integral part of the course. Topics include graphical & tabular descriptive techniques, random variables and descriptive probability distributions, continuous probability distributions, sampling distributions, estimation, hypothesis testing, regression analysis, and analysis of variance. Application areas used include finance (e.g., portfolio construction), operations (e.g., statistical process control), and marketing.

When Offered
Offered in fall and spring.

OPMG 5202 - Operations and Supply Chain Management (3 cr.)

Description
This course provides a basic understanding of manufacturing and service operations, and their role in the organization. The course also covers the foundations of Supply Chain Management. Topics covered include process analysis, process capacity, quality management and control, forecasting, inventory control, distribution and logistics. Topics are covered with emphasis on managerial, applications-oriented perspective.

OPMG 5211 - Statistics in Business (1.5 cr.)

Prerequisites
Co-requisite: FINC 5211

Description
This course provides a basic introduction to statistics as applied to finance, business, and accounting problems. Conceptual understanding of the concepts is stressed. Students will learn both limitations of statistics and how to interpret results. Hands-on experience in applying the concepts using Excel and SPSS is an integral part of the course. Topics include graphical & tabular descriptive techniques, random variables and descriptive probability distributions, continuous probability distributions, sampling distributions, estimation, hypothesis testing, regression analysis, and analysis of variance. Application areas used include finance (e.g., portfolio construction), operations (e.g., statistical process control), and marketing.

OPMG 5301 - Managing and Coordinating Supply Chains (3 cr.)

Prerequisites
BADM 5310

Description
Supply Chain Management (SCM) deals with the efficient and effective flow of goods, services, information and financial resources through a network of suppliers, transformation facilities, distribution sites and customers. The goal of this course is to understand how supply chain decisions impact the performance of the firm as well as the entire supply chain. This course covers the major issues in supply chain management, including: definition of a supply chain; role of inventory; bullwhip effect and information sharing; vendor-managed inventories and other distribution strategies; third-party logistics; managing product variety; information technology and supply chain management; international issues. SCM focuses on managing material and information outside of the factory walls including aspects of sourcing, product design collaboration, demand planning and forecasting, inventory deployment, distribution system design, channel management, procurement, and logistics. We explore order fulfillment strategies and the impact of the Internet on distribution and back-end supply chain processes. We also examine strategies for enterprise integration.

When Offered
Offered occasionally.

OPMG 5302 - Managing Dynamic Projects (3 cr.)

Prerequisites
BADM 5310

Description
To compete successfully many organizations provide unique goods and/or services which are delivered via "projects." These include the professional services firms that provide a broad portfolio of services supporting their clients' projects. Even organizations that do not regularly engage in projects often utilize projects to enable organizational, process or technological change. In all cases effective management of projects is required in order to achieve the overarching project goal of customer satisfaction. The course focuses on strategies and tools useful in management of projects. Topics covered include efficient & effective management of tasks within individual project, project portfolio management. Managing distributed development, and common classification of project types.

When Offered
Offered occasionally.

OPMG 5303 - Data Analysis (3 cr.)

Prerequisites
BADM 5310

Description
This course uses the Excel/VBA environment for developing models. Students will develop spreadsheets and write programs for forecasting, financial price simulation, option pricing, and financial statements. Add-ins are used for optimization, simulation, and decision analysis.

When Offered
Offered occasionally.

OPMG 5305 - Operations Strategy (3 cr.)

Prerequisites
BADM 5310

Description
In this course we examine how firms can develop a competitive edge via excellence in operations strategy formulation and implementation. We study how companies can design operations to compete based on cost, quality, flexibility, or service. We will also study different scenarios in which firms make structural strategic decisions; dealing with "hard" issues such as technology choice, capacity expansion, and factory focus; and infrastructural strategic decisions; dealing with "softer" issues such as quality management & benchmarking, and procedures for global sourcing & inter-functional coordination.

When Offered
Offered occasionally.

OPMG 5306 - Business Dynamics (3 cr.)

Prerequisites
BADM 5310

Description
This course introduces system dynamics modeling for the analysis of business policy and strategy. Students will learn to visualize and analyze a business organization in terms of the structures and policies that create dynamics and regulate performance. A common theme that runs through the course is the search for connections between the behavior of people (and groups) in organizations and the organizational trajectories they generate; and how interactions among physical, cognitive, social, and informational factors in various organizational settings lead to dynamic behavior over time. We will also introduce" management flight simulators" that allow us to experience the long term side effects of decisions, systematically explore new strategies, and develop our understanding of complex systems.

When Offered
Offered occasionally.

OPMG 5370 - Selected Topics in Operations Management (3 cr.)

Prerequisites
BADM 5310

Description
It considers selected topics of current relevance in Operations Management.

When Offered
Offered occasionally.

OPMG 5375 - Independent Study in Operations Management (1-3 cr.)

Prerequisites
Prerequisite: Consent of OPMG unit head and chair.

Description
Guided readings, research, and discussions on specific selected topic in Production/Operation Management.

When Offered
Offered occasionally.

Psychology

PSYC 1000 - Introduction to Psychology (3 cr.)

Description
Survey of the general field of psychology. Topics include the history of psychology, research methods, biological aspects of behavior, sensation and perception, learning and memory, cognition and language, consciousness and cognitive abilities, motivation and emotion, human development, health and stress, personality, psychological disorders and their treatment, and the social aspects of behavior.

When Offered
Offered in fall and spring.

PSYC 1098 - Fundamentals of Neurosciences (3 + 1 cr.)

Description
How does our brain drive our daily thoughts, actions, emotions, and memories? This course will explore the wonders and mysteries of the human brain, from a biological and psychological perspective. Students will learn about the "nuts and bolts" of the nervous system, including how the brain and mind control our actions, decisions, emotions, and memories.

Cross-listed
Same as BIOL 1098

PSYC 2000 - Introduction to Psychological Statistics (3 cr.)

Description
Basic Introduction to the application and interpretation of statistical analysis in psychology. Begins with statistical methodology, branches of statistics, definition of a variable and its measurement. Topics include frequency tables and graphs, central tendency, variability, probability distributions, normal distribution, estimation, significant tests, comparison of two or more groups, association between categorical variables, regression, correlation. Use of SPSS software.

When Offered
Offered in fall and spring.

PSYC 2099 - Selected Topics in Psychology (3 cr.)

Description
Selected topics of interest for the core curriculum. Topics will vary depending on contemporary trends in the field of psychology and may reflect interdisciplinary content.

When Offered
Offered occasionally.

PSYC 2100 - Research Methods for Psychology (3 cr. + 1 cr. lab)

Prerequisites
PSYC 1000 and PSYC 2000

Corequisites RHET 1020 and LALT 1020

Description
Review of qualitative and quantitative research methods that form the empirical basis of contemporary psychology. Progresses from the logic of scientific discovery and comprehension of research literature to the formulation, design, conduct, analysis, and reporting of specific research projects. The laboratory will provide applied exercises to facilitate an understanding of the research methods and mentorship in the comprehensive development and implementation of student research project required for this class.

When Offered
Offered in fall and spring.

PSYC 2200 - Foundations of Qualitative Inquiry in Psychology (3 cr.)

Prerequisites
PSYC 1000

Description

This course introduces students to the foundations of qualitative inquiry in psychology, including research design, data collection (interviews, observations, and document analysis), and various approaches to coding and analysis. Students will also examine issues of ethics, reflexivity, and researcher positionality while gaining the skills to design and evaluate qualitative studies.

When Offered
Offered in fall and spring.

PSYC 2201 - Introduction to Community Development (3 cr.)

Description

Introduce the students to the different concepts and approaches to community development as well as to community organizing. Utilizes a critically reflective framework as part of the curriculum to overcome the potential division between theory and practice. Identifies the key issues that the students are likely to confront in community development and organizing work.

Cross-listed
Same as SOC 2201
When Offered
Offered in fall.

PSYC 3002 - Personal Growth and Adjustment (3 cr.)

Prerequisites
PSYC 1000

Description
This course covers personal psychological adjustment with a focus on the practical and applied aspects of psychology as opposed to theoretical. Students will learn to apply psychological knowledge toward developing and achieving goals. Topics will include personal change, health, stress management, relationships and intimacy, communication, study skills, career development, and time management. For the course learning outcomes to be successfully attained, students will develop and implement a community-based learning project.

When Offered
Offered in fall or spring.

PSYC 3003 - Community Psychology (3 cr.)

Prerequisites
PSYC 1000

Description
This course will introduce students to theory and practice in community psychology. The practice of community psychology is directed towards the design and evaluation of strategies to prevent social pathologies such as crime, widespread drug abuse, and domestic violence, and promote community empowerment and healthy group coping strategies. While these strategies are, of course, aimed at promoting mental health in the individual, the idea is to target the social system of which he/she is a part and thus create a psychologically healthy setting for many individuals.

When Offered
Offered in fall and spring

PSYC 3010 - Social Psychology (3 cr.)

Prerequisites
PSYC 1000

Description
The extension of general psychological principles and methods to the study of interaction with social and physical environment. The nature and methodology of research in social psychology. The major theoretical concepts and their applications and contributions to a variety of areas in the field including development and socialization, social perception and attribution of causality, attitude formation and changes, pro- and anti-social behavior, interpersonal attraction and intimacy, and the social effects and functions of groups.

Cross-listed
Same as SOC 3010.
When Offered
Offered in fall and spring.

PSYC 3011 - Educational Psychology (3 cr.)

Prerequisites
PSYC 1000

Description
Educational Psychology introduces psychological principles, theories, and methodologies to issues of teaching and learning in education. The role of psychology of education in studying and influencing teaching and learning will be explored with an emphasis on direct application to planning, implementing, and evaluating instruction in the classroom.

When Offered
Offered in fall or spring

PSYC 3021 - Psychology of Love and Attraction in Egypt (3 cr.)

Description
An overview of the psychology of love in the Egypt context. Explorations of psychological theories of love, attraction, attachment, and others. Topics include the relationship life cycle in Egypt including courtship and marriage. A psychological lens is used to examine conflict and divorce within the Egyptian context, as well as interventions aimed at promoting healthy relationships.

PSYC 3022 - Psychology of Inclusion and Exclusion in Egypt (3 cr.)

Description
Analysis of the experiences of social exclusion in Egypt from a psychological perspective. Overview of social psychological principles that underlie intergroup dynamics and tensions, and psychological consequences of stigma and discrimination. Review of evidence-based interventions for enhancing social cohesion. Topics may include: disability, socioeconomic status, sexism, LGBTQI, refugees, and religious minorities.

PSYC 3040 - Lifespan Development (3 cr.)

Prerequisites
PSYC 1000 .

Description
The study of human growth and development across the lifespan with emphasis on normal growth and milestones achieved in the physical, cognitive, social, and emotional systems. Educational and familial contexts are highlighted. Students will develop an understanding of the concepts, methods, and research findings central to the study of developmental psychology.

When Offered
Offered in fall and spring.

PSYC 3080 - Cognitive Psychology (3 cr.)

Prerequisites
PSYC 2100

Description
Current research and theory concerning mental processing and mental structures. Emphasis on the processes of perceiving, learning, remembering, and thinking. The merits and limitations of studying these processes from an information-processing perspective.

When Offered
Offered in Fall and Spring.

PSYC 3130 - Learning and Behavioral Psychology (3 cr.)

Description
Reviews the fundamentals of the processes of learning, memory and conditioning, emphasizing both classical and operant conditioning in human and animal models. It is followed by an exploration of the techniques and theories of behavioral psychology in the applied setting.

When Offered
Offered in Fall and Spring.

PSYC 3202 - Participatory Action Research in Community Settings (3 cr.)

Prerequisites
Three hours of Social Sciences.

Description

This course will introduce students to the appropriate research methodologies when dealing with community organizing and development, particularly the participatory action research approach to community development.

Cross-listed
Same as SOC 3202
When Offered
Offered in fall.

PSYC 3270 - Theories of Personality (3 cr.)

Prerequisites
PSYC 1000

Description
The study of the development and dynamics of personality from a variety of theoretical perspectives, including psychoanalytic, cognitive, behavioral, trait, biological, and humanistic. A critical analysis of the theories includes discussion of cultural and historical contexts and examination of scientific evidence.

When Offered
Offered in fall and spring.

PSYC 3420 - Psychopathology (3 cr.)

Prerequisites
PSYC 1000

Description
Formerly known as "Abnormal Psychology". Different theoretical approaches and empirical studies of causes, symptoms, and treatment of psychopathology. Problems and advantages of creating a classification scheme for psychological disorders. The major diagnostic categories and review of the more common patterns of psychopathology. How such disorders arise from subtle interactions between organic or psychological predispositions.

When Offered
Offered in Fall and Spring.

PSYC 3800 - Biopsychology (3 cr.)

Prerequisites
BIOL 1011 or BIOL 1098/PSYC 1098 and PSYC 1000

Description
This course explores the relationship between the nervous system and behavior. Topics include biopsychology as a neuroscience, brain structures and functions, sensory and motor systems, human motivation, cognition, emotion and mental health.

When Offered
Offered in fall and spring

PSYC 4001 - Supervised Research in Psychology (1-3 cr.)

Prerequisites
PSYC 2100 , minimum B average, and permission of instructor.

Description
Student will assist with a research project by working under the individual guidance of a Psychology faculty member or a faculty member from another department conducting interdisciplinary research relevant to psychology. Requirements may include library research, data collection, data entry, statistical analysis, qualitative analysis, report-writing, and assistance in planning or implementing parts of a research project.

When Offered
Offered occasionally.
Repeatable
May be repeated for credit if content changes. May not be taken for more than 6 credits per faculty advisor during the student's academic path.

PSYC 4002 - Independent Study (1-3 cr.)

Prerequisites
Prerequisites: a minimum B average, consent of the instructor, and approval by the Unit Head and the Department Chair.

Description
In exceptional circumstances some seniors and graduating seniors with department approval may arrange for independent study on a chosen topic in Psychology that is not covered in the regular offerings for that academic year. Guided readings, research and frequent consultations held.

When Offered
Offered in fall and spring.

Repeatable
May be repeated for credit if content changes

PSYC 4011 - Cultural Psychology (3 cr.)

Prerequisites
PSYC 1000 and junior or senior standing.

Description
This course will explore the nature of different psychological systems (or "ethnopsychologies") that exist throughout the world and the complex relation of these to western psychology. Topics to be covered include the relationship of culture to human development, personality, psychopathology, and psychotherapy, paying particular attention to the impact of social change and cultural contact. This course will also address some major issues in applied psychology from a cultural and international perspective. The successful student will leave this course with an appreciation of the cultural underpinnings of western psychology, an in-depth understanding of the limitations of universalist perspectives, and a new appreciation for cultural and psychological diversity.

When Offered
Offered occasionally.

PSYC 4012 - Psychology of Gender (3 cr.)

Prerequisites
PSYC 1000 and junior or senior standing.

Description
This course will examine what is the difference between gender and sex and how does gender influences human functioning. The course will focus on theories that explain gender differences within the field of psychology. Students will develop an understanding of the differences between the sexes in areas such as intelligence, emotion, personality, interpersonal relationships & psychopathology.

When Offered
Offered occasionally.

PSYC 4013 - Psychology of Trauma (3 cr.)

Prerequisites
PSYC 1000 and junior or senior standing.

Description
This course will introduce students to the psychology of trauma. The course will place emphasis on interpersonal trauma and betrayal on both the individual and institutional levels. Topics to be covered include childhood trauma, adult sexual assault, war, and domestic violence, and the perspectives of perpetrators of violence. An important focus of the course will involve considerations of how socio-political contexts affect trauma research and intervention.

When Offered
Offered occasionally.

PSYC 4014 - Child Psychology (3 cr.)

Prerequisites
PSYC 3040

Description
Child psychology familiarizes students with contemporary theoretical and applied issues related to child development. The course discusses theories and contemporary models of child development, and may include an emphasis on children with special cognitive, emotional and medical needs. The course includes content relevant to the local context.

When Offered
Offered occasionally

PSYC 4015 - Psychological Anthropology (3 cr.)

Prerequisites
6 hours of anthropology, 6 hours of psychology, and junior or senior standing

Description
Interdisciplinary and cross-cultural approach to the study of the reciprocal relations of culture

and personality; special focus on themes of identity, socialization, and the emergence of self in various cultural settings.

When Offered
Offered occasionally.

PSYC 4016 - Introduction to Forensic Psychology (3 cr.)

Prerequisites
PSYC 1000 and junior or senior standing.

Description
This course will provide an introduction to forensic psychology and the numerous ways that psychology interacts with the law. Forensic psychology addresses the application of psychological research, methods, and expertise to issues that come before the legal system. Topics to be covered may include insanity, competency, jury-selection, expert-testimony, decision making, criminal profiling, psychopathy, violence risk assessment, and offender treatment programs.

When Offered
offered occasionally.

PSYC 4022 - Industrial/Organizational Psychology (3 cr.)

Prerequisites
PSYC 3010 and PSYC 3270 .

Description
This course provides students with the understanding of the scientific basis and professional practice of industrial/organizational psychology. Topics include personnel selection and placement, training and development, performance appraisal, organizational development, quality of work life, and ergonomics.

When Offered
Offered occasionally.

PSYC 4030 - History and Systems of Psychology (3 cr.)

Prerequisites
Junior or senior standing and 15 hours of psychology.

Description
The course covers the history, methods, and content of modern psychological theory, research, and application. It also reviews schools of psychology (e.g., structuralism, functionalism, behaviourism, Gestalt psychology) and central theories of psychology in their historical and philosophical context. The course goals are to familiarize students with how the social and intellectual forces throughout history have shaped the field of psychology and how psychology today is rooted in them.

When Offered
Offered in fall and spring.

PSYC 4062 - Clinical Psychology (3 cr.)

Prerequisites
PSYC 3270 ,PSYC 3420 and PSYC 3800

Description
This course will cover the history and current state of the field of clinical psychology. Topics that will be covered include clinical assessment, clinical interventions, psychotrauma, and clinical theories. This course is intended for advanced undergraduate students who are considering graduate work or practical work in fields related to clinical psychology.

When Offered
Offered in fall and spring.

PSYC 4063 - Advanced Community Psychology (3 cr.)

Prerequisites
PSYC 1000 ,PSYC 3003

Description
Provides an advanced introduction to theory and practice in community psychology, incorporating experiential community based learning as an integral part of the course

requirements. Builds upon theories and concepts covered in Psychology 3003 (Community Psychology) by introducing special topics of particular importance to Egypt. Topics and skills covered may relate to oppression and liberation, social action, stress and coping, needs assessment, program development, program evaluation, public policy or special populations such as refugees and persons with disabilities or mental illness.

When Offered
Offered in spring.

PSYC 4098 - Selected Topics in Neuroscience (3 cr.)

Prerequisites
BIOL 1011 or PSYC 1098 or PSYC 3800

Description
An interdisciplinary course discussing current topics in neuroscience, through the examination of content related to neurobiology, neuroanatomy, neurophysiology. Examples of topics may be neuroscience research techniques, hormones and behavior, psychopharmacology, cognitive neuroscience, affective neuroscience, neurological disorders.

Cross-listed
BIOL 4098
Repeatable
May be repeated for credit if content changes.

PSYC 4099 - Selected Topics in Psychology (3 cr.)

Prerequisites
Junior or senior standing.

Description
Topics of interest that reflect current trends or specialized content areas in psychology. Topics may relate to faculty research or practice interests, as well as intra-disciplinary or interdisciplinary areas of inquiry.

When Offered
Offered occasionally.

Repeatable
May be repeated for credit if content changes.

PSYC 4150 - Psychological Testing and Assessment (3 cr.)

Prerequisites
PSYC 1000, PSYC 2000, and PSYC 2100

Description
Study of psychometrics, including measurement statistics, reliability, validity. Overview of test construction and development. Introduction to types of testing including intellectual/cognitive; achievement; and personality measures. Ethical and cultural issues in assessment.

When Offered
Offered in fall and spring.

PSYC 4160 - Methods in Behavioral Neuroscience (3 cr.)

Prerequisites
PSYC 3800

Description

This course offers a comprehensive overview of classic and modern methods in neuroscience, including a review of the structure and function of the nervous system in health and disease. Students will explore molecular, cellular, circuit based, and whole system techniques and their applications in scientific research. This course is intended for advanced undergraduate students who are considering graduate work in the field of neuroscience. Students will critically review up-to-date literature and attend research seminars and design a research experiment. Projects will be based on the student's areas of interest.

Cross-listed
BIOL 4160

PSYC 4203 - Practicum in Community Development (3 cr.)

Prerequisites

Six hours of social sciences or consent of the instructor.

Description
One semester, field experience in an approved international development agency, local NGO or other professional setting approved by faculty supervisor. Supervised by a faculty member.

Cross-listed
Same as ANTH 4203.
When Offered
Offered in spring.

PSYC 5100 - Research Methods and Inferential Statistics for Psychology (3 cr.)

Description

This course will introduce students to research methods in psychology, including the process of scientific inquiry, features of different research methods, and practical applications and challenges when conducting studies. Quantitative and qualitative research methods will be reviewed such as experimental designs, correlation studies, and single-case studies. Inferential statistics will include basic introduction, tests of hypothesis for one population, two populations and more, and for quantitative and qualitative variables, and correlation and regression.

PSYC 5112 - Psychosocial Issues in Forced Migration (3 cr.)

Prerequisites
Junior, senior, or graduate standing.

Description
Explores the psychosocial dimensions of forced migration including ethno-cultural concepts of well-being, sources of stress and coping, the impact of forced migration on child development, psychosocial consequences of torture and sexual victimization, and the interaction of trauma and bereavement. Culturally appropriate mental health assessment, community-based intervention programs, methods of program evaluation, and ethical issues in working with refugee populations will be discussed. This course is required of all students seeking the diploma in Forced Migration and Refugee Studies.

Cross-listed
Same as MRS 5112.
When Offered
Offered occasionally.

PSYC 5200 - Fundamentals of Counseling (3 cr.)

Description
This course is an introduction to culturally sensitive interviewing, listening, and report writing skills required of professional helpers. Students will gain familiarity with fundamental counseling concepts and experience in using basic counseling techniques. The course will enhance students' capacity for psychological mindedness and intervention.

PSYC 5202 - Advanced Lifespan Development (3 cr.)

Description
This course is an exploration of lifespan development through the lenses of biological, learning, cognitive, social, and cultural theories. Emphasis is on gaining a conceptual understanding of healthy development and better practical understanding of how to help children, adolescents, and adults address developmental challenges they face.

PSYC 5203 - Community Collaboration and Assessment (3 cr.)

Prerequisites
None.

Description
This course prepares students with fundamental skills to conduct qualitative and quantitative needs and resources assessments aimed at informing subsequent program development. There is an emphasis on effective community collaboration skills including cultural responsiveness, active listening, group facilitation, and reflective practice. Students will be exposed to diverse specialized methods such as photovoice, SNA, and GIS.

When Offered
Every fall.

PSYC 5205 - Psychology in the Schools (3 cr.)

Description
This course will focus on prevention-oriented community and environmental interventions in school settings. General topics areas addressed are: assessment, consultation, intervention, special education, research, reform movement in education, multiculturalism, and diversity, and the future of education and school psychology.

PSYC 5206 - International and Multicultural Psychology (3 cr.)

Description
This course is an overview of the mainstream as well as alternative theoretical, methodological, and applied approaches that are relevant to the study and practice of psychology. Specifically, the course will provide students with knowledge, awareness, and skills in international and cultural issues related to the field of psychology.

PSYC 5209 - Independent Study and Guided Readings (1-3 cr.)

Prerequisites
Minimum 3.0 GPA, consent of instructor, and approval of graduate advisor.

Description
In exceptional circumstances some students may arrange for independent study on a specific topic in psychology that is not covered in the course offerings for that academic year. Guided readings, research and frequent consultations held.

When Offered
Offered occasionally.

PSYC 5210 - Community Psychology and Systems Theory (3 cr.)

Description
This course examines the core theories, values, and methodologies of community psychology

and systems theory. An emphasis is placed on the ecological perspective, empowerment theory, sociocultural and cross-cultural competence, community inclusion and partnership, and ethical, reflective practice.

PSYC 5220 - Applied Research Design and Statistical Analysis (3 cr.)

Description

This advanced statistical and methodology course provides students with the conceptual knowledge and skills needed to understand, evaluate, and conduct multivariate research. The course will also acquaint students with the statistical techniques used to analyze data derived from such research. This course builds on basic knowledge of inferential statistics.

PSYC 5222 - Physiological Psychology (3 cr.)

Description

This course reviews the biological bases of normal and abnormal behavior. The major contributions in this field are examined, including the neurological, biochemical, and genetic influences on sensation, motivation, cognition, and emotion. The course will cover applications and relevance of these influences in psychiatric disease, neurodegenerative disease, and drug abuse.

PSYC 5226 - Seminar in Cross-Cultural Family Studies (3 cr.)

Description

This course will expose students to contemporary issues affecting families in a global context from a systemic/ecological perspective. Issues of diversity and cross-cultural interactions will be integrated throughout the course, with an emphasis on the Arab/Middle Eastern experience.

PSYC 5230 - Ethics and Professional Issues (3 cr.)

Description

This course is designed to introduce students to ethical decision-making that is an integral part of psychological practice and research. Students will learn about specific ethical principles and guidelines, and will be challenged to increase awareness, sensitivity and understanding of ethical and professional practices particularly within multicultural settings.

PSYC 5233 - Program Evaluation (3 cr.)

Description
This course exposes students to concepts and methods of applied research in community psychology, specifically program evaluation. Students will gain knowledge and skills in program evaluation, including evaluation theories, different types of evaluation (including process, outcome, and impact), and qualitative and quantitative evaluation methodologies. There will be an emphasis on strengths-based, participatory, and empowerment-oriented approaches, as well as professional ethics.

PSYC 5241 - Theories of Counseling and Psychotherapy (3 cr.)

Description
This course examines historical and contemporary approaches to counseling and psychotherapy. Theoretical assumptions and principle interventions and techniques of each paradigm will be studied, emphasizing evidence-based practice. Theories covered include psychodynamic, humanistic/experiential, cognitive, behavioral, brief/strategic, and postmodern approaches. There is an emphasis on multicultural considerations.

PSYC 5243 - Prevention and Intervention in Communities (3 cr.)

Description
This course provides students with knowledge and skills related to prevention across the lifespan, health promotion, and other types of community interventions. Students are exposed to a variety of community and preventive interventions, so as to prepare them to think about, work with, and lead community and preventive interventions in the future. The course provides training in community program development by offering opportunities for students to participate in program development, implementation, or management. Multicultural sensitivity and professional ethics are addressed.

PSYC 5246 - Psychosocial Interventions for Forced Migrants and Refugees (3 cr.)

Prerequisites
MRS 5112 or approval by department.

Description
This course exposes students to diverse interventions for addressing psychosocial needs faced by refugees and forced migrants across the continuum from emergency responses to resettlement programs, such as psychological first aid, mental health interventions and community building, and community stigma reduction. Students will gain experience with local organizations. Ethical, professional, and cultural issues will be interwoven throughout the course.

Cross-listed
MRS 5214

PSYC 5251 - Psychological Assessment (3 cr.)

Description
This course increases familiarity with psychological assessment tools and standardized psychological tests used for diagnostic and behavioral health intervention planning purposes. Students examine strengths and limitations of tests and learn how to administer, score, and interpret findings. Students learn how to read and write integrated reports that can inform treatment. Ethical and multicultural issues throughout the assessment process are addressed.

PSYC 5253 - Consultation to Non-Profit Organizations (3 cr.)

Description
This course provides students with knowledge and skills for consultation with nonprofit organizations, using a participatory and strengths-based approach. Topics include understanding the nonprofit sector, phases and theories of consultation, establishing and marketing a consultation business, and ethical and professional competence. Nonprofit consultation often focuses on strategic planning, organization development, needs assessment, capacity and resource development, program evaluation, and fundraising.

PSYC 5255 - Assessment and Evaluation for Learning Enrichment (3 cr.)

Description
This course provides students with knowledge of current concepts and issues related to assessment and evaluation tools used for diagnostic and learning interventions. Students examine strengths and limitations of both standardized and curriculum-based tools. They learn

how to administer, score, interpret and use findings curriculum-based tools, as well as how to read and write integrated reports and use report findings to develop a learning plan for the individual assessed.

PSYC 5256 - Special Topics in Psychology (3 cr.)

Prerequisites
Approval of advisor.

Description
In-depth examination of a specific topic in psychology of current theoretical, research, or clinical interest. Topics will vary depending on instructor.

When Offered
Offered Occasionally.
Repeatable
May be repeated for credit if content changes.

PSYC 5261 - Psychopathology and Resilience across Cultures (3 cr.)

Description
This course is an overview of contemporary views on psychopathology and resilience from a multicultural perspective. The course will cover key processes influencing mental health across cultures such as belief systems and communication interaction as well as ways to cultivate resilience.

PSYC 5264 - Practicum I in Counseling Psychology (3 cr.)

Prerequisites
PSYC 5200, PSYC 5210, PSYC 5230, PSYC 5241, PSYC 5251, PSYC 5261

Description
Introductory practicum in which students provide direct counselling services with the support of individual and group supervision. This practical training will help students develop their skills in

areas including but not limited to: a. counselling assessment and interventions; b. session and case management skills; c. ethical and legal principles, and d. documentation such as record keeping and report writing.

PSYC 5265 - Applied Projects in Inclusive Education (3 cr.)

Prerequisites
PSYC 5205 , EDUC 5204 , EDUC 5238

Description
This is a hands-on course that will help students integrate theoretical acquired knowledge into their professional practice. The course will enhance the student's ability to utilize reflective, experiential, and pragmatic pedagogic approaches in order to teach for diverse learners effectively. The course aims at promoting the facilitation of learning through peer observation, critical friends groups, and cognitive coaching. The 5265 course should be taken in the final semester of the diploma, after the student has completed PSYC 5205, EDUC 5204, and EDUC 5238. It can be taken concurrently with either PSYC 5255 or EDUC 5232

Cross-listed
EDUC 5265

PSYC 5270 - Group Work (3 cr.)

Description
This course provides an overview of the concepts and applications of group interventions in community and counseling contexts including task, psychoeducational, counseling, and psychotherapy groups. Principles of group work will be reviewed, including group dynamics; leadership skills, tasks, and challenges; and stages of group development. A minimum 10 hour experiential component is integrated into the course.

PSYC 5271 - Career Development and Counseling (3 cr.)

Description
This course provides an overview of career development over the lifespan from various theoretical frameworks, while taking into consideration the contributions of other facets of life. Students will gain knowledge and skills in career program development and career counseling.

The course will review various instruments and assessments that are often used in career counseling. Ethical, legal, and diversity considerations are addressed, including gender and culture.

PSYC 5274 - Practicum II in Counseling Psychology (3 cr.)

Prerequisites
PSYC 5200, PSYC 5210, PSYC 5230, PSYC 5241, PSYC 5251, PSYC 5261, PSYC 5264

Description
Advanced practicum in which students provide direct counselling services with the support of individual and group supervision. This practical training will help students develop their skills in areas including but not limited to: a. counselling assessment and interventions; b. session and case management skills; c. ethical and legal principles, and d. and documentation such as record keeping and report writing.

PSYC 5281 - Couples Counseling and Human Sexuality (3 cr.)

Description
The course will focus on theories and methods of effective counseling with couples. The course will also cover the influence of socio-cultural factors on couples' relationships. The human sexuality portion of the course will address issues such as sexual development across life span, sexual attitudes, sexual dysfunction, sexual assault, commercial sex and sex therapy.

PSYC 5283 - Internship in Community Psychology (3 cr.)

Prerequisites
Approval of graduate director.

Description
This course provides students with applied fieldwork experience in community psychology during an academic year-long field internship. Students are placed at NGOs, community agencies, or private or public institutions as interns with an approved external supervisor at the site. In addition, students meet regularly with a psychology faculty member for individual and group supervision.

PSYC 5284 - Internship in Counseling Psychology (3 cr. + 3 cr.)

Prerequisites
PSYC 5264, PSYC 5274 and approval of graduate director

Description
This course provides students with clinical training and experience in counselling during an academic year-long field internship. Students are placed at NGOs, community agencies, or private or public institutions as interns with an approved external supervisor at the site. In addition, students meet regularly with a psychology faculty member for individual and group supervision. In order to ensure that students have the maturity and professional skills needed; prior approval for enrolment in this course is needed from the graduate faculty committee.

PSYC 5299 - Research Guidance and Thesis (3 cr.)

Prerequisites
Approval of advisor.

Description
Supervision in the preparation and writing of the Masters thesis. May be repeated for credit.

Public Policy and Administration

PPAD 2096 - Selected Topics for the Core Curriculum (3 cr.)

Prerequisites
RHET 1010

Description
Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

When Offered
Offered occasionally.

PPAD 3198 - Management in Government (3 cr.)

Description
Introduction to management and policy-making in government and non-profit organizations, with an emphasis on development programming in Egypt. Exploration of current policy and governance issues of importance to Egypt. Overview of management techniques applied in designing, implementing, and assessing development programs in government and non-profit settings.

When Offered
Offered in spring.

PPAD 4111 - Fundamentals of Public Policy and Administration (3 cr.)

Description
This course covers a number of topics in nonprofit management that provides a thorough introduction and understanding to the significant issues of the sector - topics include the management, leadership, governance, and accountability of nonprofit organizations in both developed and developing countries with special reference to Egypt and the Middle East.

PPAD 4113 - Selected Topics in Global and Public Affairs (3 cr.)

Description
Selected topics in Global and Public Affairs addresses a myriad set of contemporary issues in the field. The course will rely on a mix of theoretical approaches and case studies to address the topic in focus.

PPAD 5111 - Essentials of Public Policy and Administration (3 cr.)

Description
Introduction to public policy and administration for students with limited preparation in political science and social science generally. Exploration of what constitutes policy and how it is made, implemented, and evaluated, including role of different institutions and actors in shaping policy outcomes. Overview of major management issues in nonprofit and government agencies, including setting strategy, developing operational plans, and managing human and financial resources to achieve desired outcomes. May be taken for MPP credit only by students with limited background in management or social sciences (advisor approval required).

When Offered
Offered in fall.

PPAD 5113 - Organizational Behavior for Government and Nonprofit Management (3 cr.)

Description
Factors that shape how employees and managers interact with each other, with partners, citizens, and clients, and with the institutions themselves in public and nonprofit settings. Theories of motivation, leadership, group dynamics, power, communication, and ethical behavior in organizations. Application of theoretical constructs to the reality of developing country conditions, preparing students to address organizational challenges in professional settings.

When Offered
Offered in alternate years.

PPAD 5114 - Management of Development Programs (3 cr.)

Description
Theory and practice of management as applied to development projects, programs, and organizations. Managerial aspects of social and economic development, with extensive use of case material to explore how management shapes development outcomes. Implementation of management reforms in public and nonprofit settings, including project design and management.

When Offered
Offered in fall.

PPAD 5122 - Administrative Environment and Public Policy in Egypt and the Middle East (3 cr.)

Description
In-depth exploration of the interaction of public policy and government institutions in Egypt and the Middle East to achieve public purposes. Consideration of how administrative structures shape outcomes and how performance constraints can be overcome, with application to

selected social and productive sectors of public policy concern in Egypt and the region.

When Offered
Offered in alternate years.

PPAD 5123 - Governance, Accountability, and Stakeholder Negotiations (3 cr.)

Description
Provides students with an understanding of governance and accountability concepts, tools, and applications as applied in governmental and nonprofit settings, including international development organizations, and corporations working in developing countries. Strategies to overcome governance deficiencies including corruption, weak accountability to stakeholders, and nontransparency. Approaches to negotiation, especially between sectors (government-nonprofit-private sector) and with community stakeholders. Communication tools and other approaches for improving stakeholder relations.

When Offered
Offered in fall.

PPAD 5124 - Leadership and Communication for Public Affairs (3 cr.)

Description
Approaches to leading change in government and nonprofit settings at the organizational, local, and national levels. Consideration of how to develop personal leadership skills based on case studies and analysis of successful and unsuccessful leadership models in the public sphere, and how to develop effective change strategies, overcome barriers, and shape group behavior to achieve desired outcomes. Development of better oral and written communication skills, problem-solving approaches, and skill in using management tools to build collaboration within and between organizations.

When Offered
Offered in alternate years.

PPAD 5125 - Citizen-centered government (3 cr.)

Description

Exploration of institutional reforms to expand citizen engagement and government accountability in the Middle East, including decentralization of government services, community-based services, and creation of mechanisms to engage citizens in governance. Use of technology to improve citizen services and communication, including e-government.

When Offered
Offered in alternate years.

PPAD 5126 - Managing NGOs in Developing and Transitional Countries (3 cr.)

Description
Application of management concepts, approaches, and tools in a nonprofit setting, including strategic management, human resource management, budgeting and financial management, and project management. Interaction of NGOs with partners including participatory development approaches, relations with donors and governments, coalition-building and fundraising. Both project and advocacy approaches will be covered.

When Offered
Offered in spring.

PPAD 5127 - Reforming the Delivery of Social Policies in the Middle East (3 cr.)

Description
How to address problems of poverty, unemployment and health care needs? Is everyone entitled for help? How to allocate scarce resources? This course addresses current debates pertaining to global models of social transfers; program design and implementation cycles; the nexus of employment and social protection policies; and questions pertaining to contributory and non-contributory schemes, food subsidies; and micro-insurance.

When Offered
Offered in Spring.

PPAD 5128 - Corporate Social Responsibility and NGO Partnerships (3 cr.)

Description
Overview of corporate social responsibility principles and applications from a developing

country perspective. Issues in responsible corporate management, including addressing environmental, social, and accountability challenges. Tools for implementing and assessing corporate social responsibility programming, including mechanisms for developing effective partnerships with nonprofit organizations. Extensive use of cases from developing country experience.

When Offered
Offered in alternate years.

PPAD 5129 - Globalization and Development (3 cr.)

Description
Integrative approach to the debate on globalization and development in the 21st century. Analyzes globalization through the lens of diverse regions, using cases and analysis to explore global aspects of social change, growth and development, social and economic stability and development finance. Considers emerging issues reshaping global development, including migration of labor and capital, trade, technology, conflict, and global warming. Impact of globalization on sustainable development, including environment, debt, crisis management, global governance, poverty, and inequality.

When Offered
Offered in alternate years.

PPAD 5130 - Governance and Development (3 cr.)

Description

The course is aimed at introducing the students to the theoretical foundations of development and governance by acquainting them with the key schools of thoughts, debates, approaches, and issues. It goes on to analyze issues associated with ensuring good governance, challenges of service delivery, poverty alleviation, challenges in achieving sustainable development goals (with particular reference to Egypt), what causes 'good' and 'poor' (or bad) governance, and the role of civil society in ensuring good governance.

PPAD 5131 - Government Finance for Policy Analysis (3 cr.)

Prerequisites

Completion of economics core or equivalent economics preparation.

Description
Role of government expenditure, taxation, and financing in public policy, with emphasis on socioeconomic development and related policy issues. Application of financial and economic principles to government finance, with emphasis on rigorous theory, empirical evidence, public choice analysis, and policy applications in a market economy. Design, selection, and evaluation of spending programs (emphasizing social programs and social insurance); revenue generation including taxation, non-tax funding mechanisms, government credit; subsidy and income transfer programs.

When Offered
Offered in alternate years.

PPAD 5132 - Social and Environmental Policy (3 cr.)

Description
Overview of issues and analytic approaches for social and environmental policy, including programmatic and policy responses to development challenges in the environment, health and social services, and anti-poverty programming, with an emphasis on applications and case studies of experience in the Middle East and North Africa. Application of analytic methods to understand the root causes of barriers to providing social services and protecting the environment, and potential solutions to address these challenges from an interdisciplinary perspective.

Cross-listed
Same as .
When Offered
Offered in spring.

PPAD 5133 - Global Health Issues and Policies (3 cr.)

Description
Examination of health issues in developing countries from a global perspective, with an emphasis on strategies to address social, economic, and managerial barriers to better health outcomes. Consideration of healthcare delivery in the broader context of development, equity, and government performance. Role of poverty, environmental degradation, and related social

factors in health outcomes and development of new approaches to tackle social determinants of health. Introduction to health finance issues and approaches. Exploration of global issues affecting health such as migration, intellectual property rights, and governance failures.

When Offered
Offered in alternate years.

PPAD 5134 - Government Regulation of Business and Investment (3 cr.)

Description
Introduction to government strategies to regulate social and economic sectors to overcome market failures. Comparative analysis of regulatory structures and issues in financial markets, telecommunications, the utility sector (power, water), environment, and social services (education, healthcare). Regulatory tools and analysis of alternative regulatory strategies as applied in developing countries. Privatization and public-private partnerships, including legal frameworks, approaches to community involvement in decision-making, accountability, and dispute resolution.

When Offered
Offered in fall.

PPAD 5135 - Promotion of Local Economic Development (3 cr.)

Description
Introduction to government strategies to promote broad-based and employment-creating growth at the national, regional, and local levels. Small and midsize enterprise development, including financing tools. Mobilization of local resources through collaboration with the business sector and community partners. Identification and removal of barriers to investment to create an environment conducive to growth. Tools to attract investors and create local capacity for growth.

When Offered
Offered in spring.

PPAD 5136 - Gender in Public Policy and Administration (3 cr.)

Description
The course approaches the topic of gender in public policy and administration by exploring frameworks for thinking about both gender differences and public affairs; examining policy issues that have gendered outcomes; and looking at the representation of women in leadership positions as agents of social change

PPAD 5141 - Policy for Sustainable Cities (3 cr.)

Description
Explores policy choices facing urban managers, planners, and the communities they serve with regard to putting cities on a path to sustainability. Considers how allocation of, control over, and use of key land and financial resources shapes urban development from political economy, governance and space planning perspectives. Examines participatory planning and other methods to engage urban stakeholders in management of cities as well as tools to promote adoption of green technologies in the urban housing, industrial, transport, power, water, and commercial building sectors.

PPAD 5142 - Greening the Built Environment (3 cr.)

Description
Examines core concepts, analytic tools, and program models needed to develop the urban built environment in ways that are socially and environmentally sustainable. Gives particular attention to retrofitting and sustainability upgrades for the existing urban core, developing new communities on a sustainable model, and providing affordable options for low-income urban residents, including upgrading of informal areas as well as new developments. Explores how the spatial distribution of work and housing choices interacts with transport/transit systems, energy use, and infrastructure to shape urban sustainability outcomes.

PPAD 5143 - Urban Infrastructure Development for Sustainability (3 cr.)

Description
Considers how the development of critical infrastructure (power generation and transmission, water/wastewater, transport/transit, and waste management) can be directed toward socially and environmentally sound and economically viable models. Provides an understanding of alternative infrastructure financing, regulation, and implementation models from state

provision to public-private partnerships. Explores how infrastructure network choices shape city expansion, urban quality of life, and efficiency outcomes in a dynamic urban context.

PPAD 5151 - Issues in International Security (3 cr.)

Description
Exploration of strategies and techniques for managing potential and active conflicts at the national and international levels, including such traditional and new threads to international security as inter-state territorial, intra-state ethnic-based, and violent transnational extremist groups, dispute over non-renewable resources, and climate change. Consideration of institutions and methods for managing each stage of the conflict process, from prevention and deterrence through conflict resolution and post-conflict rebuilding.

When Offered
Offered in spring.

PPAD 5152 - Conflict Prevention and Resolution (3 cr.)

Description
This course focuses on international intervention and conflict management with the objective of assessing the policy implications of various conflict management strategies such as crisis management, mediation, peace-keeping, partition, humanitarian intervention (responsibility to protect) and prevention. In addressing these issues, the course will examine the application and outcomes in specific cases from the Middle East, Bosnia-Herzegovina, Sri Lanka and Sub-Saharan Africa.

When Offered
Offered in spring.

PPAD 5153 - Armament, Arms Control and Disarmament (3 cr.)

Description
This course reviews the history of arms control and disarmament, especially during the cold war

period and in its aftermath. The role of the United Nations, the current focus on nuclear non-proliferation, the regime set up by the Non-proliferation Treaty (NPT), the conformity of counter-proliferation policies with international law and the present status of treaties on weapons of mass destruction will be discussed. The course will examine current issues of nuclear armament, particularly non-proliferation in the Middle East.

When Offered
Offered in alternate years.

PPAD 5154 - Contemporary Security Issues in the Middle East (3 cr.)

Description
This course is about comparable and other issues of regional security with special emphasis on the Middle East. It will address categories of issues and then focus on specific case studies of occupation, water, oil, other natural resources, and ethnic and intra-State conflicts. Policies of regional and extra-regional powers and multilateral approaches towards these security cases will be reviewed.

When Offered
Offered in alternate years.

PPAD 5155 - Governance of the Global Economy (3 cr.)

Description

The course explores the evolving status of developing countries in the multilateral system. Are developing countries having a role that allows them to promote their legitimate interests in global international governance and the multilateral trading system? Does International Cooperation work in their favor? Going through the different development paradigms in the UN system, post WW II Bretton Wood system, the course investigates how developing countries remain sidelined from global governance and continue to be mere standard takers.

When Offered
Offered in alternate years.

PPAD 5156 - Multilateral and Bilateral Cooperation for Development (3 cr.)

Description
This course will review the policies of international cooperation put in place by industrialized countries. It will examine their priority issues, such as fighting poverty, promoting entrepreneurship, gender equality, preservation of the environment and migration, the objectives and geographic focuses of these policies. The course will also review modalities and delivery institutions such as USAID, CIDA, SIDA, JAICA and GTZ.

When Offered
Offered in alternate years.

PPAD 5161 - Diplomacy: Theory and Practice (3 cr.)

Description
The course analyzes both the limits and potential of diplomacy. It examines how thinking about diplomacy has evolved from the classical period through to the beginning of the twenty-first century and how it might develop in the future in response to the interrelated and changing issues and the interdependence between actors in world society.

PPAD 5165 - Program Evaluation (3 cr.)

Prerequisites
PPAD 5212 and PPAD 5231

Description
This course provides students with a set of conceptual, econometric and practical skills that are used to evaluate the performance of a project or a program, with a particular focus on development program interventions. The course will review different approaches to evaluation, including monitoring and evaluation (M&E), operational evaluation, mixed-methods (combining quantitative and qualitative analyses), cost-benefit analysis and impact evaluation. The course will primarily focus on introducing students to the different methodologies of impact evaluation, such as randomized controlled trials (RCTs), quasi-experimental designs (difference-in-differences) and non-experimental approaches (matching and instrumental variables).

Throughout the course students will learn how to critically analyze evaluation research, access how successfully it is in establishing a causal relationship, as well as how to develop their own evaluation plan.

PPAD 5168 - Proposal Writing and Grant Management for Nonprofit Organizations (3 cr.)

Description

For most non-profit organizations, having access to grants makes all the difference between either thriving or being defunct. For any non-profit manager, the ability to write effective proposals is a necessary first step towards securing the all-important grant. This course is designed to introduce non-profit and public sector workers to the rudiments of effective proposal writing and grant management. It will assist students to learn and apply critical skills including grant identification, proposal writing, planning of fundraising events, management of secured funds and financial accountability.

PPAD 5169 - Issues in Social Entrepreneurship (3 cr.)

Description

Social Entrepreneurship is a rapidly emerging field of for-profit and nonprofit business practice aimed primarily at advancing the social and economic welfare of persons at 'the bottom of the pyramid'. Within this evolving field, social entrepreneurs create new business models for neglected markets that corporations can emulate, partner with or acquire to take to scale. As the traditional lines among government, business and non-profits continue to blur in the wake of increasing business interest in sustainable value creation, it is critical for Public Administration students to understand how the opportunities in this field can be leveraged to alleviate poverty. Using primarily, guest speakers, case discussion, lectures and student presentations, this course will help students to understand:

1. The emergence of the field of social entrepreneurship
2. The situations, resources and business structures used by social entrepreneurs
3. The mechanics, tensions, and realities of starting and/or managing a social enterprise and
4. The potential for scaling social enterprises

PPAD 5170 - Volunteer Management (3 cr.)

Description

The role of volunteers in development efforts across the globe today cannot be

overemphasized. The impacts of persistent conflicts, disease, climate change and migration in the Middle East, Africa, Asia and Latin America means that volunteer efforts will continue to be a vital part development efforts not only in the global south but also in the global north. For the public and nonprofit organizations that are financially-strapped, volunteering efforts provide a pathway to enhance their capacity and ameliorate public problems. Understanding the management aspect of volunteers is therefore important for the nonprofit manager. The objective of this course is to provide a comprehensive introduction to the design and management of volunteer programs.

PPAD 5171 - International and Comparative Human Resources Management (3 cr.)

Description

This course introduces students to the complexities of public human resources management from an international comparative perspective. It surveys the theoretical, strategic, cultural and functional contexts of IHRM and identify some of the everyday challenges of managing pubic personnel in the MENA region as well as other parts of the globe. Topics of interest include issues related to as recruitment and selection, training and development, performance management, career management and employee compensation in international contexts.

PPAD 5173 - Public Administration, Technology, and Innovation (3 cr.)

Description

This course introduces students to the emerging role of technology and innovation in contemporary public sector management. Although not a new concept, innovation has mostly been associated with work related activities in the private sector. Evidence across the globe suggests however, that where public institutions have adopted innovation and technology, including the use of digital communications and analytics, there has been accelerated solutions to public problems. The objective of this course is assist students to understand and utilize concepts and practices related to innovation and technology specifically in the public sector. The course will draw on international best practices to help students examine the role and potential of use of innovation in public policy design, policy execution and communication.

PPAD 5174 - Internship in Public and Non-Profit Organizations (3 cr.)

Description

This course offers students the opportunity to participate in a full-time or part-time internship

experience, within the public and non-provident sector. Students work under the supervision of both an approved internship provider and a faculty adviser. The course provides practical, hands-on training to enhance student learning and the implementation of theory to real-world problems.

PPAD 5175 - Independent Study in Public Policy and Administration (1-3 cr.)

Prerequisites
Pre-requisites: Permission of the instructor and unit head

Description
Guided readings, research, and discussions on specific selected topics in Public Policy and Administration

PPAD 5179 - Big Data Analytics for Public Policy (3 cr.)

Description
The goal of the Big Data Analytics class is to develop the key data analytics skill sets necessary to harness the wealth of newly-available data. Its design offers hands-on training in the context of real big data. The main learning objectives are to apply new techniques to analyze public policy problems using and combining large amount of heterogeneous data from a variety of different sources. It is designed for graduate students who are seeking stronger foundation in data analytics.

PPAD 5180 - Introduction to Data Analytics (3 cr.)

Description
The course will cover the following topics: construction of statistical models, especially the use of statistical tools and techniques such as chi-square tests of independence, analysis of variance, simple and multiple linear regressions and correlation, and the use of extrapolating methods such as moving average and exponential smoothing.

PPAD 5198 - Practicum (3 cr.)

Prerequisites

Completion of at least 3 courses or approval of department and instructor.

Description
Students must complete an approved individual or team professional assignment with a relevant government, non-profit, or other organization. Class meets alternate weeks during the term to work on practicum assignments and to translate practicum products into polished professional work products, which may become the basis for student theses or master's projects. Work may be begun prior to the term in which the student enrolls in the class. Assessment based on practicum supervisor's review, research paper and other products prepared, and contribution to peer reviews or team products. Students may arrange to complete an individual practicum assignment on an independent study basis under faculty supervision.

When Offered
Offered in Fall and Spring.
Notes
Grading Pass/Fail.

PPAD 5199 - Special Topics in Public Policy and Administration (1-3 cr.)

Prerequisites
Consent of the instructor and advisor.

Description
Considers selected topics of relevance to public policy and administration. May be repeated with permission of the supervisor if the topic varies from the previous enrollment.

When Offered
Offered occasionally.

PPAD 5201 - Research Methods for Public Policy and Administration (3 cr.)

Description
Theoretical and applied aspects of developing a research project, including definition of research questions, literature review, overall research design, and methodology, as well as research implementation planning (use of library sources, field investigation, and scheduling).

Each student will develop a research proposal that will generally serve as the basis for the thesis proposal.

When Offered
Offered in spring.

PPAD 5202 - Public Policy Theory & Practice (3 cr.)

Description
Introduction to analytic tools, methods, and approaches to policy analysis in diverse development issues areas and country situations. Develops skills in selection and application of tools to analyze policy problems, assess alternative solutions, and develop recommendations for action. The course introduces students to approaches to program evaluation ex ante and ex post, including identification of data needs, assessment of implementation issues and outcomes, and definition of strategies to achieve desired outcomes.

When Offered
Offered in Fall and Spring.

PPAD 5211 - Qualitative Analysis for Policy and Administration (3 cr.)

Description
Use of qualitative data in policy and public administration research and analysis. Fundamental concepts and applications of methods including interviews, case studies, historical research, focus groups, and qualitative surveys. Ethics in qualitative analysis. Design, execution, and interpretation of qualitative results, including issues of validity and replicability.

When Offered
Offered in fall.

PPAD 5212 - Applied Quantitative Analysis (3 cr.)

Description
Application of statistical techniques to policy analysis and policy/program evaluation. Use of the empirical techniques to understand policy issues, analytical modeling and forecasts. Essentials of multivariate regression analysis with policy applications, problems in regression analysis,

forecasting, time series/panel data modeling, and simultaneous equations models, with an emphasis on application rather than theory and use of statistical packages (SAS and SPSS) for policy analysis.

When Offered
Offered in fall.

PPAD 5221 - Strategic Management for Government and Nonprofit Organizations (3 cr.)

Description
Concepts of strategic management as applied to government and nonprofit organizations, including development agencies. Methods and practical considerations related to developing organizational strategies to achieve public purposes, translation of strategies into organizations plans in light of theory and practice of organizational behavior, and assessment of performance relative to strategy.

When Offered
Offered in spring.

PPAD 5222 - Fundamentals of Financial Planning and Management for Government and Nonprofit Organizations (3 cr.)

Description
Essentials of financial management in nonprofit and governmental settings, providing an overview of budget planning, management, monitoring, and controls at the program, agency, and government-wide level. Review of government financial management principles and applications, including managing tax and expenditure programs, sources and uses of funds for government organizations, control of corruption, fundamentals of performance measurement, budgetary decision-making concepts and processes, and citizen participation in budgeting. Financial management of non-profits, including introduction to fundraising and revenue generation strategies, sustainability, financial monitoring and reporting, and controls.

When Offered
Offered in alternate years.

PPAD 5223 - International Models of Public Management (3 cr.)

Description
Explores international approaches to structuring and managing the public sector to meet national objectives. Examines alternative models and their implications for government performance and effectiveness, with an emphasis on MENA region and developing countries, but also considering European, North American, and Asian models. Application of analytic tools and models of government behavior to compare approaches to reforming government management in diverse contexts.

When Offered
Offered in alternate years.

PPAD 5224 - Human Resource Management for Government and Nonprofit Organizations (3 cr.)

Description
Study of key concepts, tools, and methods for human resource management in government and nonprofit organizations. Implementation of management tools to improve human resource productivity and performance through strategic application of HR tools including structural reform, recruitment, capacity-building, motivation, promotion, evaluation, benefits, and conditions of work.

When Offered
Offered in spring.

PPAD 5225 - Regionalism and Regional Integration (3 cr.)

Prerequisites
Admission in the Master in Global Affairs (MGA) program. having taken PPAD 5251 is advisable but not a per-requisite.

Description
The course is about regionalism and regional integration. Regionalism is understood as policies and projects whereby groups states and non-state actors cooperate and coordinate strategy, whether within a given geographical region or not, with the aim of pursuing and promoting common goals in one or more issue areas. Under "New Regionalism", regionalist schemes cover issues of economic, social, cultural and, in some cases, security nature. As they display great

diversity, the course will review the different expressions contemporary regionalism has taken up, which reflect diverse conditions, values and ideological approaches. The review will be carried out against the background of the global system since it is considered that regionalism is a response to globalization and a reaction to the diverse aspects of global processes. The course is also about regional integration, which indicates processes in given regions extending from close intergovernmental cooperation between "sovereign" states to integration as such, involving the creation of new organizational or supranational entity. After a conceptual introduction, regionalism in Europe, the Arab Middle East and Africa, as well as in Latin America and Asia will be examined.

PPAD 5231 - Economics for Public Policy Analysis (3 cr.)

Description
Overview of concepts and methods for microeconomic and macroeconomic analysis as applied to public policy and public sector/nonprofit management. Tools and concepts of microeconomic analysis, including factors shaping demand and supply, theory of the firm, market distortions, externalities, and public goods, and application of economic tools to policy assessment. Introduction to macroeconomic concepts including national income, monetary and fiscal policy, debt and financial markets, growth and employment, savings and investment, and international trade, foreign exchange, and the balance of payments.

When Offered
Offered in fall.

PPAD 5232 - Role of Government in a Market-Oriented Economy (3 cr.)

Prerequisites
PPAD 5231 or equivalent economic preparation.

Description
Overview of the interaction of markets with the economic and social development of developing countries and consideration of the role of governments in promoting, regulating, and supplementing the action of markets to achieve public purposes. Consideration of alternative government strategies in key social and productive sectors, including prevention of and responses to market failures, promotion of equity and the rule of law, provision of social services, and maintenance of stable growth. Application of economic analytic tools to assess and select government strategies in a market-oriented system.

When Offered
Offered in spring.

PPAD 5251 - International Organization in Global Governance (3 cr.)

Description
Exploration of how international organizations interact with each other and with national actors in defining and implementing norms and functions of global governance. Focus on global governance actors and regimes developed for priority issue areas, including peace and security; human development; trade; finance; human rights; the environment; labor and working conditions; and international migration. Consideration of the role of United Nations, international and regional organizations and mechanisms for collaboration with state, international, and non-state actors to strengthen and manage global regulatory regimes.

When Offered
Offered in fall.

PPAD 5252 - Theory and Practice of Negotiation (3 cr.)

Description
This course reviews theories as well as practice of international negotiation, at the bilateral, regional and bilateral levels. It examines determinants, drivers and hypotheses in negotiation processes as well as their different stages and forms. The course also studies the practice of negotiation in specific bilateral, regional and global processes such as South Africa, Sri Lanka the Arab-Israeli conflict and the law of the sea.

When Offered
Offered in spring.

PPAD 5258 - Role of Force: Strategy and Statecraft (3 cr.)

Description

This course focuses on force as an instrument of policy in modern statecraft. Major concepts include the functions of force and the formation of national security policy; classical military strategy and the influences of material resources, technology and structural factors on its evolution; legal and moral limits on force; and the extension of military power into the realm of peace-keeping, humanitarian relief and military occupation. The course also considers contemporary strategy challenges such as insurgency, terrorism, non-violent resistance and civil military relations.

PPAD 5288 - Comprehensives (0 cr.)

Description
This course provides a forum for independent review of the main concepts of the program core subject areas in preparation for the comprehensive examination. The student will take a written examination at the conclusion of the course and must receive a passing grade to be successful. The comprehensive examination may be repeated once. A student who fails the comprehensive examination a second time would be dismissed from the degree program at the end of the semester in which the examination was retaken.

PPAD 5293 - Capstone Project (0 cr.)

Prerequisites
Permission of adviser and instructor

Description
Students enrolling in this course will work towards the completion of their capstone project per departmental requirements. This project should present a thorough analysis of an issue with relevance to their course of study in Public Administration, Public Policy or Global Affairs. Final products for the course include a written report and an oral presentation that will be evaluated by and faculty supervisor and a client representative.

PPAD 5298 - Research Seminar (3 cr.)

Prerequisites
Supervisor approval of a thesis or master's project proposal or permission of the supervisor and instructor.

Description
Support to students in research phase of the thesis or master's project. Weekly meetings and assignments to support ongoing analysis, research, and writing, guided discussions, peer-to-peer assessment, and critique of thesis or master's project components. Ungraded; required for all students.

When Offered
Offered in fall and spring.

PPAD 5299 - Research Guidance (0 cr.)

Description
Supervision in the preparation and writing of the master's thesis.

When Offered
Offered in fall and spring.

Rhetoric and Composition

RHET 1010 - Freshman Writing (3 cr.)

Concurrent
CORE 1010
Description
RHET 1010 is designed to help first year students improve their analytical and argumentative skills. This involves reading texts analytically and critically within various disciplines, considering the rhetorical situations in which they are working, organizing and supporting ideas to make a convincing argument while maintaining their voice as writers. This course also provides training in the use and integration of sources, library and online research and fosters a more discriminating attitude to academically acceptable sources. Ultimately, the course provides opportunities for students to develop effective and coherent communication skills.

When Offered
Offered in fall and spring. Summer only for students repeating the course.

RHET 1020 - Research Writing (3 cr.)

Prerequisites
RHET 1010 and LALT 1020 or Concurrent

Description
RHET 1020 introduces students to the process of research and the different cultures of inquiry in the disciplines. Students explore various types of research questions, making decisions about the most appropriate approach to collecting evidence, conducting analysis, organizing and presenting their work to particular discourse communities. Through this critical approach, students develop a well-informed and insightful research paper which demonstrates understanding of the processes and conventions of writing in academic contexts.

When Offered
Offered in fall, spring, and summer.
Repeatable
Yes
Notes
When registering for RHET 1020, if a student has not yet completed LALT 1020, they will need to concurrently register for LALT 1020. If a student fails to do so, then they will have a registration hold placed.

LALT 1020 can be taken prior to, concurrent with, but no later than RHET 1020.

RHET 1099 - Selected Topics (3 cr.)

Description
A course that addresses broad intellectual concerns and is accessible to students from any major or class level. The course is offered as part of the Freshman Level of the Core Curriculum.

When Offered
Offered occasionally

RHET 2099 - Selected Topics (3 cr.)

Prerequisites
RHET 1020 or its equivalent

Description
Course addressing broad intellectual concerns and accessible to all students irrespective of major.

RHET 3099 - Selected Topics (3 cr.)

Prerequisites
RHET 1020 or its equivalent

Description
Course addresses broad intellectual concerns, and is accessible to all students irrespective of major.

RHET 3110 - The Writer's Workshop (3 cr.)

Prerequisites
RHET 1020 or its equivalent

Description
This course offers students a unique opportunity to learn the fundamentals of nonfiction writing, and to grow as critics, both on the page and in the classroom. Students engage life questions in a number of personal contexts, reflecting upon their places as individuals within the larger contexts of family, country, and/or region. They also practice writing formal critiques of peers' narratives and participate in class workshop discussions.

RHET 3120 - Life Narratives (3 cr.)

Prerequisites
RHET 1020 or its equivalent

Description
This reading-intensive course will familiarize students with writing in the genres of 'life writing'. Students learn to write critical reviews of classic and contemporary memoirs, confessions, letters, diaries, and visual portraits as well as autobiographies and biographies, through key themes of self, identity, secrets, truth, inheritance and ethics. The course will consider how critical examinations of new paradigms that consider the self are expressed through writing. The

course invites discussion about the social and cultural uses of life writing, from legal testimony to medical case history, and the pervasive ethical dilemmas that arise. In addition, using a variety of texts, the course explores the tensions between local identities rooted in culture, history and language, and global, trans-national identities, driven by the pressures of the modern inter-connected world.

RHET 3130 - Travel Writing (3 cr.)

Prerequisites
RHET 1020 or its equivalent

Description
In this course, students will become familiar with the genre of travel writing, the history, politics and economics of place, and how these influence culture. Through various reading, writing, and travel experiences, students will gain an understanding of themselves vis a vis the Other and develop an appreciation of how travel can transform the self. They will learn how to respond critically to travel narratives, identify credible sources to inform their writing, make original observations, and modify perspective to compose alternative texts.

RHET 3140 - Writing Children's Literature (3 cr.)

Prerequisites
RHET 1020 or its equivalent

Description
Students in this course will assess and write works of fiction and nonfiction addressing children through different media (picture books, plays, short stories, novellas). Students will explore who writes and illustrates for children and why, and the language used to address children during different stages. They will engage in projects to entertain children, while providing indirect instruction, and produce written works for organizations that serve the needs of children.

RHET 3150 - Poetry Writing (3 cr.)

Prerequisites
RHET 1020 or its equivalent

Description
This workshop-based course encourages students to explore their ideas through the language and imagery of poetry. Students will experiment with rhythm, rhyme, modes of discourse and poetic form. Throughout the course, they will examine the work of poets from diverse traditions, and the impact of their own expression. In a final portfolio, students will show careful analytical thinking about their work and consideration for how their poems are situated in the larger literary and cultural context.

RHET 3160 - Fiction writing (3 cr.)

Prerequisites
RHET 1020 or its equivalent

Description
This course focuses on the craft and discipline of fiction writing. Students study writers in the Arab and Western literary tradition, and from that study, they learn the fundamentals of rhetorical and literary strategies in fiction, understand how to transform small ideas from daily life into fiction, consider how their cultural background affects how they tell stories, and develop a broadened familiarity with cultures different from their own. Students will also learn how to critique other students' stories in workshops, and how to revise and develop their own work.

RHET 3210 - Business Communication (3 cr.)

Prerequisites
RHET 1020 or its equivalent

Description
Today's globalized and highly competitive world requires businesses, organizations, and individuals to excel in effective communication. This course focuses on helping students to master methods of persuasion that business professionals and administrators of organizations need. Students learn about and analyze various types of correspondences and documents to produce effective and appropriate business documents for professional and public audiences. They conduct research on real life topics and present findings in the form of proposals, formal reports, and presentations.

RHET 3220 - Public Speaking (3 cr.)

Prerequisites
RHET 1020 or its equivalent

Description
This course is designed to train students in the craft and practice of public address, focusing on the composition of well-researched speeches and their delivery. Students learn techniques of presentation and speech writing to address a specific rhetorical situation. Through a variety of instructional strategies - discussion, class workshops, readings, written analyses, and presentations - students learn the processes by which effective and coherent speeches are conceived, prepared, and delivered. Students prepare an informative speech on a critically-analysed topic, a well-reasoned persuasive speech on a complex social issue, a special-occasion speech that integrates diverse fields of knowledge, and multiple other exercises that hone their public speech construction and delivery. Students also practice methods of analytic and constructive peer evaluation, as well as self-evaluation of their video-taped speeches.

RHET 3230 - Technical Communication (3 cr.)

Prerequisites
RHET 1020

; at least 60 credits; SSE major or instructor approval

Description
This course develops the knowledge and skills to produce documents that meet professional and ethical standards required by technical fields such as Engineering and the Sciences. Throughout the course, students will analyze and discuss the context, audience and conventions specific to technical communication. They learn how to produce documents in diverse genres, including proposals and formal reports.

RHET 3250 - Digital Rhetoric (3 cr.)

Prerequisites
RHET 1020 or its equivalent

Description

This is a course in the rhetorical analysis of the increasingly important genres that comprise the practices of E-Writing, including: blogging, wiki-development, networked writing, hypertext, and social networking. The course offers students an opportunity to work within various online contexts, with attention to their evolving conventions, textual features, the relationship between discourse and social practice, and the importance of medium in terms of opportunities and constraints offered. Students analyze and write about the social and cultural implications of developments in electronic literacy. Assignments involve the critique and construction of texts using new media tools and the exploration of how communication practices, notions of audience, elements of argument, narrative and meaning-making are enriched and complicated by the new possibilities of a global, digital environment.

RHET 3260 - Mastering Writing in an AI World (3 cr.)

Prerequisites
RHET 1020

Description

This course delves into the intersection of human communication, artificial intelligence, and rhetorical practices, providing students with a rich understanding of how AI technologies are transforming communication and writing in various contexts. We will explore the classical foundations of rhetoric alongside practical applications, examining how AI can enhance persuasive writing, critical analysis, and audience engagement. Through a combination of timely topics, engaging classroom discussions, hands-on workshops, and collaborative projects, students will develop strategies to navigate the ethical considerations and implications of AI in their communication (written, oral, and multi-modal), preparing them for real-world challenges in an increasingly digital landscape.

In addition to theoretical exploration, students will engage with cutting-edge AI writing tools, evaluating their effectiveness and limitations while fostering an informed mindset toward technology. By analyzing case studies and participating in discussions about the role of AI in social, professional, academic, and creative discourse, participants will develop a nuanced perspective on the ways AI shapes and reshapes not only the act of writing but also the very nature of human communication. Ultimately, this course aims to empower student agency to harness AI sensibly, responsibly, adaptively, and creatively, ensuring they are well-equipped to thrive in diverse professional, academic, and personal environments.

RHET 3310 - Discourse and Power (3 cr.)

Prerequisites
RHET 1020 or its equivalent

Description
This course reveals the power of words and what lies behind them. How can language be used to empower or disempower? Who controls the conversation? Students explore how discourse is constructed and how it maintains complex relations of power. As they develop strategies to become more articulate, confident and persuasive writers, students critically analyze various discourse resources - textual, aural and visual - for their intellectual, social and political power dimensions. The course guides students through key readings in rhetorical theory to provide a foundational knowledge of major questions, concepts and debates in the field.

RHET 3330 - Words that Change the World (3 cr.)

Prerequisites
RHET 1020 or its equivalent

Description
Which words have had the greatest impact on people? What theories inform the works of authors, artists, and filmmakers? Do the arts have an intrinsic value, or are they related to and serve a purpose in the wider world? Words that Change the World examines those questions by engaging students in contemporary discourse in the liberal arts. Students employ critical reading strategies for the analysis and discussion of key texts that have had an impact on the practice and conceptual understanding of the humanities and fine arts. Through art, photography, cinema, history, dance, architecture, and other modes of expression from countries and cultures around the globe, students critically explore these thematic connections and engage in contextualized arguments.

RHET 3340 - Making Your Case: The Art of Persuasion (3 cr.)

Prerequisites
RHET 1020 or equivalent.

Description

This course takes a multidisciplinary approach combining seminal historical and theoretical works with up-to-date learning tools to investigate the concept of persuasion. Students will delve into the historical development of persuasion theories, they will consider socio-economic and technological shifts in the story of humanity and their effect on rhetorical strategies over time, as well as critical approaches to current trends in communication as they relate to mass persuasion and disinformation.

When Offered
Offered occasionally.

RHET 3350 - Writing and Cognition: The Mind and the Machine (3 cr.)

Prerequisites
RHET 1020 or its equivalent

Description
This course explores the invention and reinvention of writing over time. Students look at the social and personal uses of writing, consider what writing makes possible, and the ways we take it for granted in daily life. By exploring different forms of writing, students experiment with writing, and research the different methods adopted by scientists and authors from different cultures, to gain new perspectives. By looking at the relationship between thought and language, the course surveys the ways written expression has been used as a tool for reconstructing perception, memory, and self in society. It also employs writing to explore and analyze complex issues in today's rapidly-changing world.

RHET 4060 - Independent Study (1-3 cr.)

Prerequisites
RHET 1020 or its equivalent; at least 60 credits completed; instructor approval, and if taken for CORE credit, then Core Director approval is also required

Description
In this capstone course, in exceptional circumstances, students in consultation with a faculty member and with approval of the Chair/Associate Chair (and approval of the CORE Director, if taken for CORE credit), may design or take a course that is not regularly offered. In such a case, the student, in consultation with the instructor, will propose a course of study, and work will culminate in one of the following: a scholarly research paper on some aspect of the history,

theory, or application of rhetoric and composition; a practical application of writing, such as a grant or report submitted to an outside agency; a body of work that is normally expected in a listed course not being offered during the current term.

RHET 4099 - Selected Topics for Rhetoric and Composition Capstones (3 cr.)

Prerequisites
RHET 1020 or equivalent

Description
Selected Topics course for rhetoric and composition across broad intellectual themes, genres and contexts. Course is accessible to students irrespective of major.

When Offered
Offered occasionally.
Repeatable
May be repeated if the content changes.

RHET 4160 - Imagining the Book (3 cr.)

Prerequisites
RHET 1020 or its equivalent; at least 60 credits completed or instructor approval

Description
Students in this course will propose and then initiate the writing of a book-length manuscript. Each student will design and generate a different project. Manuscripts, therefore, may span across genres (i.e., a group of personal narratives or short stories, a novel, a book of poetry, a collection of critical and/or academic essays, etc.) offering students the opportunity to respond to a variety of texts as they develop. Class workshops and various forms of analysis will allow for building as well as refining projects. Students in a number of writing contexts and disciplines, as well as those in the Writing Minor, are encouraged to take this capstone course.

RHET 4260 - Writing for Project Funding (3 cr.)

Prerequisites

RHET 1020 or its equivalent

Description
Grant writing skills may be used for fundraising, applying for scholarships and fellowships, starting new businesses, securing research and conference grants, and acquiring funding for the cultural, non-profit and non-governmental sectors. This course develops the skills of effective fund-seeking and proposal writing through a step by step service-learning activity, where students learn how to access donor funds to meet the needs of local non-profit organizations.

RHET 4270 - Research and Writing Internship (3 cr.)

Prerequisites
RHET 1020

Description
This capstone course provides students with an applied, real-world writing experience that helps them transition smoothly from academic writing to work-place writing, and prepares them for the job market. The students may produce a variety of writing and editing work - manuals and tutorials, research papers, news articles, grant applications, reports, letters, policy documents, promotional brochures, creative works, book reviews or other materials as required by the internship. At the end of the semester, the students are issued a letter acknowledging their participation in an unpaid, credit-bearing internship.

RHET 4360 - Writing for Publication (3 cr.)

Prerequisites
RHET 1020 or its equivalent; at least 60 credits completed or instructor approval

Description
This course develops the skills to produce effective articles and presentations with a focus on journal submission requirements, journal review, and publication processes. It provides training in the integration of information technology for presentations, and in primary and secondary research methods.

Robotics, Control and Smart Systems

RCSS 5201 - Robotics: Kinematics, Dynamics and Control (3 cr.)

Description
Robot mechanisms, End-effector mechanisms, Actuators and drives, Sensors. Robot forward and inverse kinematics. Differential motion and Jacobian (Velocities and forces). Simulation software and analysis. Acceleration and Inertia, Robot dynamics. Trajectory generation and control of robot manipulators. Robot planning and control. Task oriented control, Force compliance control. Robot programming, Robot work cell design and work cycle analysis. Robot vision, Teleoperation and Interactive haptics. Closed-Loop Kinematic chains, Parallel-link robot kinematics. Non-holonomic systems, Legged robots.

Cross-listed
Same as MENG 5271.

RCSS 5202 - Embedded Real Time Systems (3 cr.)

Description
Fundamentals of embedded control system design, embedded processor architecture and operation. General overview of existing families of micro-controllers, DSPs, FPGAs, ASICs. Selected embedded 8/16/32 processor architectures, and programming. Real-time, resources and management, I/O, Virtual memory and memory management. Concurrency, resource sharing and deadlocks. Scheduling theory. Real-time programming and embedded software. Real-time kernels and operating systems. Bus structure and Interfacing. Programming pervasive and ubiquitous embedded system. Designing embedded system. Discretization and implementation of continuous-time control systems. Networked embedded systems and integrated control.

Cross-listed
Same as MENG 5272.

RCSS 5203 - Modern Control Design (3 cr.)

Description
Basic linear system response: Analysis in time domain, stability analysis, Routh-Horwitz stability criteria of LTI. Feedback analysis and design continuous-time systems on the basis of root locus: analysis, design, lead/lag compensators, and Control synthesis in frequency domain: (Bode

response, Nyquist stability criteria, sensitivity and design). Control design concepts for linear multivariable systems using state variable techniques. State space representation and transition matrices. Control system design in state space: controllability, pole method and pole placement design, observer/observability and compensators design. Optimal observer based feedback. Lyapunov Stability. The solutions to LQR problem, Kalman filtering problem. LQG and LTR based design methods. Discrete-time systems and computer control.

Cross-listed
Same as MENG 5273.

RCSS 5204 - Applied Estimation (3 cr.)

Description
Introduction to Probability, Probability theory, Bayes theorem, Bayesian Inference. Introduction to estimation. Linear Optimal Filters, Predictors, Smoothers, Nonlinear Filters. Kalman and Information filter, Continuous and Discrete Time Kalman Filter. Extended Kalman filter and implementation, Unscented Kalman Filter (UKF). Distributed Kalman filter over network. Particle filter, Rao-Blackwellized Particle Filter (RBPF). Particle filter Fast SLAM. Case Studies.

RCSS 5221 - Intelligent and Autonomous Robotic Systems (3 cr.)

Description
Autonomous and Mobile robots, Locomotion concepts and mechanisms, Degrees of mobility and steering. Non holonomic concept and constraint. Wheeled mobile robots: Kinematic and dynamic models. Trajectory generation and Control methods. Sensors, sensor models and perception. Mapping and knowledge representations. Control architectures and Navigation: Planning, Subsumption, Potential field, Motor Schemas, Probabilistic, Learning from observations and Reinforcement learning. Relative and absolute localization. Navigation and localization techniques. SLAM (Simultaneous Localization and Mapping). Multi robotic system: navigation, cooperation and autonomy.

Cross-listed
Same as MENG 5274.

RCSS 5222 - Mechatronics Innovations and Experimental Robotics (3 cr.)

Description
Mechatronics innovations: Concepts and innovative ideas, design and hands-on experimentation. Sensors and intelligent sensor systems. Interfacing techniques. Controllers. Electrical motors: selection and control, encoders, and drivers. Power systems and control: pneumatic, electro-pneumatic, hydraulic and electro-hydraulic. Technologies and techniques associated with industrial and mobile robots. Joint space and operational space control. Velocity saturation, trajectory generation and tracking. Project work supporting design, simulation and experimentation.

RCSS 5223 - Bioinspired Robotics and Multi Robotic Systems (3 cr.)

Description
Traditional and Biomimetic robots. Bioinspired robot design: actuators, sensors, and material. Bioinspired algorithms for robot control. Social Networks. Multi robotic systems (MRS): concept, homogeneous and heterogeneous architectures. MRS control architecture: MRS planning, Motor schema based MRS, Behavior based MRS. MRS and machine learning. Inter-robot communication and coordination. Auction-based task negotiation for MRS. Autonomy and cooperation. Task definition, decomposition and knowledge representation. Resource management and deadlocks. Collaborative Observation and Localization. Multi-Robot Navigation. Human-Robot Interaction. Biological inspired solutions: Ant colony and social insect behavior, Swarm intelligence and self organization.

RCSS 5224 - Robotics and Intelligent Automated Manufacturing (3 cr.)

Description
Manufacturing systems: organization, facility layout, performance indicators. Robotics in Manufacturing. AGVs in Manufacturing. Robot work cells. Sensors in Manufacturing. Communication protocols. Agile manufacturing. Models and Metrics. Automation, NC/CNC. Design for Manufacturability. Manufacturing systems design: single cell, assembly line, group technology, cellular and flexible systems. Material transport and storage systems. Analysis of flow lines, assembly systems and line balancing. Quality measurement and reliability. Manufacturing support systems: CAD/CAM/CIM tools and product cycle, process and production planning, shop floor control, inventory control. Modern manufacturing systems: Push/pull systems, pull systems (KANBAN and CONWIP), Just-In-Time, TQM.

RCSS 5231 - Teleoperation, Haptic Systems and Collaborative Control (3 cr.)

Description
Technical specifications: teleoperation and haptics systems. Haptics: Human, Machine, and Computer haptics, and their interrelation. Haptic systems: sensors, actuators and interfaces. Haptic device modeling and control. Event-based haptics. Rendering of stiff walls and friction, rigid-body and deformable body interaction. Haptic teleoperation. Bilateral teleoperation. Teleoperation and haptic systems architecture control approaches. Force control, impedance control, stiffness control Feed-forward control, Adaptive motion/force control. Performance specifications and stability issues, Stability and Transparency, stability against passive human and environment impedances. Design for time-delayed teleoperation. Robustness issues. Collaborative control and collaborated virtual environment.

RCSS 5232 - Robust and Optimal Control (3 cr.)

Description
Linear system theory and robust control. System analysis: stability and performance, sensitivity function, integral quadratic constraints, small-gain argument, H2 and H∞ space and performance. NORMs. Robustness and Uncertainty. Robust stability, quadratic stability, and stability margin. Robust performance, controller parameterization, design constraints. Balanced Model Reduction, Modeling uncertainty. Linear fractional transform (LFT). Structured singular values, μ -Analysis, LMI analysis. μ synthesis. H2 optimal control, H∞ control and controller order reduction, H∞ loop shaping. Optimal control theory: optimization of static functions, calculus of variations, optimal linear regulators, dynamic programming.

RCSS 5233 - Nonlinear and Adaptive Control (3 cr.)

Prerequisites
Consent of instructor.

Description
Introduction to the analysis and design of nonlinear control systems. Linearization of nonlinear systems. Phase-plane analysis, Lyapunov stability analysis. Design of stabilizing controllers. Properties of adaptive systems, Adaptive control and real-time parameter estimation, Deterministic self-tuning regulators, model reference control, Adaptive observers, model reference adaptive control, gain scheduling controller modeling. Stability of adaptive control systems.

Cross-listed
Same as MENG 6270.

RCSS 5234 - Networked Control Systems: Design and Applications (3 cr.)

Prerequisites
ECNG 3202 and ECNG 4306

Description
Introduction to Networked Control Systems, real-time systems, network architecture, wired and wireless network protocols, international standards, NCS in industrial control, NCS in terrestrial transportation systems, Study of different software packages and simulation tools for NCS.

Cross-listed
Same as ECNG 5226.

RCSS 5241 - Smart Systems and Computational Intelligence (3 cr.)

Description
Intelligent systems and evolutionary algorithms. Computational methods, intelligent behaviors and algorithms observed in nature and humans. Neural networks: Supervised and unsupervised Neural Networks (NNs), Single and Multi layer feed-forward NNs, Feedback NNs, Hopfield NNs, Associative memories (Kohonen networks), Learning vector quantizer (LVQ) Radial base function (RBF) NNs. Evolutionary algorithms, genetic algorithms. Fuzzy logic: memberships. reasoning, Fuzzy controllers, Neuro-Fuzzy networks, Fuzzy ARMAP. Swarm Intelligence and Colony optimization. Feature selection. Computational intelligence: imprecise and uncertain knowledge, learning, adaptive behavior and real time problems. Case studies.

RCSS 5242 - MEMS/NEMS Technology and Devices (3 cr.)

Prerequisites
Consent of instructor.

Description

Basic MEMS/NEMS fabrication technologies, various transduction mechanisms such as piezoelectric, pyroelectric, thermoelectric, thermionic, piezoresistive, etc. The theory of operation of few sensors including infrared detectors, radiation sensors, rotation and acceleration sensors, flow sensors, pressure and force sensors, and motion sensors. An introduction to different techniques for analyzing experimental data.

Cross-listed
Same as PHYS 5277,NANO 5221.
When Offered
Offered in fall

RCSS 5243 - Image Analysis and Computer Vision (3 cr.)

Description
Perception and image systems. Pinhole Camera Model. Auto-calibration. Digital image processing fundamentals. Image normalization, gray and binary image processing, RGB and IHS color space representations. Image enhancement: contrast stretching and digital filtering in the spatial and frequency domains. Image restoration. Coding and compression. Image segmentation. Image Convolution / Correlation Matching / De-convolution. Object classification and classifiers. Object recognition and interpretation. Estimating image field and image motion, Optical flow and motion. Stereo vision. Multi-view and motion-based 3-D object reconstruction. Dynamic vision: object tracking, recursive state estimation, autonomous navigation, discrete self-localization. Robotic Control via visual servoing.

RCSS 5244 - Sensors, Perception and Smart Systems (3 cr.)

Description
Sensors and perception. Physical principles of sensing. Static and dynamic characteristics of sensors. Sensor classifications and selection. Interfacing techniques. Calibration and self-calibration of smart sensors. Sensors and intelligent systems: design trends in the field of smart sensors systems. Sensors for: intelligent and autonomous robots, smart systems, automotive and manufacturing industries, smart structures, and other modern industries and smart products. Sensor integration and data fusion. Sensors in remote control and real time systems. Wireless sensor networks, features, architecture and technology, topology, energy, communication protocols and security, distributed & collaborative signal processing, and applications.

RCSS 5245 - Advanced Artificial Intelligence (3 cr.)

Description
Problem Solving by Search, Knowledge Representation and Reasoning, Planning, Quantifying Uncertainty, Probabilistic Reasoning, Learning from Examples, Learning Probabilistic Models, and Reinforcement Learning.

Cross-listed
Same as CSCE 5261.

RCSS 5910 - Independent Study in Robotics, Control and Smart Systems (RCSS) (1-3 cr.)

Prerequisites
Consent of instructor and student's adviser

Description
Under certain circumstances where the required course is not offered, students may take a maximum of 3 credit hours of course work within the curriculum requirements of the academic program with the approval of the instructor and the program director.

When Offered
Occassionaly

RCSS 5930 - Selected Topics in RCSS (3 cr.)

Prerequisites
Consent of the faculty advisor.

Description
Topics to be chosen according to specific interests. Maybe taken for credit more than once if content changes.

RCSS 5980 - Capstone Project (3 cr.)

Description
Students are required to attend the library and the writing modules of SCI 5940 and , to undertake an engineering project approved by student's advisor and the director of the program. A final report of the project should be submitted and orally defended in the presence of a supervisory committee consist of student's advisor and two faculty members.

RCSS 5981 - Research Guidance Thesis (3 cr.)

Prerequisites
ENGR 5940

Description
Consultation on problems related to student thesis.

Notes
Must be taken twice for a total of 6 credits.

RCSS 6930 - Advanced Selected Topics in Robotics, Control and Smart Systems (RCSS) (3 cr.)

Description
Advanced topics in the field of Robotics, Control and Smart Systems (RCSS) to be chosen every year according to specific interests and the evolution of knowledge and development trends in RCSS. May be taken for credit more than once if content changes.

RCSS 6980 - Research Guidance Dissertation (3 cr.)

Description
Consultation on problems related to students thesis. To be taken 11 times for credit.

Science

SCI 1009 - Exploration of the Universe (3 cr.)

Prerequisites
Prerequisite: Not for credit for Science, Engineering and Computer Science students.

Description
An introduction to historical and conceptual developments in astronomy. Stars and galaxies: the sun as a case history in stellar evolution; the formation of elements in the stars. A survey of the sky with particular attention to the solar system: the members of the solar system as physical bodies with specific structures and as entities whose motion characteristics can be understood and predicted.

When Offered
Offered in fall and spring.

SCI 1017 - General Science Laboratory (1 cr.)

Description

This general science lab covers fundamental concepts of three major scientific domains: namely, physics, chemistry, and biology. Topics covered include light and sound, electricity and magnetism, renewable energy, conservation of energy; metals and their reactivity, electrolytes, acids, and bases, cosmetics; blood groups, carbohydrates, proteins, and fats, and nutrition.

Hours
One three-hour lab period.
When Offered
Offered in fall, spring, and occasionally in winter and summer.
Notes
Not for credit for School of Sciences and Engineering students except for Actuarial Science and Data Science students.

SCI 1020 - Scientific Thinking (3 cr.)

Description

A survey of the pillars of science with a focus on the nature of science and the demarcation between science and pseudoscience. Types of logical reasoning, argument analysis and logical fallacies. The scientific process of investigation: Research methods, experimental design and

research validity. Morals and ethics in science. Quantitative reasoning: Data analysis, graph presentation and interpretation.

When Offered

Offered in the fall and spring.

SCI 1930 - Selected Topic for Core Curriculum (3 cr.)

Description

Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

When Offered

Offered occasionally.

SCI 2005 - Introduction to Geology (3 cr.)

Description

The environment of Earth and the natural forces that shape it; Earth's materials, origin and its 4.5 billion years history; geological events and their implications in finding oil and gas and other natural energy resources; economic contributions of geology to the environment; special case studies with emphasis on Egypt are discussed.

When Offered

Offered in fall and spring.

SCI 2015 - Introduction to Geology Lab (1 cr.)

Description

Introduction to the physical properties of the earth material. Identification of minerals and all types of rocks; mode of preservation and identification; of fossils; topographic maps and map readings; geological maps and cross sections; remote sensing (aerial photography).

Hours

One three-hour lab period.

When Offered
Offered in fall and spring.

SCI 3920 - Special Problems in Science (1-3 cr.)

Prerequisites
Consent of instructor and approval of the associate dean for undergraduate studies based on a well-defined proposal.

Description
Independent study in various problem areas related to the offered general science (SCI) courses to supplement the transferred topics in that particular course to match the corresponding SCI course at AUC.

SCI 5940 - Graduate Thesis Seminar (3 cr.)

Prerequisites
Completion of 9 cr hrs

Description
Seminar on research topics, research methodology, proposal and thesis writing. The course is intended to serve as a forum in which graduate students can present and discuss their research work and learn various research skills

Sociology

SOC 1099 - Selected Topics for Core Curriculum (3 cr.)

Description
Course addressing broad intellectual concerns and accessible to students as part of the Freshman Level of the Core Curriculum.

SOC 2099 - Selected Topics for Core Curriculum (3 cr.)

Prerequisites
RHET 1010

Description
Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

When Offered
Offered occasionally.

SOC 2101 - Introduction to Sociology (3 cr.)

Description
General sociology concepts and theoretical issues. Survey of the field covering the sociology of small groups, the family, education, work, community structure, and political life; discussions on the uses of sociology.

When Offered
Offered in fall and spring.

SOC 2201 - Introduction to Community Development (3 cr.)

Description

Introduce the students to the different concepts and approaches to community development as well as to community organizing. Utilizes a critically reflective framework as part of the curriculum to overcome the potential division between theory and practice. Identifies the key issues that the students are likely to confront in community development and organizing work.

Cross-listed
Same as PSYC 2201
When Offered
Offered in fall.

SOC 2301 - Social Problems of the Middle East (3 cr.)

Description
Major theoretical perspectives in studying social problems. Systematic examination of the salient stresses and strains in Egyptian, Arab, and Middle Eastern societies. Discussion of

selected concrete problems, such as population, bureaucracy, youth unrest, deviance, drugs, prostitution.

When Offered
Offered in fall and spring.

SOC 2302 - Arab Family Structure and Dynamics (3 cr.)

Description
The family as a social institution with emphasis on Middle Eastern characteristics, selected aspects of marriage and family life, special attention to the social consequences of changing family styles.

When Offered
Offered in fall and spring.

SOC 2401 - Society and Culture in Egypt (3 cr.)

Description
Investigates the social and cultural characteristics of contemporary Egyptian Society, considering the specific historical, economic, geopolitical, and ideological forces that shape it. The course pays particular attention to the major theoretical debates that informed the question of identity formation in the Egyptian context. The course discusses selected themes including gender formation, class dynamics, migration and mobility, and racial politics.

When Offered
Offered in fall and spring.

SOC 2402 - Family, Kin and Friends in Egypt (3 cr.)

Description
This course will examine the nature of family, kin, and friends in a comparative perspective, with special attention to Egypt, and theories of family structure and family/societal change including the social consequences of changing family formations due to work migration, aging parents without family care takers, and women's involvement in the workforce external to domestic labor to name a few. The course will explore kin- and friendship ties in a changing world through

selected themes such as gender (including masculinities), sexuality, intimacy, class, age, power relationships, and their intersections. What are the differences in family, marriage, and friendship ties? What can friendship patterns - intimate, trustful, and voluntarily chosen ties people maintain - tell us about societies? What role do social institutions play when thinking about these structures?

When Offered
Offered in fall and spring.

SOC 2403 - Social Issues in Egypt (3 cr.)

Description
This course provides an introduction to sociology and social science in general through the study of social issues and problems in the particular society of Egypt. This course enables you to approach Egyptian society by studying its problems and the main issues its citizens are facing daily. Therefore, it will discuss various social issues and problems in Egypt including education issues, issues of social stratification and inequality, street children problems, gender issues and urban issues. This course will not only emphasize on significant social issues and problems confronting the contemporary Egyptian society but will also examine the process through which they arise, the debates that accompany them; and finally considers possible solutions to them.

When Offered
Offered in fall and spring

SOC 3010 - Social Psychology (3 cr.)

Prerequisites
PSYC 1000

Description
The extension of general psychological principles and methods to the study of interaction and social environment. The nature and methodology of research in social psychology. The major theoretical concepts and their applications and contributions to a variety of areas in the field including development and socialization, social perception and attribution of causality, attitude formation and changes, pro- and anti-social behavior, interpersonal attraction and intimacy, and the social effects and functions of groups.

Cross-listed
Same as PSYC 3010 .
When Offered
Offered occasionally.

SOC 3025 - Development Agencies (3 cr.)

Prerequisites
Three hours of Social Sciences.

Description
The course examines the various agencies active in the field of development. It investigates how these organizations, such as NGOs, state bureaucracy and international development organizations shape the process of development.

When Offered
Offered occasionally.

SOC 3045 - The Urban Experience (3 cr.)

Prerequisites
Three hours of Social Sciences.

Description
This course will explore a variety of approaches for the study of life in cities, providing students with tools to think critically about the meaning of urban life in the new century. Are cities the vibrant, vital centers of all that is exciting, new and provocative in modern life or are they the decaying, decadent and dangerous remnants of an industrial age whose time has passed? How do we link the lives of corporate elites and pop icons with crack dealers and shanty town dwellers? How do we place migration, world capital flows, transnational media, and global consumption in our studies of city life?

When Offered
Offered occasionally.

SOC 3060 - Social Constructions of Difference: Race, Class and Gender (3 cr.)

Prerequisites
Three hours of Social Sciences.

Description
The course will first introduce students to the vast theoretical literature on the concepts of race, class and gender from sociology and anthropology. Second, the course will expect students to shift focus away from looking at different cultures to analyzing cultural productions of difference. In the course we will be concerned with how racial, class and gender identities are shaped by diverse hegemonic systems, modes of resistance, and the structuring of social relations in different societies.

When Offered
Offered occasionally.

SOC 3085 - Environmental Issues in Egypt (3 cr.)

Prerequisites
Three hours of Social Sciences.

Description

The technical aspects of environmental issues in Egypt are examined taking into account the cultural, social, and political dimensions upsetting the balance of the environment. Major issues such as water scarcity, global warming, desertification, urban pollution, tourism, and demographic pressures are presented and analyzed.

When Offered
Offered occasionally.

SOC 3102 - History of Social Theory (3 cr.)

Prerequisites
9 hours of social sciences, and junior or senior standing, or consent of instructor.

Description

The nature and function of social theory and its development, especially since the Enlightenment. Emphasis on the cumulative insights and ideas which have contributed to modern social theory. The essential aspects of the philosophy of social science, especially epistemological problems in the sciences of sociology and anthropology.

When Offered
Offered in fall.

SOC 3103 - Social Statistics (3 cr.)

Prerequisites
Three hours of Social Sciences

Description
This course is designed for students in the social sciences who do not have a background in mathematics except high school algebra. The course will provide an introduction to statistics as a tool for analyzing and understanding data related to social life. The course deals with basic concepts and procedures and integrates SPSS demonstrations and exercises.

When Offered
Offered in fall.

SOC 3105 - Sociological Research Methods and Tools (3 cr.)

Prerequisites
SOC 2101 and SOC 3103 or consent of the instructor.

Description
This course covers some of the major research techniques and tools which sociologists use to observe and interpret the social world. The first half focuses on issues of the logic of research and research design, the general procedures for research design, and research ethics. The second half will deal more specifically with a variety of techniques of gathering data which may include survey research, field and observational methods, experiments, content analysis, and historical methods. Some of the software programs that are critical for conducting social scientific research in the 21st century that will be covered may include those for statistical analysis, qualitative data analysis, database management, the creation of maps and timelines, and the presentation of research reports. This course aims to make students more

knowledgeable and critical practitioners, consumers, and evaluators of social science data and research.

When Offered
Offered in spring.

SOC 3202 - Participatory Action Research in Community Settings (3 cr.)

Prerequisites
Three hours of Social Sciences.

Description

This course will introduce students to the appropriate research methodologies when dealing with community organizing and development, particularly the participatory action research approach to community development.

Cross-listed
Same as PSYC 3202
When Offered
Offered in fall.

SOC 3303 - Social Movements (3 cr.)

Prerequisites
Three hours of Social Sciences.

Description
Basic processes by which societies initiate, consolidate, transform, and change their basic institutions and social structures. Anatomy of reform and revolutionary social movements, especially those affecting Arab and Third World societies.

When Offered
Offered in fall and spring.

SOC 3304 - Social Class and Inequality (3 cr.)

Prerequisites
Three hours of Social Sciences.

Description
The basic theory and methods of the sociology of inequality. The nature and variety of stratification systems, major theories of stratification, empirical studies and social correlates of class phenomena, social mobility, and class conflict. Emphasis on Middle Eastern material.

When Offered
Offered in fall and spring

SOC 3305 - Selected Topics in Sociology (3 cr.)

Prerequisites
Three hours of Social Sciences

Description
This is a selected topics course that can vary according to the area and expertise of the faculty member.

When Offered
Offered occasionally.
Repeatable
May be repeated for credit if content changes.

SOC 4005 - Sociology of Work (3 cr.)

Prerequisites
Prerequisites: Junior or senior standing, 6 hrs. of social science or the permission of the instructor.

Description
The course examines the concept of work and how it is defined and understood in contemporary society. It investigates the changing nature of work, labor issues, changing management styles, and gender and the work place.

When Offered
Offered occasionally.

SOC 4035 - Political Sociology (3 cr.)

Prerequisites
9 hours of social sciences and junior or senior standing

Description
Social bases of various political systems such as Western-type democracy, authoritarianism, and totalitarianism. Topics include: determinants of political behavior, power, elite formation, bureaucracy, and the political role of the military and intellectuals in Third World societies.

Cross-listed
Same as POLS 4035
When Offered
Offered occasionally.

SOC 4099 - Selected Topics in Sociology (3 cr.)

Prerequisites
Prerequisites: 9 hours of social sciences, and junior or senior standing.

Description
Topics to be chosen according to specific interests, such as sociology of medicine, sex roles, symbolic interaction, applied sociology.

When Offered
Offered occasionally.
Repeatable
May be repeated for credit if content changes.

SOC 4107 - Senior Seminar (3 cr.)

Prerequisites
Senior standing and SOC 3105 or ANTH 3105 or 12 hours of Social Sciences.

Description
Emphasis on current methodological trends in anthropology and sociology reflecting the research interests of the faculty and students, and drawing on the experience of the undergraduate career. Content may therefore vary from year to year.

When Offered
Offered in spring.
Notes
The student will be required to write a methodologically sound senior paper, preferably based on field research.

SOC 4405 - Independent Study (3 cr.)

Prerequisites
Prerequisites: a minimum B average, consent of the instructor, and approval by the Unit Head and the Department Chair.

Description
In exceptional circumstances some seniors and graduating seniors with department approval may arrange for independent study on a chosen topic in sociology that is not covered in the regular offerings for that academic year. Guided readings, research and frequent consultations held

When Offered
Offered in fall and spring.
Repeatable
May be repeated for credit if content changes

SOC 4560 - Development Studies Seminar (3 cr.)

Prerequisites
12 credit hours of social science.

Description

This advanced seminar offers students an interdisciplinary and comparative analysis of development as a process and as a historical phenomenon from anthropological and sociological perspectives. It involves the critical evaluation of economic, political, social and cultural, technological and managerial factors that structure developmental change.

Cross-listed
Same as POLS 4560
When Offered
Offered occasionally.

Sociology-Anthropology

SOC/ANTH 5201 - Classical Social Thought (3 cr.)

Prerequisites
Consent of Instructor for non-SOAN graduate students.

Description
An in-depth examination of classical sociological and anthropological theories of culture and society.

When Offered
Offered in fall.

SOC/ANTH 5202 - Contemporary Social Thought (3 cr.)

Prerequisites
SOC/ANTH 5201 and consent of instructor for non-SOAN graduate students.

Description
An in-depth examination fo contemporary sociological and anthropological theories of culture and society.

When Offered
Offered in spring.

SOC/ANTH 5203 - Ethnographic Fieldwork (3 cr.)

Description
Techniques of participant observation, non-participant observation, and in-depth interviewing used in anthropology and ethnomethodology. Issues include problems of access, grounded theory and ethical issues. Students will normally carry out a fieldwork project for the course.

When Offered
Offered in spring.

SOC/ANTH 5204 - The Magic of Numbers: Reading and Working with Numbers (3 cr.)

Description
A critical analysis of how to read numbers and statistics, their diverse meanings and effects. The seminar will also integrate basic knowledge about working with numbers and quantitative methods.

When Offered
Offered in spring.
Notes
If a students student takes SOC/ANTH 5203 then SOC-ANTH 5204 serves as an elective.

SOC/ANTH 5205 - Time and Temporality (3 cr.)

Description
Critical analysis of the meaning and experiences of time, duration and how they shape our life-worlds. The course explores how time is governed, how we navigate duration, and what are the implications for contemporary sensibilities of being stuck, or having no future. The seminar poses questions regarding our imagining of time and the modern parameters disciplining our bodies and minds, our very fundamental experiences of space and time, and asks whether and how other imaginaries are still possible?

When Offered
Offered in alternate years.

SOC/ANTH 5210 - Selected Topics in Sociology-Anthropology (3 cr.)

Description
Topics to be chosen according to specific interest, such as: work and precarity; affect; infrastructure; time and temporality; sociology of knowledge, among others.

When Offered
Offered occasionally.
Repeatable
There can be different sections of the same course if the topics of the course change and are different.

SOC/ANTH 5215 - Relations: Kin, Friends and Neighors (3 cr.)

Description
Critical exploration of how relations are assembled and how they matter in contemporary lifeworlds. Special focus on how mobility, precarity, the anthropocene and neoliberal governance affect the ways humans and non-humans generate and break connections and ties.

When Offered
Offered occasionally

SOC/ANTH 5220 - Gender and Sexuality (3 cr.)

Description
How sex roles and gender are socially constructed in cross-cultural perspectives: special emphasis on the impact of social-cultural change on gender relations.

When Offered
Offered in alternate years.

SOC/ANTH 5225 - The Sacred and the Profane: Religion and Society (3 cr.)

Description
This course explores a recurring theme in sociology and anthropology - the relationship between religion and society. Central to the investigations is a questioning of the role of religion in the creation of the modern world and the place of religion in modernity. Students will gain an

understanding of the manner in which theorists attribute to religion a role in the formation of essential aspects of the modern world - capitalism, the nation-state, citizenship and science, and revisit the relationship between religion and contemporary society that escape the secularization paradigm.

When Offered
Offered occasionally

SOC/ANTH 5230 - Theorizing the State (3 cr.)

Description
This course offers a critical reading of the concept of the state, particularly in relation to governance and power, regulation of subjects and citizens, discourses and practices of normalization of social orders, and limits to state power.

When Offered
Offered in alternate years.

SOC/ANTH 5245 - The City: The Making and Unmaking of Urban Lifeworlds (3 cr.)

Description
Critical readings about cities as spatio-temporal constellations both historically and in the contemporary world.

When Offered
Offered occasionally.

SOC/ANTH 5255 - Care, Well-Being and Decent Life (3 cr.)

Description
Critical examination of sensibilities and practices about decent life, care and well-being that are intimately tied to precarization of lives, displacement and mobility, and shifts in political subjectivities.

When Offered
Offered occasionally

SOC/ANTH 5265 - Ethnicity, Identity and Nationalism (3 cr.)

Description
This course examines the factors that contribute to modern nationalism or contradict it. Such factors include ethnic and other forms of identity such as those constructed around the notions of race, language, and religion. The approach to the imagined community is both cultural, dealing with identity formation and maintenance, and social, stressing processes and social groups.

When Offered
Offered in alternate years.

SOC/ANTH 5270 - Environments, Ecologies and the Anthropocene (3 cr.)

Description
This course critically examines life in the anthropocene through an examination of the relations and ecologies that underwrite survival in the ongoing wreckage of capitalism, climate change, and political governance.

When Offered
Offered occasionally.

SOC/ANTH 5275 - Insurgent Publics (3 cr.)

Description
This course will explore social movements that emerge within larger social frames, and how they make claims on the cultural norms, logics of representation, policies, and politics of the public. It will critically explore how change happens within an established social imaginary.

When Offered
Offered occasionally

SOC/ANTH 5280 - History and Memory (3 cr.)

Description

This course is an examination of the meanings and relationships between the past, memory and history in anthropological practices and debates. Specifically, it seeks an analysis of the conceptual and methodological boundaries between history production and collective memory paradigms.

When Offered
Offered in alternate years.

SOC/ANTH 5285 - Reading Egypt (3 cr.)

Description
Critical readings of scholarship on Egypt with special emphasis on how contemporary debates in anthropology and sociology emerge in such engagements.

When Offered
Offered occasionally

SOC/ANTH 5289 - Comprehensives (0 cr.)

Description
This course provides a forum for an independent review of the main concepts of the program's core subject areas in preparation for the comprehensive examination. The student will take a written examination at the conclusion of the course and must receive a passing grade to be successful. An oral examination may be required in addition to the written examination. The comprehensive examination may be repeated once. A student who fails the comprehensive examination a second time would be dismissed from the degree program at the end of the semester in which the examination was retaken.

When Offered
When needed by students taking comprehensive exam.

SOC/ANTH 5295 - Reading Capital (3 cr.)

Description
This course offers a reading in the genealogies of capital in order to critically engage emergent political, economic and social forms. The course examines the nexus between events, structure,

agency; Marxist conceptions of the making of histories; the variety of Marxian frameworks delineating the relation between socio-economic and political rights.

SOC/ANTH 5297 - Independent Study and Readings (3 cr.)

Prerequisites
Department approval.

Description
Guided individual readings and/or research on a subject of mutual interest to student and faculty member that will not be covered in a regularly offered course.

When Offered
Offered in fall and spring.
Repeatable
May be taken only once.

SOC/ANTH 5298 - Thesis Writing Seminar (3 cr.)

Prerequisites
SOC/ANTH 5201 ,SOC/ANTH 5202 and either SOC/ANTH 5203 ,SOC/ANTH 5204 or the consent of the instructor.

Description
This course serves as an intermediary phase between the research proposal and the Master's thesis, which is designed to help students transition from fieldwork and data collection to data analysis and writing up. Students will be lead through a process of documenting, analyzing, and presenting their data in ways that emphasize faculty and peer evaluation and feedback.

SOC/ANTH 5299 - Research Guidance and Thesis (no cr.)

Description
Consultation for students in problems related to their theses.

When Offered
Offered in fall and spring.

Sustainable Development

GREN 5201 - Global Changes and Sustainable Development (3 cr.)

Description
This course is an introduction to the whole graduate program in Sustainable Development. It focuses on sustainable development and global changes - vital issues for humanity - with specific attention to the challenges in Egypt and developing countries and their transition from unsustainable to sustainable development. Topics include examples of unsustainable development and global challenges, the inter-linkages between the economy, society and environment, rethinking established ways of production and consumption, solid waste management, types of green businesses, the interrelationship between local and global challenges, economic growth, population growth, health and well-being, finding new ways of greening economics, water challenges and opportunities, renewable energy and energy efficiency, green buildings, sustainable agriculture, and climate change. The course prepares the students to face the community challenges and enables them to devise their solutions for those problem and contribute to creating a sustainable future.

GREN 5211 - Water Desalination (3 cr.)

Description
Description of methods of water analysis and treatment. Study of the properties of water and aqueous solutions. Detailed discussion and analysis of design, maintenance, energy requirements and economics of the major processes of desalination, such as distillation, reverse osmosis, and electrodialysis.

GREN 5214 - Green Buildings (3 cr.)

Description
Climate change and the building sector, Environmental impacts of the Construction Industry, Concept of Green Buildings, different rating systems, Sustainable Sites, Energy and Atmosphere, Indoor Environmental Quality, Materials & Resources, recycling contents & VOC, Green Building for Existing Buildings, water efficiency, life cycle cost analysis, innovation on design.

GREN 5215 - Sustainability of Thermal Systems (3 cr.)

Description
Energy systems; energy demand; energy audit; sustainable development; energy efficiency; energy management.

Cross-listed
MENG 6261

GREN 5216 - Water-Energy-Food Nexus (3 cr.)

Description
The course is an introduction to sustainable development and its relation to the Water-Energy-Food Nexus. This connection between three critical resources offers a conceptual tool for achieving sustainable development. It has become increasingly important to understand the interdependencies and interrelationships between the three resources. Finding new approaches to manage the nexus could contribute significantly to achieving the Global Sustainable Development Goals (SDGs). This course focuses on sustainable development and global changes which are vital issues for humanity. There is specific attention paid to the challenges in developed and developing countries and their transition from unsustainable to sustainable practices.

GREN 5217 - Renewable Energy Systems (3 cr.)

Description
This course examines the technical, economic and social aspects of renewable energy and its link with societies. Different renewable energy technologies (wind, solar, hydro, biomass, etc.) are investigated and the strengths and weaknesses of different policy options (feed-in tariffs, net-metering, etc.) are discussed. With a focus on solar energy, students will learn about implementing renewable energies at the local, national, and regional levels as well as exploring renewable energies through a business perspective.

GREN 5218 - Sustainable Agriculture (3 cr.)

Description

This course introduces the concept of Sustainable Agriculture to sustainable development master's students. It seeks to enable students understand how to increase food production in a way that ensures efficient usage and management of natural resources in a changing environment. The course ensures that the student acquires knowledge of practical concepts and attains skills that are paramount in tackling the most important challenges in the agricultural sector.

GREN 5219 - Selected Topics in Green Technologies (3 cr.)

Description
Selected topics of interest to green technologies. Topics will vary depending on contemporary tends in the field of green technologies and may reflect interdisciplinary content.

When Offered
Offered occasionally
Notes
Maybe taken more than once if content changes.

GREN 5220 - Integrated Water Resources Management (3 cr.)

Description
This course introduces the concept of integrated water resource management (IWRM) to sustainable development master's students. Integrated Water Resources Management is a coordinated, goal-directed process which promotes the coordinated development and management of water, land and related resources in order to maximize economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems and the environment. The course highlights the global water status and the different aspects related water analysis and treatment and explores the different properties of water and aqueous solutions. Water quality for human consumption, water quality for agriculture, water quality for industrial use will be discussed. Basic concepts of the major processes of desalination are elaborated, such as distillation, reverse osmosis, forward osmosis and electro dialysis. The course will discuss the topics both in depth and breadth with case studies when available.

GREN 5234 - Egyptian Environmental Law (3 cr.)

Description
This course will give you a broad practical understanding of the Egyptian environmental law. The course is designed to introduce you to the fascinating variety of important environmental challenges addressed by environmental laws, the difficult policy issues surrounding environmental problems, and the legal complexities of environmental regulatory and administrative schemes. Environmental laws can be extremely complex. This course, however, gives you the foundation by covering the "fundamentals" of Egyptian environmental law. You will also develop some critical analytical and research skills (such as analyzing problems and reading statutes) that are transferable to all areas of environmental law.

GREN 5251 - Graduate Thesis Seminar I (2 cr.)

Description
Seminar on multi-disciplinary research topics, research methodology, thesis writing, and presentations given by invited speakers. Speakers from different backgrounds and experiences will be invited from the involved schools as well as the international partners.

GREN 5281 - Sustainable Development Project Part One (3 cr.)

Prerequisites
Advisor Approval.

Description
Students complete three courses that cover the three dimensions (social, environment and economic) of advisor-supported community-based project applying learning from the M.Sc. Program in Sustainable Development. Upon approval, students can take this course with the other two courses concurrently. Part one will focus on the analysis of the project needs and the fact findings through field visits.

GREN 5282 - Sustainable Development Project Part Two (3 cr.)

Prerequisites
Advisor Approval.

Description

Students complete three courses that cover the three dimensions (social, environment and economic) of advisor-supported community-based project applying learning from the M.Sc. Program in Sustainable Development. Upon approval, students can take this course with the other two courses concurrently. Part two will focus on the planning of the community problem which should respect the principles of sustainable development and participatory approach.

GREN 5283 - Sustainable Development Project Part Three (3 cr.)

Prerequisites
Advisor Approval.

Description
Students complete three courses that cover the three dimensions (social, environment and economic) of advisor-supported community-based project applying learning from the M.Sc. Program in Sustainable Development. Upon approval, students can take this course with the other two courses concurrently. Part three will focus on planning the action plan for implementing the planned solutions and validating the implementation with the identified stakeholders in the field.

GREN 5910 - Independent Study in Sustainable Development (3 cr.)

Description
This course offers for students the change to study beyond the regular course offerings. Guided reading for research and discussions based on a subject of mutual interest to the student and the responsible faculty member. The student demonstrates his/her achievement by submitting deliverables according to the agreement with the responsible faculty and in line with the course load of a graduate course.

GREN 5930 - Selected Topics: Entrepreneurship in Sustainability (3 cr.)

Description
Selected topics of interest to Business and Entrepreneurship. Topics will vary depending on contemporary trends in the field of business and entrepreneurship and may reflect interdisciplinary content.

When Offered

Offered occasionally.

Repeatable

May be taken more than once if content changes.

GREN 5980 - Research Guidance Thesis (3 cr.)

Prerequisites

SCI 5940

Description

Consultation on problems related to student thesis.

Notes

It must be taken twice for a total of 6 credits.

Theatre

THTR 1099 - Selected Topics for Core Curriculum (3 cr.)

Description

A course that addresses broad intellectual concerns and is accessible to students from any major or class level. The course is offered as part of the Freshman Level of the Core Curriculum.

When Offered

Offered occasionally.

THTR 1101 - The World of the Theatre (3 cr.)

Description

An initiation into the world of the theatre with the aim of developing the critical skills of an informed and perceptive audience member through the reading of plays, critical articles, and the attendance of stage performances and film versions of plays.

THTR 1200 - Acting for Non-Majors (3 cr.)

Description
An introduction to the art and technique of acting for the non-major student, utilizing training games and exercises to present the student with a general overview of the acting process, while also providing experiences and techniques beneficial to basic human communication.

When Offered
Offered in fall and spring.
Notes
May not be used for departmental credit by theatre majors or minors.

THTR 1201 - Theatre in the Making (3 cr.)

Description
An introduction to theatre as a collective art form by exploring all of its components and participants: from playwright to actor, from director to designers, from producing team to audience.

When Offered
Offered in fall and spring.

THTR 2099 - Selected Topics for Core Curriculum (3 cr.)

Prerequisites
RHET 1010

Description
Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

When Offered
Offered occasionally.

THTR 2201 - Acting I (3 cr.)

Description

A basic course in the fundamentals of acting, designed for majors, minors, and those with some previous experience. In-class exercises and improvisations, combined with rehearsed scenes and monologues from simple realistic texts, will help students gain proficiency in objective/obstacles, creation of a character, basic voice and breath control, and basic body alignment and awareness.

When Offered
Offered in fall and spring, and occasionally in the summer.

THTR 2211 - Acting in Arabic I (3 cr.)

Description
The art and craft of acting as a systematic process applied to the specific demands of Arabic Drama. Scene work and monologues from modern and contemporary Arabic plays.

When Offered
Offered in fall or spring, and occasionally in the summer.

THTR 2401 - Introduction to Technical Theatre (3 cr.)

Description
An introduction to the theories, techniques, tools, and materials of technical theatre. Technical areas to be covered include organization, architecture, shops, stage equipment, scenery, props, lighting, sound, costumes, technical direction, and stage management.

When Offered
Offered in fall and spring.
Notes
Students will be expected to work on one of the technical crews for a major theatre department production concurrently with the course.

THTR 2601 - Production Practicum (3 cr.)

Prerequisites
THTR 1201

Description
A course for any student who wishes to gain academic credit for significant contribution to departmental theatre productions in one of the following areas: a. Scenery, b. Costume, c. Props, d. Lighting, e. Sound; or f. Run Crew. A minimum of 50 hours of practical work are required. Students work under the direct supervision of a theatre faculty member.

When Offered
Offered in fall and spring.
Notes
This is a Pass/Fail course.

THTR 2603 - Rehearsal and Performance Practicum (3 cr.)

Prerequisites
Consent of instructor.

Description

A course for any student who wishes to gain academic credit for significant contribution to departmental theatre productions in one of the following areas: a. Performance or b. Stage Management. Students work under direct supervision of a theatre faculty member. Registration by permission of the faculty member in charge of the specific activity and/or by audition.

When Offered
Offered in fall and spring.
Notes
This is a Pass/Fail course.

THTR 3099 - Selected Topics in Theatre (3 cr.)

Prerequisites
Prerequisite: consent of the instructor.

Description
In-depth examination of specific topics in theatre determined by the special interests and expertise of the faculty.

When Offered
Offered occasionally.
Repeatable
May be repeated for credit if content changes

THTR 3103 - Drama in Context I: Ritual to Pre-Modern (3 cr.)

Description
A study of dramatic history, literature and theatre practice in its social context beginning with ancient rituals through the 1700's. Theatrical performance is studied for its cultural influences, literary value and as points of departure for exploration of performance and design practices.

The course examines the different uses of space and the ways in which theatre and the societies which produce it serve to reflect one another.

When Offered
Offered in Fall.

THTR 3104 - Drama in Context II: Modern to Contemporary (3 cr.)

Description
This course examines theatrical works and their historical context from early modernity (turn of the nineteenth century) to contemporary texts and focuses on histories of global dramatic work. It explores the changes in certain dramatic genres within various cultures and across time. The course explores the nature of performances and their effects on various audiences and addresses the question of how dramatic texts are impacted by social and political change.

When Offered
Offered in spring.

THTR 3201 - Acting II (3 cr.)

Prerequisites
THTR 2201

Description
Students will build upon their knowledge of the acting process through focus upon a more

rigorous examination of the development of a character, utilizing challenging scenes from early modern playwrights such as Chekhov, Pinter, Albee and Williams. Additionally, vocal and body work will continue through exploration of standard speech production, kinesthetic and relaxation techniques.

When Offered
Offered once a year.

THTR 3202 - Acting for the Camera (3 cr.)

Prerequisites
THTR 2201

Description
This course teaches the fundamentals of performing for the camera. Through exercises and scene study, this course will expand the performer's range of emotional, intellectual, physical, and vocal expressiveness for the camera. Students will act in on-camera exercises, television scenes, and film scenes to learn to create and develop dimensional characters for the screen.

When Offered
Fall or Spring.

THTR 3203 - Special Topics in Acting (3 cr.)

Prerequisites
THTR 3201

Description
In-depth examination and implementation of specialized acting and performance skills and techniques. Focus of study to be determined by the special interests and expertise of the faculty.

When Offered
Offered occasionally.
Repeatable
May be repeated for credit if content changes

THTR 3205 - Acting Styles (3 cr.)

Prerequisites
THTR 3201

Description
An advanced acting class, offering exploration and techniques in varied acting styles, including but not limited to Greek/Roman, Medieval, Restoration, Neo-Classicism, Romantism, Farce, Expressionism and Absurdism. Vocal work will be examined through ensemble patterns, shared speech and period movement. Content of course to be determined by the interests and expertise of the faculty.

When Offered
Offered once every other year.

THTR 3207 - Movement for the Stage (3 cr.)

Prerequisites
THTR 2201 or THTR 2211

Description
Movement for the Stage focuses on increasing the strength, flexibility, endurance, and movement vocabulary of the actors physical instrument, its presence in space, and the use of it as a tool for theatrical storytelling.

THTR 3211 - Acting in Arabic II (3 cr.)

Prerequisites
THTR 2211

Description
A continuation on a more advanced level of the work started in Acting in Arabic I, applied to a wider range culminating in the presentation of a class term project.

When Offered
Offered in fall or spring.

THTR 3301 - Directing I (3 cr.)

Prerequisites
THTR 2201

Description
The fundamental directorial controls, as well as theoretical and practical training, leading to the production of single scenes.

When Offered
Offered in fall.
Repeatable
May be repeated once for credit as content changes.

THTR 3401 - Design for the Theatre (3 cr.)

Prerequisites
THTR 1201 and THTR 2401

Description
A study of the principles of visual design and their application for the theatre. Play analysis that focuses on visual and spatial design requirements. Includes scenery, costumes, and lighting. Involves drawing, painting, model making, and research into period styles.

When Offered
Offered once a year.

THTR 3403 - Make Up for the Theatre (3 cr.)

Description
This course is an introduction to theatrical make up techniques for the actor. Students will explore the process of developing character through the manipulation and transformation of their facial characteristics with makeup. Projects will focus primarily on two dimensional techniques, but will introduce latex and other three dimensional techniques and will cover a wide range of character and special effects applications.

When Offered
Offered occasionally in winter or summer session.

THTR 3501 - Scriptwriting (3 cr.)

Description
A workshop in which students develop basic technical skills of playwriting through exercises culminating in the production of a working scenario for a short one-act play.

When Offered
Offered in fall or spring.

THTR 3601 - Advanced Theatre Practicum (3 cr.)

Prerequisites
THTR 2603 or consent of the instructor.

Description

Advanced, specialized, and intensive participation in theatre performance production activities. Assignments made in casting, or major supervisory positions in consultation with, and under the supervision of, a theatre faculty member.

When Offered
Offered in fall and spring.
Repeatable
Repeatable for credit.

THTR 3603 - Advanced Production and Design Practicum (3 cr.)

Prerequisites
Selection by application and interview.

Description

A course for students who wish to learn about theatre design through participation in designing a departmental theatre production. Students selected through application and interview process.

When Offered
Offered occasionally.
Repeatable
Repeatable for credit.
Notes
Selected students will form a design team that will be responsible for designing scenery, props, costumes, lighting, and sound for a major production.

THTR 3604 - Arab Women Playwrights (3 cr.)

Description

The course provides a broad introduction to the dramatic production of Arab women playwrights through readings of representative samples of plays by women across the Arab world and includes immigrant and diasporic writings.The course ponders the philosophical, ideological and political perspectives of Arab women writers as they are articulated and/or alluded to in their writing.

When Offered
Offered in fall or spring.

THTR 4000 - Independent Study (1-3 cr.)

Prerequisites
Minimum B average required.

Description
In exceptional circumstances, some senior majors may arrange, with departmental approval, to study beyond the regular course offerings.

When Offered
Offered in fall and spring.

THTR 4103 - Dramatic Theory and Criticism (3 cr.)

Description

An exploration of the various and conflicting perceptions of the nature and function of drama through the study of major works of dramatic theory and criticism from the Greeks to the present.

When Offered
Offered in alternate springs.

THTR 4110 - Theatrical and Dramatic Translation (3 cr.)

Description
A critical exploration of the particular challenges surrounding a number of "translations" of drama, with specific focus on the nature of dramatic language, the adaptability and contemporary value of myth, cultural and historical barriers and the means of challenging them, the shortcomings and advantages of dramaturgy, and the inevitable concrete requirements of performance.

When Offered
Offered occasionally.

THTR 4301 - Directing II (3 cr.)

Prerequisites
THTR 3301 and completion of all 2000-level requirements.

Description
Advanced theoretical and practical, production-oriented training in play direction culminating in the presentation of a directorial project.

When Offered
Offered occasionally.

THTR 4404 - Scene Design (3 cr.)

Prerequisites
THTR 2401 and THTR 3401

Description
The study of the principles of design and their application for scenery for the theatre. Course work will center on play analysis that focuses on visual and spatial design requirements and the design process. Will include drawing, painting, model making, and research into period styles.

When Offered
Offered occasionally.

THTR 4405 - Stage Lighting (3 cr.)

Prerequisites
THTR 2401 or consent of instructor.

Description
The study of lighting theory and practice for the stage. Topics to be covered are: fundamentals of light theory, basics of electricity, lighting equipment and its use, historical overview of lighting for theatre, examination of current lighting methodology and an introduction to lighting design.

When Offered
Offered occasionally.

THTR 4406 - Costume Design for Theatre and Film (3 cr.)

Prerequisites
THTR 2401, THTR 3401 or consent of instructor.

Description
Students will examine the social and historical dynamics of dress and the application of those dynamics to the theatrical and film costume. Coursework will include research into the history of dress and it's application to historical costume design as well as the interpretation of contemporary scripts for costume design. Will include instruction in fundamental drawing and painting skills.

When Offered
Offered occasionally.

THTR 4444 - Internship in Drama (3 cr.)

Prerequisites
THTR 1201, THTR 2401 and instructor approval.

Description

This course is for students who are undertaking hands-on experience in the field and prepares students for professional work in the industry.

When Offered
Offered in fall and spring.
Repeatable
Repeatable once for credit.
Notes
This is a Pass/Fail course.

THTR 4701 - Senior Seminar (3 cr.)

Prerequisites
Prerequisite: consent of the instructor.

Description
In-depth examination of advanced topics in theatre determined by the special interests of the faculty.

When Offered
Offered occasionally.
Notes
Designed for senior majors.

THTR 4703 - Senior Thesis (3 cr.)

Prerequisites
THTR 3301, THTR 3401. Some projects will have additional prerequisites.

Description

Students will develop a major project, combining research and creative work that enables the student to integrate course work from the theatre curriculum with self directed application. Projects will be of a depth of study and creative engagement to warrant a capstone project on a senior level and could include work in the areas of acting, directing, design, playwriting, or dramaturgy. Students will propose projects in the semester before the course is taken and will be subject to faculty approval.

When Offered

Offered in spring.

Television and Digital Journalism

TVDJ 5102 - Social Media Journalism (3 cr.)

Description

This course is designed as deep dive practical journey with intensive hands-on experience, focusing on three main pillars for social media journalism: social networking platforms, content formats and engagement tactics. Students will utilize social networks like Facebook, Twitter, Instagram and others, and learn how to best use each one of them in the news and media context. Students will also get hands-on practice on timely skills such as online verification tools, digital news-gathering and personal branding.

When Offered

Offered occasionally.

TVDJ 5203 - Media Ethics and Social Responsibility (3 cr.)

Description

Provides students with philosophical views of ethics; a critical examination of the rights, responsibilities, limitations, and abuses of media; and an analysis of emerging pressures to redefine television and digital journalism as a reliable, responsible process of accurate reportage and critical commentary on our society.

When Offered
Offered in spring.

TVDJ 5207 - Practicum: TV or Special Video Assignment (3 cr.)

Description
Field experience at an approved television, video/digital section of a publication or TV production companies in Egypt or abroad to be conducted preferably as a six week long summer internship or during a semester.

When Offered
Offered occasionally

TVDJ 5237 - TV Digital News Gathering and Script Writing (3 cr.)

Prerequisites
Advised to be taken concurrently with TVDJ 5241 and TVDJ 5242.

Description
Introduces students to the theory and practice of field reporting and production in both English and Arabic. Students will learn the concepts of television and digital journalism, the differences in reporting for broadcast and digital media, scriptwriting, use of visuals and related topics.

When Offered
Offered in fall.

TVDJ 5239 - TV Presentation and Voice Coaching (3 cr.)

Prerequisites
TVDJ 5237

Description
A workshop devoted to the presentation of TV news and features, particularly when "on camera". The prime focus of the course is to develop an awareness of how skeletal-muscular-respiratory organization can inhibit or promote vocal tone resonance and articulation, and to provide the physical experiences necessary to promote improvement in posture and breathing.

The course provides the means whereby unconscious, inappropriate personal habits i.e. grimace, frown; nervous gesture can be brought to consciousness and gradually eliminated. Particular attention will be given to developing unobtrusive and clear enunciation in English.

When Offered
Offered in fall and/or winter.

TVDJ 5240 - Documentary Filmmaking (3 cr.)

Description
This course will introduce long-format non-fiction storytelling and examine what makes this type of visual storytelling different from shorter news reports and feature reports. Students will look into the process of documentary filmmaking and its history, what long format non-fiction means, its boundaries, both formal and ethical, as well as the various tools available to a non-fiction storyteller. During the course, students will examine the wide array of documentaries covering political, cultural, historical, social, environmental topics, and more. Because it is storytelling with picture and sound, these elements will be utilized to make a cohesive and convincing argument. Storytelling techniques will culminate in each student's production of a non-fiction film.

When Offered
Offered occasionally.

TVDJ 5241 - Field and Studio Digital Camera Production (3 cr.)

Prerequisites
Advised to be taken concurrently with TVDJ 5237 and TVDJ 5242.

Description
Intensive field training on how to use digital video cameras. Students will learn the basics of camera shooting, sequencing, framing, lighting, and also how to conduct vox pops and interviews. Students will practice shooting on different field and studio camera models and formats, indoors, outdoors and in a studio environment. Students will also learn lighting techniques for the field and studio.

When Offered
Offered in fall.

TVDJ 5242 - Digital Video Editing (3 cr.)

Prerequisites
Advised to be taken concurrently with TVDJ 5241 and TVDJ 5237.

Description
Intensive training in editing labs to master the basic operation of video editing equipment. Students will learn how to edit their stories using machine to machine editing (linear editing) and software editing (non-linear editing). Students will also learn live video editing and production inside the studio.

When Offered
Offered in fall.

TVDJ 5245 - TV Studio News Reporting (3 cr.)

Prerequisites
TVDJ 5237 TVDJ 5241 and TVDJ 5242

Description
This course provides students with intensive, real-world exposure to the production of television field news reports. Students will be involved in all aspects of creating a weekly television news program, including reporting, executive producing, studio camera work, directing, writing and anchoring. Each student will produce a weekly three minute report.

When Offered
Offered in spring.

TVDJ 5246 - TV Digital Journalism Capstone (3 cr.)

Prerequisites
TVDJ 5245

Description
A continuation of TVDJ 5245 , this course provides more advanced training in producing television news broadcasts with an emphasis on writing, research, and execution of mini-documentaries, investigative reports and features. Students fluent in Arabic may produce reports in Arabic. Students will complete the required capstone project in this course.

When Offered
Offered in fall.

TVDJ 5270 - Interactive Journalism (3 cr.)

Prerequisites
TVDJ 5241, TVDJ 5242.

Description
Advanced principles of the continuing development of online journalism through interactive content and formats for digital platforms. Students will practice the use of multimedia tools to produce stories and learn about their effects on the role of journalism in today's society. The course will also focus on the techniques of journalism and storytelling in digital media, including lectures on new-media themes such as Virtual and Augmented Reality technologies and best-practice; security and ethical challenges; as well as features that distinguish online news platforms from print or broadcast media.

When Offered
Offered in Fall.

TVDJ 5290 - Special Topics (3 cr.)

Description
Content varies with the instructor. Can be repeated once for credit if content changes.

When Offered
Offered occasionally.

Visual Arts

ARTV 1099 - Selected Topics for Core Curriculum (3 cr.)

Description
A course that addresses broad intellectual concerns and is accessible to students from any major or class level. The course is offered as part of the Freshman Level of the Core Curriculum.

When Offered
Offered occasionally

ARTV 2113 - Introduction to Visual Cultures (3 cr.)

Description

This lecture course provides a primer in visual literacy across media, introducing students to key terms and methods for critically reading the visual world including iconology, formal analysis, art history, ideological analysis, and semiotics. Students gain fluency in understanding how images work in cultural context to communicate meaning, to express a sense of self, to convey pleasure, to sell things, and to distribute power. Questions of the effect of specific visual technologies are also engaged, particularly their impact on perception and conduct. Examples are drawn from fine art, advertising, film, popular culture, and new media.

ARTV 2200 - Art Foundations (3 cr.)

Description
This studio course introduces students to the foundations of art creation in a cross-disciplinary environment and media. Students will conduct extensive visual research throughout the semester, which will enable them to harness their creative potential. Students will develop their skills in the expressive use of analogue and digital media within art creation.

When Offered
Offered in fall and spring.

ARTV 2201 - Introduction to Drawing (3 cr.)

Description
An introduction to the technical and observational skills of drawing in a variety of mediums. Concepts of line, value and composition will be explored in objective, non-objective, still life, and landscape drawing exercises.

ARTV 2202 - Introduction to Painting (3 cr.)

Description

An introduction to the technical, aesthetic, and historical aspects of painting in a variety of mediums. Formal concepts of composition, pictorial space and color interaction are applied to subjects such as still life, landscape and the figure.

ARTV 2203 - Introduction to Sculpture (3 cr.)

Prerequisites
ARTV 2200

Description

An introduction to the contemporary practices in Sculpture. Offers a focused practice for students that addresses the origins and history of sculpture within the context of the gallery/museum and alternate environments.

ARTV 2204 - Introduction to Time-Based Media (3 cr.)

Description
Introduces students to the creative practice of video art in a production studio environment, including both concepts and techniques. Classes include workshops on camera, lighting, video effects, and sound recording techniques. Students create individual video projects.

ARTV 2207 - Introduction to Ceramics (3 cr.)

Description
This course aims to explore the various techniques and concepts of ceramics, with an emphasis on basic skills and crafts of clay. The course includes introductory information and experiments in clay free-hand technique related to ceramics arts, starting from making building techniques, glazing techniques and kiln firing operations. Students will be introduced to ceramic art history and its long-term cultural traditions, as well as contemporary ceramics concepts and ceramics installation arts. This course has a minimum of two filed trips to Fustat, an "ancient ceramics area in old Cairo" to explore the historical and local Craft of ceramic art and Egypt's social history in relation to the field.

ARTV 2208 - Internship Practice (3 cr.)

Prerequisites
Visual Arts major declaration.

Description

Internship at established independent contemporary art institutions for a specific period during the semester. Students will be expected to work on tasks such as archiving professional work, organizing public workshops and screenings, curating public exhibitions, and investigating the importance of archives and their various applications in exhibitions.

Notes
This is a Pass/Fail course.

ARTV 2214 - Global Art History: Ancient Power to Early Modernity (3 cr.)

Description

This introductory art history course aims at exploring Visual Art Practices from the Ancient Period to the late 19th century in a wide range of media such as architecture, sculpture, painting, print-making and photography. The works will be studied from a formal, conceptual, and expressive standpoint but also as evidences of a historical context. The course will be based on students' research, lectures and field trips. The field trips are designed to introduce students to their heritage and to explore the relationship between geography and artistic practice.

ARTV 2230 - Introduction to Photography and Media Arts (3 cr.)

Description

Introduces photographic practices in a digital environment. Explores camera, tools, techniques and conceptual approaches related to image capture and printing. A digital camera is required.

ARTV 3115 - Art Theory (3 cr.)

Prerequisites
ARTV 2113

Description
Offers an introduction to art theory from the start of the twentieth-century up until the present. Emphasis is on reading theoretical texts and interpreting their application to modern and contemporary artistic practices. The course is writing intensive.

ARTV 3270 - Selected Topics in Art (3 cr.)

Description
An in-depth examination of specific topics in Art determined by the special interests and expertise of the faculty.

When Offered
Offered in fall and spring.
Repeatable
May be repeated for credit when content is different

ARTV 3311 - Advanced Painting and Drawing (3 cr.)

Prerequisites
ARTV 2201 - Introduction to Drawing (3 cr.) or ARTV 2202 - Introduction to Painting (3 cr.)

Description
This course provides students with practical and advanced study of new techniques and concepts in contemporary painting and drawing, such as collage, assemblage and three dimensional installation art.

Students will study the theories of painting in contemporary art and its relation to contemporary painting methodologies.

ARTV 3312 - Advanced Studio Arts: New Media (3 cr.)

Prerequisites
ARTV 2200 and ARTV 2204 or ARTV 2230

Description

Advanced Studio Arts in New Media investigates the creative and conceptual questions driving artistic practice within digital, networked, and interactive environments. Through critical reflection and hands-on projects involving digital imaging, video, sound, interactivity, and coding, students engage with evolving media practices and cultural contexts. Each semester's focus is shaped by selected readings, screenings, and field experiences, complemented by visiting artists and guest speakers who offer insights into sustaining creative work within contemporary media communities.

ARTV 3313 - Advanced Studio Arts: Archival Practices (3 cr.)

Prerequisites
ARTV 2200

Description

This advanced studio course looks at archives and collections as creative practice, specifically looking at the archive itself as an object of critical analysis. Using interdisciplinary methods and readings on archival practice, students will be challenged to look critically at a range of archival collections to interrogate the motivations behind collecting and curating arts.

Through class discussions and projects, students will engage in various theoretical and practical contexts within a contemporary discourse on art and archival practices.

ARTV 3314 - Advanced Studio Arts: Community Engagement (3 cr.)

Prerequisites
ARTV 2200

Description

This is an advanced course that further develops students' studio practices with an initial multidisciplinary collaborative working process. Particular focus is given to newer mediums such as immaterial, conceptual, interventionist and performative practices: new media; and collaborative and cross-disciplinary work. Students develop critical thinking skills about context, space and location. Increasingly sophisticated and ambitious studio practice is expected. The class is conducted through a combination of lectures, group project assignments, and studio practice. This course is required to be taught in Sharjah Art Gallery.

ARTV 3316 - Global Art History: Modernism to Contemporary Politics (3 cr.)

Prerequisites
ARTV 2214 or ARTV 2113

Description

This course aims to explore Visual Art Practices of the Modern and the Contemporary Period. We are going to start our exploration with the movement of Impressionism in France and finish in the ever-changing global World Wide Web. We will analyze artistic methodologies, technologies and their impact upon artistic creation. The course focuses on exposing the dynamic interplay between visual research, politics, intellectual theories, and societal changes. The range of media that is covered is very wide: photography, performance, conceptual proposals, installation art, film, video, digital practices and appropriations from mass culture alongside painting and sculpture. The course is based on practical assignments, field trips and lectures.

ARTV 4269 - Senior Project (A) (3 cr.)

Prerequisites

Senior standing.

Description

The first in the advanced Senior Project A and B sequence that is required for the Visual Art major. Course is devoted to the processes of research, experimentation, reflection and critical feedback necessary for successful completion of ARTV 4270. Preparation for subsequent professional life will also be emphasized, including writing and portfolio assignments and studio visits with practicing artists.

When Offered

Offered in fall.

ARTV 4270 - Senior Project (B) (3 cr.)

Prerequisites

ARTV 4269

Description

A continuation of ARTV 4269, students develop and exhibit a final body of work that expresses a thorough conceptual and technical process. The course culminates in a group exhibition of senior projects, typically to be installed in the Sharjah Art Gallery. This course is the equivalent of a "thesis" or a "capstone" class.

When Offered

Offered in spring.

ARTV 4302 - Independent Study (1-3 cr.)

Description

Professional internship, independent research, or studio work conducted by either individual students or small groups of students with the aid of faculty members. A detailed plan and schedule of the work must be approved by the Art Program Director prior to registration. No independent study can substitute for course regularly offered in the program.

When Offered
Offered in fall and spring.
Repeatable
May be repeated up to three times if the content changes.
Notes
Open to seniors only, with a minimum B average.

ARTV 5110 - Contemporary issues in Arab Art (3 cr.)

Description
An examination of contemporary issues in Arab art within its historical-political geographic terrain and its contemporary diaspora communities. We will explore various kinds of visual and built environments including art works, exhibitions, literature and popular culture. Students will develop visual and analytic skills needed to examine contemporary issues in Arab art in relation to the local, regional and global markets and discourse.