Catalog Extract
2012-2013 Edition

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Schools and Departments

The American University in Cairo

Graduate School of Education

Master of Arts

International & Comparative Education (M.A.) with concentrations in Teaching and Learning, Educational Leadership, and International Education Policy and Planning

Distinguished Professor: S. Peterson (Dean of Graduate School of Education)
Associate Professor: T. Purinton (Associate Dean)
Professor of Practice: M. Zaalouk (Director of the Middle East Institute for Higher Education (MEIHE))
Associate Professors of Practice: H. El-Deghaidy, R. Hozayin, N. Megahed, P. Norman, S. Rissmann-Joyce
Visiting Professor of Practice: A. Winter

Admission

In addition to AUC’s general admission requirements for all MA programs, it is recommended that applicants for the Master of Arts degree in International & Comparative Education have school-based teaching or educational leadership experience prior to admission into the program, or that they will acquire this experience concurrently with enrollment in 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.

Master of Arts in International & Comparative Education

A total of 33 credit hours (11 hours) are required for MA students. Students may pass content examinations in human development, learning theories, teaching methods and instructional practice in lieu of two of the required content core courses. Students who pass one or both of the examinations referred to above will be able to complete the MA requirements by taking a total of 27 or 33 credit hours (9 or 10 courses).

Courses

The following courses represent the Content Core Subjects required of all students. Two of these may be satisfied if the MA student passes a content-based exam.

- EDUC 511 - Foundations of Educational Research (3 cr.)
- EDUC 521 - Social Foundations of Education (3 cr.)
• EDUC 531 - Introduction to International & Comparative Education (3 cr.)
• EDUC 541 - Human Development & Learning Theories for Classroom Teachers (3 cr.)
  A candidate may be exempted from this course if they pass a content-based examination.
• EDUC 551 - Foundations of Instructional Practice for Classroom Teachers (3 cr.)
  A candidate may be exempted from this course if they pass a content-based examination.
• EDUC 590 - MA Capstone (Thesis or Equivalent; Practicum for IEPP) (3 semester hours)

Concentrations

Each student will select one of the following concentrations: Teaching and Learning, Educational Leadership, or International Education Policy & Planning. Students must take a minimum of three courses from their concentrations.

1. Teaching and Learning

Students in the Teaching & Learning Track are required to complete the following courses, or substitute up to two courses from the other concentrations:

• EDUC 552 - The Potential of Emerging Technologies as Transformative Learning Tools (3 cr.)
• EDUC 554 - Reading and Writing in the Content Area Classroom (3 cr.)
• EDUC 556 - Action Research (3 cr.)
• EDUC 557 - Reaching Diverse and Underserved Learners (3 cr.)
• EDUC 595 - Supervised Fieldwork (3 cr.)

2. Educational Leadership

Students in the Educational Leadership Track are required to complete the following courses, or select up to two courses from the other concentrations:

• EDUC 542 - Transformational Leadership (3 cr.)
• EDUC 544 - School Governance and Management (3 cr.)
• EDUC 546 - Organizational Theory and Educational Institutions (3 cr.)
• EDUC 573 - Research-based Instructional Leadership (3 cr.)
• EDUC 595 - Supervised Fieldwork (3 cr.)


Students in the International Education Policy & Planning Track are required to complete the following courses or select up to two courses from the other concentrations:

• EDUC 532 - Globalization, Development, and Educational Reform in the Arab World (3 cr.)
• EDUC 533 - Comparative Gender, Adolescent, Youth, and Human Development Policy (3 cr.)
• EDUC 534 - Strategic Educational Planning and Development (3 cr.)
• EDUC 536 - Human Rights-based Education (3 cr.)
• EDUC 575 - Educational Policy Analysis (3 cr.)
• EDUC 595 - Supervised Fieldwork (3 cr.)
School of Business

Department of Accounting

Professors: S. Farag, M. Hegazy, K. Dahawy (Chair)
Associate Professor: M. ElBannan
Assistant Professors: K. Samaha, A. Abdel Meguid

Bachelor of Accounting

Accounting (B.A.C.)

The world economy has entered an era of global interaction on a scale rarely experienced before. Financial markets in various parts of the world operate twenty-four hours a day as capital seeks involvement in this global economy. Countries that are still mostly agrarian are forming active stock markets. Trade agreements in the European community and North America, the breakup of the former Soviet Union, the emergence of China as an economic power and the commercial development of many countries in Southeast Asia and South America are just a few examples of the forces at work.

After a long period of indifference, there is currently a heightened interest in international accounting and auditing standards. Within developing countries, business enterprises must develop internal management controls that allow them to compete in a world market. The rapid, and sometimes startling, social, political, technological, and economic changes that are taking place in the world economy have led to increasing recognition of the key role that accounting and accountants in all countries play in the process of economic development. This recognition, in turn, emphasizes the need for quality accounting education which this major in accounting provides.

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

1. Students who have been admitted to the Bachelor of Accounting program as incoming freshmen must complete the three courses listed below before taking any additional courses in the major.
2. Students who seek to be admitted to the Bachelor of Accounting program through the declaration process should apply in their third semester. Students seeking to declare the BAC program must have completed not less than 27 credit hours of study including the three courses listed below. Based on the available space a limited number of students who have successfully completed these courses and who meet the GPA requirements as determined by the department will be accepted in the major.
   1. ACCT 201 Financial Accounting, 3 cr.
   2. ECON 201 Introduction to Macroeconomics, 3 cr.
      OR
      ECON 202 Introduction to Microeconomics, 3 cr.
   3. MACT 112 Statistical Reasoning, 3 cr.

Students who seek the Bachelor of Accounting degree (BAA) are not permitted to have a major or minor in Business Administration. Students must complete a minimum of 127 credit hours for the Bachelor of Accounting degree.

Core Curriculum (34-46 credits)

Collateral Requirements
All students seeking a Bachelor of Accounting degree are required to complete the following collateral requirements (15 credits):

- ECON 201 - Introduction to Macroeconomics (3 cr.)
- ECON 202 - Introduction to Microeconomics (3 cr.)
- ECON 216 - Mathematics for Economists I (3 cr.)
- ECON 303 - Money and Banking (3 cr.)
- MACT 112 - Statistical Reasoning (3 cr.)

Management Requirements (9 credits)

- MGMT 300 - Business Environment and Ethics (3 cr.)
- MGMT 307 - Management Fundamentals (3 cr.)
- MGMT 311 - Business Law (Commercial & Fiscal) (3 cr.)

Finance Requirements (12 credits)

- FINC 303 - Business Finance I (3 cr.)
- FINC 404 - Investment Analysis (3 cr.)
- FINC 405 - Applied Banking (3 cr.)
- FINC 414 - Corporate Finance (3 cr.)

Management of Information Systems Requirements (9 credits)

- MOIS 305 - Introduction to Information Systems/Technology (3 cr.)
- MOIS 406 - Management Information Systems and Database Management (3 cr.)
- MOIS 444 - Accounting Information Systems (3 cr.)

Accounting Requirements (33 credits)

- ACCT 201 - Financial Accounting (3 cr.)
- ACCT 202 - Managerial Accounting (3 cr.)
- ACCT 301 - Intermediate Accounting I (3 cr.)
- ACCT 302 - Intermediate Accounting II (3 cr.)
- ACCT 303 - Advanced Accounting (3 cr.)
- ACCT 304 - Cost Accounting (3 cr.)
- ACCT 305 - Auditing (3 cr.)
- ACCT 306 - Principles of Taxation (3 cr.)
- ACCT 401 - Contemporary Issues in Auditing (3 cr.)
- ACCT 402 - Special Topics in Tax Accounting (3 cr.)
- ACCT 403 - Contemporary Issues in Accounting (3 cr.)

Electives (3-15 credits)

Minors
Accounting Minor

A limited number of students are accepted into the accounting minor. Students who have completed ACCT 201 and ACCT 202 and who meet requirements including the GPA as determined by the department will be permitted to declare a minor and should plan their minor with their academic advisor with the approval of the department.

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

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 201 - Financial Accounting (3 cr.)
- ACCT 202 - Managerial Accounting (3 cr.)

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

- ACCT 301 - Intermediate Accounting I (3 cr.)
- ACCT 302 - Intermediate Accounting II (3 cr.)
- ACCT 303 - Advanced Accounting (3 cr.)
- ACCT 304 - Cost Accounting (3 cr.)
- ACCT 305 - Auditing (3 cr.)
- ACCT 306 - Principles of Taxation (3 cr.)

Department of Economics

Department of Economics
School of Business

*Professors Emeritus:* G. Amin, W. Mikhail

*Professors:* A. Beshai (Director of Graduate Studies), T Selim

*Associate Professors:* A. Kamaly (Chair), H. El-Ramly, N. Rizk, (Associate Dean for Graduate Studies and Research), M. Said, J. Salevurakis, A. Seghir (Associate Dean for Undergraduate Studies and Administration)

*Visiting Associate Professor:* A. El-Haddad

*Assistant Professors:* M. Abdel Baki, M. Bouaddi, D. El Edel (Associate Chair), M. Al-Ississ, M. El-Komi

*Visiting Assistant Professor:* A. El-Shennawy

*Assistant Professor (ABD):* S. Atallah

*Visiting Assistant Professor (ABD):* N. Abdel Razek

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 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 content of the curriculum for the B.A. degree in Economics offers a comprehensive coverage of subjects. The program is designed to prepare students as i) citizens with future influence by virtue of a university degree; ii) future holders of jobs which require training in economics; and iii) future postgraduate students of economics. For the first group, the curriculum offers training in rational thought and the connections between theory and main features of policy. For the second group, the curriculum offers the standard tools of economic analysis and an appreciation of the interdependence of world economies. For the third group, the curriculum, by virtue of its content of research methods and statistics, and econometrics offers entry into M.A. and Ph.D. programs. A holder of the B.A. in Economics from AUC can participate in advanced training on equal basis with undergraduates from major American and British Universities.

A student who intends to major in Economics must satisfy the following requirements:

- Must have completed a minimum of 27 credit hours of study including ECON 201, ECON 202 and ECON 216.
- Earn an average of “B” or higher in Econ 201 and Econ 202 with a minimum “B-” in each course
- Earn a minimum of “B” in ECON 216*
- Meet the GPA requirements as determined by the department each semester

*Alternatively, earn an average of “B” or higher in MACT 131 and MACT 132 with a minimum “B-” in each course.

Notwithstanding these requirements, a subcommittee of the department might in exceptional cases and on a case-by-case basis decide on admission of students after examining their overall record.

A total of 120 credits is required for the bachelor’s degree in economics:

**Core Curriculum (34-46 credits)**

**Concentration Requirements (54 credits)**

- ECON 201 - Introduction to Macroeconomics (3 cr.)
- ECON 202 - Introduction to Microeconomics (3 cr.)
- ECON 216 - Mathematics for Economists I (3 cr.)
- ECON 218 - Statistics for Economists (3 cr.)
- ECON 301 - Intermediate Macroeconomic Theory (3 cr.)
- ECON 302 - Intermediate Microeconomic Theory (3 cr.)
- ECON 316 - Mathematics for Economists II (3 cr.)
- ECON 318 - Introduction to Econometrics (3 cr.)
- ECON 403 - International Trade (3 cr.)
- MACT 112 - Statistical Reasoning (3 cr.)

Plus at least two of the following:

- ECON 312 - Economic Development (3 cr.)
- ECON 405 - History of Economic Thought (3 cr.)
- ECON 414 - Economics of Egypt (3 cr.)

Plus Six other courses in economics including POLS 351

Notes:

Students who plan to pursue graduate studies in economics are strongly advised to take ECON 416 and ECON 418, since these are prerequisites for the master's program.

Collateral Requirements (6 credits)

- ACCT 201 - Financial Accounting (3 cr.)
- FINC 303 - Business Finance I (3 cr.)

Electives (14-26 credits)

Depending on the number of credit hours needed to complete the 120 stated above.

Minors

Economics Minor

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

Requirements (15 credits):

- ECON 201 - Introduction to Macroeconomics (3 cr.)
- ECON 202 - Introduction to Microeconomics (3 cr.)

Additional Requirements

- Three other economics courses, with a minimum of two 300-level courses or above.
Courses not included

- ECON 216 - Mathematics for Economists I (3 cr.)
- ECON 218 - Statistics for Economists (3 cr.)
- ECON 316 - Mathematics for Economists II (3 cr.)
- ECON 318 - Introduction to Econometrics (3 cr.)

With the approval of the instructor and the unit head, students may substitute other economics courses for credit towards the minor.

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 to the M.A. in Economics in International Development must obtain an acceptable score on the Graduate Record Exam (GRE) within the first semester of enrollment in the program. Students are strongly urged to apply for the GRE exam immediately upon receipt of their admission letter in order to allow enough time for the reservation of an exam slot and the receipt of results by AUC.

Courses

A minimum of 36 credit hours is required. All students must:

1. Take seven core courses

Five from economics and two from allied disciplines as indicated below:

- ECON 500 - The Economic Setting for Development (3 cr.)
- ECON 505 - Advanced International Trade (3 cr.)
- ECON 512 - Economic Growth & Development (3 cr.)
- ECON 519 - Project Evaluation (3 cr.)
- ECON 526 - Development Research Workshop (3 cr.)
- POLS 502 - Scope and Method of Developmental Analysis (3 cr.)
Choose one course from the following:

- SOC/ANTH 530 - Theorizing the State (3 cr.)
- SOC/ANTH 535 - World Systems and Development (3 cr.)
- SOC/ANTH 560 - Population Dynamics (3 cr.)

2. Choose four electives

One from each of the following groups of courses as indicated below:

**Group 1**

- ECON 506 - Advanced Topics in Economics (3 cr.)
- ECON 508 - Labor Economics (3 cr.)
- ECON 511 - Economic Development in Middle East Countries (3 cr.)
- ECON 522 - Economic Strategies for Sustainable Development (3 cr.)
- ECON 514 - Ethical Issues in Development (3 cr.)

**Group 2**

- LAW 512 - Human Rights and the United Nations (3 cr.)
- POLS 562 - International Development Organizations (3 cr.)

**Group 3**

- SOC/ANTH 515 - Kin, Friends and Neighbors (3 cr.)
- SOC/ANTH 520 - Sex Roles, Gender and Society (3 cr.)
- SOC/ANTH 525 - Religion, Ideology and Society (3 cr.)
- SOC/ANTH 540 - Revisiting the Rural (3 cr.)
- SOC/ANTH 545 - Cities: Structure and Dynamics (3 cr.)
- SOC/ANTH 555 - Comparative Health and Healing Systems (3 cr.)
- SOC/ANTH 570 - Environment and Society (3 cr.)

**Group 4**

- MGMT 501 - Business Communication (3 cr.)
- MGMT 502 - Managing in a Dynamic Environment (3 cr.)
- MGMT 504 - Human Capital Strategy (3 cr.)

3. Undertake a practicum with an approved host organization

- ECON 590 - Practicum (3 cr.)

Practicum
The program does not require a comprehensive examination or a thesis. Instead, students are required to undertake a 200-hour practicum over a 4-6 week period with a development-related institution, preferably after completing six core courses. The Department will assist students in identifying appropriate hosts for the practicum and in placing them. The practicum is an essential requirement of the program, giving it a distinct feature that is expected to add a pragmatic exposure to students in a serious development work setting. The Department and host institutions will be jointly responsible for supervising and evaluating student practicum work.

A research paper is required as part of the practicum assignment. The paper will address a topic closely related to the student’s practicum work and is expected to follow sound research methods, drawing on the support that will be provided in ECON 526 Development Research Workshop.

While the Department is responsible for arranging practicum placements, some flexibility may be exercised in setting the timing of the practicum in view of the need to take due note of host institutions’ work schedules and select meaningful assignments for students. In no case, however, will students be eligible for the practicum until they complete at least three core courses, and undertake ECON 526 before or concurrently with the practicum assignment.

**Economics with a Thesis Option or with concentrations in Growth and Sustainable Development, Competitive Strategy and Valuation, and International 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 416 and 418 with a grade of B or better; i.e. a student must complete ECON 416 and 418 before enrolling in any 500 level course.

Applicants to the M.A. in Economics must obtain an acceptable score on the Graduate Record Exam (GRE) within the first semester of enrollment in the program. Students are strongly urged to apply for the GRE exam immediately upon receipt of their admission letter in order to allow enough time for the reservation of an exam slot and the receipt of results by AUC.

Students applying for Master in Economics can choose either Thesis Track or Non-Thesis Track option. Total credit hours for completion of the Master Degree for either track is 30 credit hours.

**Requirements for Thesis Track**

**Courses**

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

- ECON 501 - Advanced Macroeconomic Theory (3 cr.)
- ECON 502 - Advanced Microeconomic Theory (3 cr.)
- ECON 518 - Econometrics (3 cr.)
- ECON 525 - Research Workshop (3 cr.)

**Four Additional Courses (12 credit hours)**
A maximum of six hours of 500-level courses or 400 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 501 - Advanced Macroeconomic Theory (3 cr.)
- ECON 502 - Advanced Microeconomic Theory (3 cr.)
- ECON 518 - Econometrics (3 cr.)
  and either:
- ECON 525 - Research Workshop (3 cr.)
  or
- ECON 526 - Development Research Workshop (3 cr.)

Four Additional Courses (12 credit hours)

A maximum of six hours of 500-level courses or 400 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.

Concentration Fields

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

The MA in Economics offers three concentration fields:

1. Growth and Sustainable Development (6 credit hours)

   - ECON 512 - Economic Growth & Development (3 cr.)
   - ECON 522 - Economic Strategies for Sustainable Development (3 cr.)

2. Competitive Strategy and Valuation (6 credit hours)

   - ECON 519 - Project Evaluation (3 cr.)
   - ECON 520 - Competitive Strategy and Game Theory (3 cr.)

3. International Economics

   - ECON 505 - Advanced International Trade (3 cr.)
• ECON 517 - International Finance (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 inter-disciplinary 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.

Applicants to the M.A. in Economics in International Development must obtain an acceptable score on the Graduate Record Exam (GRE) within the first semester of enrollment in the program. Students are strongly urged to apply for the GRE exam immediately upon receipt of their admission letter in order to allow enough time for the reservation of an exam slot and the receipt of the results by AUC.

Courses

A minimum of 18 credit hours, consisting of six core courses that must include two non-economics courses, as follows:

• ECON 500 - The Economic Setting for Development (3 cr.)
• ECON 512 - Economic Growth & Development (3 cr.)
• ECON 526 - Development Research Workshop (3 cr.)

Either

• ECON 505 - Advanced International Trade (3 cr.)
  Or
• ECON 519 - Project Evaluation (3 cr.)
• POLS 502 - Scope and Method of Developmental Analysis (3 cr.)

One SOC/ANTH course from the following:

• SOC/ANTH 530 - Theorizing the State (3 cr.)
• SOC/ANTH 535 - World Systems and Development (3 cr.)
• SOC/ANTH 560 - Population Dynamics (3 cr.)

Note
Students awarded the Diploma may apply for admission to the M.A. in Economics International Development.

**Department of Management**

**Department of Management**  
**School of Business**

*Professors:* S. Akabawy, M. Badran (Chair), F. El Hitami (Emeritus), H. El Sherif (Emeritus), M. El Shinnawy, M. Hassanein, T. Hatem, S. Kamel (Dean), S. Youssef  
*Associate Professors:* A. Awni, A. Badr El Din, O. Farooq, I. Hegazy, D. Rateb, P. Rostan, A. Tolba, E. Tooma, I. Azzam  
*Professor of Practice:* K. O’Connell (Willard W. Brown Chair of International Business Leadership)  
*Participating Faculty:* A. Kais

The Department of Management offers two undergraduate degree programs:

- Bachelor of Business Administration (BBA)  
- 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).

**Vision**  
The vision of the Department of Management is to be a leading business learning institution in the region offering high quality academic programs comparable to those at the best universities worldwide.

**Mission Statement**  
The mission of the Department of Management is to develop business leaders who are dedicated to the betterment of the society by providing a high quality business education to top caliber students from all segments of the Egyptian society as well as from other countries while focusing on continuous improvement and commitment to excellence in learning, intellectual contributions and services.

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 share 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

Business Administration, with concentrations in Marketing, Finance, Management of Information Technology and General Business (B.B.A.)

Bachelor of Business Administration (B.B.A.)

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.

The number of students accepted in the Bachelor of Business Administration program is limited and is filled through the declaration of major process.

Students who seek to be admitted to the Bachelor of Business Administration program should apply in their third semester. Students seeking to declare the BBA program must have completed not less than 27 credit hours of study including the two courses listed below. Based on the available space a limited number of students who have successfully completed these courses and who meet the GPA requirements as determined by the department will be accepted in the major.

1. ACCT 201 Financial Accounting, 3 cr.
2. ECON 201 Introduction to Macroeconomics, 3 cr.
   OR
   ECON 202 Introduction to Microeconomics, 3 cr.

Students who seek the Bachelor of Business Administration degree are not permitted to have a major or a minor in accounting.

Students must complete a minimum of 127 credit hours for the Bachelor of Business Administration degree with no more than 63 hours of courses in the business area.

Core Curriculum (34-46 credits)

Collateral Requirements
All students seeking a Bachelor of Business Administration degree must complete the following collateral requirements (12 credits)

- ECON 201 - Introduction to Macroeconomics (3 cr.)
- ECON 202 - Introduction to Microeconomics (3 cr.)
- ECON 216 - Mathematics for Economists I (3 cr.)
- MACT 210 - Statistics for Business (3 cr.)

Business Core Requirements (33 credits)

- ACCT 201 - Financial Accounting (3 cr.)
- ACCT 202 - Managerial Accounting (3 cr.)
- FINC 303 - Business Finance I (3 cr.)
- INTB 301 - Introduction to International Business (3 cr.)
- MGMT 300 - Business Environment and Ethics (3 cr.)
- MGMT 307 - Management Fundamentals (3 cr.)
- MGMT 311 - Business Law (Commercial & Fiscal) (3 cr.)
- MGMT 480 - Business Planning and Strategy (3 cr.)
- MKTG 302 - Principles of Marketing (3 cr.)
- MOIS 305 - Introduction to Information Systems/Technology (3 cr.)
- OPMG 310 - Operations for Competitive Advantage (3 cr.)

Concentration Requirements (21 credits)

Students seeking a BBA degree must select only one of the following four options:

1. BBA with a marketing concentration
2. BBA with a finance concentration
3. BBA with a management of information technology concentration
4. BBA with a general business concentration

1. Marketing Concentration (21 credits)

Students seeking a concentration in marketing are required to take the following courses after they complete the business core:

- MKTG 405 - Marketing Research (3 cr.)
- MKTG 410 - Consumer-Buyer Behavior (3 cr.)
- MKTG 480 - Marketing Strategy (3 cr.)
- MKTG 408 - Marketing Communications Management (3 cr.)

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

- MKTG 411 - Professional Selling (3 cr.)
- MKTG 412 - International Marketing (3 cr.)
- MKTG 414 - Services Marketing (3 cr.)
- MKTG 416 - E-Marketing (3 cr.)
- MKTG 418 - Principles of Public Relations (3 cr.)
- MKTG 420 - Advanced Marketing Research (3 cr.)
- MKTG 470 - Special topics in Marketing (3 cr.)

2. Finance Concentration (21 credits)

Students seeking a concentration in finance are required to take the following courses:

- FINC 404 - Investment Analysis (3 cr.)
- FINC 405 - Applied Banking (3 cr.)
- FINC 414 - Corporate Finance (3 cr.)

In addition, choose four of the following finance elective courses:

- ECON 303 - Money and Banking (3 cr.)
- FINC 408 - International Finance (3 cr.)
- FINC 410 - Capital Markets (3 cr.)
- FINC 412 - Options and Derivatives (3 cr.)
- FINC 415 - Portfolio Theory and its Applications (3 cr.)
- FINC 470 - Special Topics in Financial Management (3 cr.)

3. Management of Information Technology Concentration (21 credits)

An erratum to the MOIS concentration

Students seeking a concentration in Management of Information Technology (MOIS) are required to take the following courses after they complete the business core:

- MOIS 406 - Management Information Systems and Database Management (3 cr.)
- MOIS 435 - Introduction to Electronic Business (3 cr.)
- MOIS 466 - Human Computer Interaction (HCI) (3 cr.)
- MOIS 499 - Internship Project (3 cr.)

Two courses to be selected from the MOIS area:

- MOIS 423 - Geographic Information Systems (GIS) (3 cr.)
- MOIS 430 - Business Information Systems Analysis and Development (3 cr.)
- MOIS 432 - Information & Decision Support Systems (3 cr.)
- MOIS 433 - Marketing Information Systems (3 cr.)
- MOIS 434 - Financial Information Systems (3 cr.)
- MOIS 444 - Accounting Information Systems (3 cr.)
- MOIS 450 - Strategic Information Systems (3 cr.)
- MOIS 470 - Special Topics in Management of Information Systems (3 cr.)
4. General Business (21 credits)

After completing the business core, students seeking a concentration in general business are required to take seven courses from at least five different functional areas, not to exceed two courses from any single area, at the 300 and 400 levels.

Areas for the General Business Concentration are accounting, finance, international business, management, marketing, management of information technology, and operations management.

Electives (15-27 credits)

Management of Information and Communication Technology (B.B.A.)

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.

The number of students accepted in the MICT program is limited. This is done through the declaration of major process for science students only. Students seeking to declare the MICT program must have completed the three courses listed below. Based on the available space a limited number of students who have successfully completed these courses and who meet the GPA requirements as determined by the department will be accepted in the major.

1. ACCT 201 - Financial Accounting
2. CSCE 106 - Fundamentals of Computer Science
3. MACT 112 - Statistical Reasoning or MACT 131 - Calculus I

Students who seek the MICT degree are not permitted to have a major or a minor in accounting.

Students must complete a minimum of 127 credit hours for the MICT degree with no more than 63 hours of courses in the business area.

Course Requirements

(Total Credit = 127 with no more than 63 hours of courses in the business area)
<table>
<thead>
<tr>
<th>Course No.</th>
<th>Cr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>RHET 101 * (P)</td>
<td>3</td>
</tr>
<tr>
<td>RHET 102 * (P)</td>
<td>3</td>
</tr>
<tr>
<td>RHET 201 * (P)</td>
<td>3</td>
</tr>
<tr>
<td>SCI 120 (P)</td>
<td>3</td>
</tr>
<tr>
<td>PHIL 220 (P)</td>
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<tr>
<td>LALT 101 (P)</td>
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<tr>
<td>Natural Sc + Lab (P)</td>
<td>4</td>
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<tr>
<td>Humanity (P/S)</td>
<td>3</td>
</tr>
<tr>
<td>Social Sc. (P/S)</td>
<td>3</td>
</tr>
<tr>
<td>Arab World Studies (S) Θ</td>
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<tr>
<td>Arab World Studies (S) Θ</td>
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<tr>
<td>International World Studies (S)</td>
<td>3</td>
</tr>
<tr>
<td>Core Capstone Course (C)</td>
<td>3</td>
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<td>Core Capstone Course (C)</td>
<td>3</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>40</strong></td>
</tr>
</tbody>
</table>

**General Electives / Minor**

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Cr.</th>
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</thead>
<tbody>
<tr>
<td>ALING √</td>
<td>3</td>
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<tr>
<td>ALING √</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>9</strong></td>
</tr>
</tbody>
</table>

(P) Primary level courses taken during first 3 Semesters.
(S) Secondary level courses taken by students' 6th Semester.
(C) Capstone level courses taken during students' last 2 Semesters.
* Students exempted from RHET 101 or 102 or 201 must take any RHET 300 or 400 course.
√ Non-Thanaweya Amma arabic language holders may be required to take 0-6 credits depending on Arabic placement test score.
Thanaweya Amma arabic language students may not take Arabic Literature in Translation

Before declaration:

- Students must have completed 27 cr. hrs.
- the following courses must be taken: ACCT 201, CSCE 106 and MACT 112

Business Core Requirements

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Cr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>FINC 303</td>
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</tr>
<tr>
<td>MGMT 300</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 307</td>
<td>3</td>
</tr>
<tr>
<td>MGMT 311</td>
<td>3</td>
</tr>
<tr>
<td>MKTG 302</td>
<td>3</td>
</tr>
<tr>
<td>MOIS 305</td>
<td>3</td>
</tr>
<tr>
<td>OPMG 310</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>21</strong></td>
</tr>
</tbody>
</table>

Collateral Requirements

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Cr.</th>
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</thead>
<tbody>
<tr>
<td>ACCT 201</td>
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</tr>
<tr>
<td>ACCT 202</td>
<td>3</td>
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<tr>
<td>ECON 201</td>
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<tr>
<td>ECON 202</td>
<td></td>
</tr>
<tr>
<td>ECON 216 Ψ</td>
<td>3</td>
</tr>
<tr>
<td>MACT 112 ΨΨ</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>18</strong></td>
</tr>
</tbody>
</table>

Ψ ECON 216 can be replaced by MACT 131/132 (for BADM & ACCT majors only)
ΨΨ MACT 100 is a pre-requisite for MACT 112 and ECON 216.
It can be taken with MACT 112 (same semester) but must be taken before ECON 216. It is considered as an elective course.

### MOIT Requirements

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Cr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOIS 406</td>
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</tr>
<tr>
<td>MOIS 435</td>
<td>3</td>
</tr>
<tr>
<td>MOIS 466</td>
<td>3</td>
</tr>
<tr>
<td>MOIS 499</td>
<td>3</td>
</tr>
</tbody>
</table>

One course to be selected from the MOIT area:

- MOIS 430
- MOIS 477

Two courses to be selected from the MOIT area:

- MOIS 423
- MOIS 432
- MOIS 433
- MOIS 434
- MOIS 444
- MOIS 450
- MOIS 470

Total 21

### Computer Science Requirements

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Cr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSCE 106</td>
<td>3</td>
</tr>
<tr>
<td>CSCE 110</td>
<td>3</td>
</tr>
<tr>
<td>CSCE 210</td>
<td>3</td>
</tr>
</tbody>
</table>
Two courses to be selected from the CSCE area:

CSCE 315  3
CSCE 316  3
CSCE 456  3
CSCE 485  3
Total  21

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 who have completed the minor requirements and who meet the GPA requirement should apply for the minor in their senior year. Students who minor in business administration are not permitted to have a minor in accounting.

Requirements

The minor requires completion of six courses (18 credit hours) as follows:

1.
   • ACCT 201 - Financial Accounting (3 cr.)

2.
   • MGMT 307 - Management Fundamentals (3 cr.)

3.
   • ECON 201 - Introduction to Macroeconomics (3 cr.)
   or
   • ECON 202 - Introduction to Microeconomics (3 cr.)
   or
   • ENGR 345 - Engineering Economy (3 cr.)
4.  
   - MKTG 302 - Principles of Marketing (3 cr.)

5.  
   - FINC 303 - Business Finance I (3 cr.)

6.  

In addition, choose one additional course from the following business areas (ACCT, FINC, INTB, MGMT, MKTG, MOIS, OPMG).

**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. Students who have completed the minor requirements and who meet the GPA requirement should apply for the minor in their senior year. Students who minor in entrepreneurship are not permitted to have a minor in business administration or accounting.

**Requirements**

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

- ENTR 203 - Introduction to Entrepreneurship and Small Business Management (3 cr.)
- ENTR 303 - Principles of Entrepreneurial Finance (3 cr.)
- ENTR 413 - Entrepreneurship and Innovation (3 cr.)
- ENTR 417 - Entrepreneurship Lab: Developing and Launching a New Venture (3 cr.)
- MKTG 302 - Principles of Marketing (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 taking a major in disciplines outside the departments of Management and Computer Science.

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.

Students who minor in information systems are not permitted to have a minor in business administration or accounting.

Course Requirements

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

1. 
   - CSCE 106 - Fundamentals of Computer Science (3 cr.)

2. 
   - CSCE 201 - Information Technology (3 cr.)
     or
   - MOIS 305 - Introduction to Information Systems/Technology (3 cr.)

3. 
   - MOIS 406 - Management Information Systems and Database Management (3 cr.)
     or
   - MOIS 430 - Business Information Systems Analysis and Development (3 cr.)

4. 
   - MOIS 432 - Information & Decision Support Systems (3 cr.)

5. 
   - CSCE 456 - Design of Web-based Systems (3 cr.)
     or
   - MOIS 435 - Introduction to Electronic Business (3 cr.)

Master of Business Administration (MBA)

Master of Business Administration (MBA)

The MBA is a professional degree designed to prepare students who have completed undergraduate work in any academic discipline and intend to pursue a management career. The curriculum emphasizes the principles underlying business operations as well as advanced technical knowledge in relevant specializations. It provides tools for analysis and helps develop a managerial perspective. Advanced specialized and elective courses provide the necessary skills in a functional area of business. The MBA program is accredited by the Association to Advance Collegiate Schools of Business (AACSB).

Admission

All applicants must satisfy the university's graduate admission requirements and obtain an acceptable score on the Graduate Management Admission Test (GMAT). In addition, applicants should have three or more years of relevant professional experience. To obtain the MBA degree, a minimum of 33 semester credit hours and a maximum of 48 credit hours are required. The exact number of credits will be determined according to the educational background of each candidate.

MBA Foundation Courses (3-27 credits)

The MBA Foundation courses are directed at providing the student with a basic background in the various functional areas of Business. Between one and nine courses are required for the completion of foundation courses. These courses are usually chosen from the following list:

- ACCT 501 - Financial Reporting and Analysis (3 cr.)
- FINC 527 - Managerial Economics (3 cr.)
- FINC 540 - Financial Management (3 cr.)
- MGMT 501 - Business Communication (3 cr.)
- MGMT 502 - Managing in a Dynamic Environment (3 cr.)
- MKTG 520 - Marketing Management (3 cr.)
- MOIS 508 - Information Systems in Organizations: Management in the Information Age (3 cr.)
- OPMG 507 - Introduction to Business Statistics (3 cr.)
- OPMG 520 - Operations Management for Competitive Advantage (3 cr.)

MBA Electives and Concentration (18-27 credits)

Advanced coursework for the MBA constitutes a diversified program aiming at providing the student with:

a. General background in the concepts, processes, and institutions of finance, marketing, personnel, and operations management
b. Decision-making tools and techniques such as accounting, quantitative methods, and management information systems
c. Organizational theory, economic analysis, and business policy and strategy
Students must take a minimum of 9-12 credit hours that covers at least three of the following business areas:

- Finance
- International Business
- Leadership and Human Resources Management
- Management of Information Technology
- Marketing
- Operations Management
- Construction Industry

Students may concentrate in one of these areas (except Accounting) by taking at least three courses in that area (9 credit hours).

Accounting

- ACCT 502 - Managerial Accounting for Decision Making (3 cr.)

Finance

- FINC 541 - Investments (3 cr.)
- FINC 542 - International Financial Markets (3 cr.)
- FINC 543 - Financial Institutions and Markets (3 cr.)
- FINC 544 - Corporate Financial Policy (3 cr.)
- FINC 545 - Private Equity and Venture Capital (3 cr.)
- FINC 546 - Financial Analysis, Planning and Valuation (3 cr.)
- FINC 567 - Selected Topics in Financial Management (3 cr.)
- FINC 575 - Independent Study in Financial Management (1-3 cr.)

International Business

- FINC 542 - International Financial Markets (3 cr.)
- MGMT 506 - Management of International Business Organizations (3 cr.)
- MGMT 507 - Global Business Strategy (3 cr.)
- MGMT 575 - Independent Study in Management (1-3 cr.)
- MKTG 524 - Global Marketing (3 cr.)

Leadership and Human Resources Management

- MGMT 503 - Leading Change in Organizations (3 cr.)
- MGMT 504 - Human Capital Strategy (3 cr.)
- MGMT 509 - Leadership (3 cr.)
- MGMT 510 - Entrepreneurship and Innovation (3 cr.)
- MGMT 511 - Strategic Management of Innovation (3 cr.)
- MGMT 570 - Selected Topics in Management (3 cr.)
- MGMT 575 - Independent Study in Management (1-3 cr.)

Management of Information Technology

- MOIS 517 - Technology and Innovation Management (3 cr.)
- MOIS 549 - Systems Analysis, Design, and Implementation (3 cr.)
- MOIS 550 - Information Technology (3 cr.)
- MOIS 551 - Electronic Business: Doing Business in the Digital Economy (3 cr.)
- MOIS 555 - Information Strategy (3 cr.)
- MOIS 570 - Advanced Topics (Next Generation Technologies) (3 cr.)
- MOIS 575 - Independent Research in Management of Information Systems/Technology (1-3 cr.)

Marketing

- MKTG 521 - Marketing Research Methods (3 cr.)
- MKTG 522 - Marketing Channel Strategies (3 cr.)
- MKTG 523 - Sales Force Management (3 cr.)
- MKTG 524 - Global Marketing (3 cr.)
- MKTG 526 - Integrated Marketing Communication (3 cr.)
- MKTG 530 - Strategic Marketing (3 cr.)
- MKTG 570 - Contemporary Topics in Marketing (3 cr.)
- MKTG 575 - Independent Study in Contemporary Topics in Marketing (1-3 cr.)

Operations Management

- OPMG 521 - Managing and Coordinating Supply Chains (3 cr.)
- OPMG 528 - Managing Dynamic Projects (3 cr.)
- OPMG 530 - Data Analysis (3 cr.)
- OPMG 531 - Stochastic Models in Managerial Decision Making (3 cr.)
- OPMG 532 - Operations Strategy (3 cr.)
- OPMG 533 - Business Dynamics (3 cr.)
- OPMG 570 - Selected Topics in Operations Management (3 cr.)
- OPMG 575 - Independent Study in Operations Management (1-3 cr.)

Construction Industry

Students may concentrate in the Construction Industry by taking at least four courses in that area (12 credit hours)

- CENG 530 - Contracts in Construction Industry (3 cr.)
  ** Mandatory for students who do not have a degree in Construction Engineering from AUC. Not open for AUC students with a degree in construction engineering.
- CENG 531 - Construction Management (3 cr.)
- CENG 532 - Planning, Scheduling and Control (3 cr.)
** Mandatory for students who do not have a degree in Construction Engineering from AUC. Not open for AUC students with a degree in construction engineering.

- CENG 533 - Management for Multi-National Environments (3 cr.)
  * Not open for AUC students in construction engineering students with a concentration in Construction Management.
- CENG 534 - Risk Management and Bidding Strategies (3 cr.)
  * Not open for AUC students in construction engineering students with a concentration in Construction Management.
- CENG 535 - Claims and Disputes in the Construction Industry (3 cr.)
- CENG 536 - Systems Analysis for Construction (3 cr.)
- CENG 537 - Resource Management for Construction Projects (3 cr.)
- CENG 538 - Procurement of Assets & Services for Construction Projects (3 cr.)
- CENG 567 - Construction Leadership and Management Skills (3 cr.)

**MBA Capstone Course (3 credits)**

Finally, a capstone course, the following is required for all MBA candidates:

- MGMT 508 - Strategic Management (3 cr.)

**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 48 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 48 credit hours to satisfy the requirements of the program at AUC. Classes are on a monthly basis and are held on long weekends, alternating between three days weekend in one month (Thursday to Saturday) and five days weekend in the other month (Thursday to Monday) and so on.

Program Details

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

Section 1: General Management Perspectives:

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 601 - Change Management and Global Transformation (1.75 cr.)
- EMBA 602 - Team-work & Communication (1.75 cr.)
- EMBA 603 - Data Analysis and Analytical Decision Modeling for Optimizing Decisions (2 cr.)

Section 2: Business Core:

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 604 - Managerial Economics (1.75 cr.)
- EMBA 605 - Strategic Accounting (1.75 cr.)
- EMBA 606 - Financial Management (2 cr.)
- EMBA 607 - Corporate Financial Management (1.75 cr.)
- EMBA 608 - Talent Management, Coaching & Mentoring (1.75 cr.)
- EMBA 609 - Managerial Decision Making and Operation Management (2 cr.)
- EMBA 610 - Global Marketing Management (International Live-in Module) (2.75 cr.)
- EMBA 611 - Competitive & Corporate Strategy (International Live-in Module) (2.75 cr.)
- EMBA 612 - E- Business & Managers’ Toolkit (2 cr.)

Section 3: Managerial Global Leadership:
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; 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 613 - Leadership & Management (1.75 cr.)
- EMBA 614 - Innovation and Creating the Best Practices of Tomorrow (1.75 cr.)
- EMBA 615 - Global Supply Chain Management and Operational Excellence (2 cr.)
- EMBA 616 - Negotiation & Conflict Management (1.75 cr.)
- EMBA 617 - Entrepreneurial Management (1.75 cr.)
- EMBA 618 - Doing Business With The East (International Live-in Module) (2.75 cr.)
- EMBA 619 - Doing Business With The East (International Live-in Module) (2.75 cr.)

Section 4: Advanced Business Core:

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 620 - Corporate Governance & Social Responsibility (2 cr.)
- EMBA 621 - Business & Legal Environment (1.75 cr.)
- EMBA 622 - Development & Rationale for Competitive Law (1.75 cr.)

Section 5: Integrating Project:

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 623 - Adapting to Global Environment - Integration Consultation Project (4 cr.)

**Master of Science**

**Finance, with concentrations in Corporate Finance, and Investments (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.

**Admission**

All applicants must satisfy the university’s graduate admission requirements and obtain an acceptable score on the Graduate Management Admission Test (GMAT) or Graduate Record Examinations (GRE). 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. No previous working experience is needed.

To obtain the MSc in Finance degree, students must complete 37 credit hours of which 31 credit hours of course work and six credit hours of thesis. Students with relevant background can waive up to two core courses but must complete a minimum of 31 credit hours (courses and thesis) to be awarded the degree. A research methodology course will be mandatory.

The program will consist of 11 for-credit courses plus a thesis designed to be completed in two full years.

**MSc Core Courses (18 credits)**

Students must complete six core courses before attempting to take any of the elective courses. Students with relevant background can waive up to two core courses. The core courses are:

- ACCT 501 - Financial Reporting and Analysis (3 cr.)
- ECON 418 - Econometric Methods (3 cr.)
- FINC 527 - Managerial Economics (3 cr.)
- FINC 540 - Financial Management (3 cr.)
- FINC 541 - Investments (3 cr.)
- OPMG 507 - Introduction to Business Statistics (3 cr.)

**MSc Electives (12 credits)**

The student must complete all core courses before attempting to take any of the elective courses. The student specializes in one of two concentration fields which are Investments and Corporate Finance. The student must take four courses (12 cr.) from his concentration field.
1- Investments Concentration

- FINC 512 - Options and Derivatives (3 cr.)
- FINC 513 - Fixed Income Securities (3 cr.)
- FINC 515 - Portfolio Management (3 cr.)
- FINC 516 - Real Estate Finance (3 cr.)
- FINC 542 - International Financial Markets (3 cr.)
- FINC 543 - Financial Institutions and Markets (3 cr.)
- FINC 570 - Selected Topics in Financial Management (3 cr.)
- FINC 575 - Independent Study in Financial Management (1-3 cr.)

2- Corporate Finance Concentration

- FINC 512 - Options and Derivatives (3 cr.)
- FINC 514 - Financial Risk Analysis (3 cr.)
- FINC 517 - Financial Modeling (3 cr.)
- FINC 542 - International Financial Markets (3 cr.)
- FINC 543 - Financial Institutions and Markets (3 cr.)
- FINC 544 - Corporate Financial Policy (3 cr.)
- FINC 570 - Selected Topics in Financial Management (3 cr.)
- FINC 575 - Independent Study in Financial Management (1-3 cr.)

Research Methodology (1 Credit hour)

A student must take a research methodology course before starting the thesis.

- FINC 590 - Research Methodology (1 cr.)

Thesis (six credit hours)

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 599 - Thesis (6 cr.)

School of Global Affairs and Public Policy

Department of Journalism & Mass Communication

Department of Journalism and Mass Communication
School of Global Affairs and Public Policy

Professor Emeritus: A. Schleifer
Professor: H. Amin
Associate Professors: R. Abdulla, K. Keenan
Assistant Professors: N. Hamdy, A. Ismail, M. El Masry, S. Peuchaud
Professors of Practice: H. Al Mirazi, S. Friedlander, S. MacLeod
Associate Professors of Practice: M. Abou Oaf (Chair), D. Ashmawi, F. Al-Atraqchi, S. Fahmy, K. Fox

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 three undergraduate degree programs:

- Bachelor of Arts in Multimedia Journalism
- Bachelor of Arts in Communication and Media Arts
- Bachelor of Arts in Integrated Marketing Communication

**Bachelor of Arts**

**Communication and Media Arts (B.A.)**

Today’s communication and media professionals need to have a broad background in both traditional and new media and to understand the impact of the convergence of these media on society. By combining media practice with communication theory, this degree covers a broad spectrum of critical perspectives on the media and introduces a range of contemporary media practices. Consistent with the mission of the School of Global Affairs and Public Policy, our program/s encompass a number of interdisciplinary courses.

The goal of this major is to produce well-rounded students who are knowledgeable about contemporary media theories and research issues, have developed excellent writing skills, have gained production and presentation skills, and are critical thinkers and writers.

Before declaring a CMA major, students must complete 24 credits of university coursework, complete RHET 201 with a grade B or better, and pass the basic writing skills test.

CMA majors are not permitted to have a major in MMJ or IMC. Students must complete a minimum of 120 credits for the Bachelor of Arts degree in CMA, of which no more than 40 credits can be in CMA and another 65 of their total credits must be Humanities and Social Sciences.

**Core Curriculum (39 credits)**

**JRMC Core (12 credits)**

- JRMC 200 - Introduction to Mass Communication (3 cr.)
- JRMC 201 - Mass Media Writing (3 cr.)
- JRMC 202 - Multimedia Writing (3 cr.)
- JRMC 203 - Mass Media Ethics and Responsibility (3 cr.)

**Communication and Media Arts Major (21 credits)**

- JRMC 250 - Global Media Systems (3 cr.)
**Catalog 2012-2013 Extract**

- JRMC 270 - Online Communication (3 cr.)
- JRMC 320 - Mass Communication Research (3 cr.)
- JRMC 406 - Internship (3 cr.)
- JRMC 420 - Media Management (3 cr.)
- JRMC 444 - Media Law and Policy (3 cr.)
- JRMC 482 - Media Convergence Capstone (3 cr.)

**Choose two of the following courses : (6 credits)**

- JRMC 230 - Introduction to Photography (3 cr.)
- JRMC 305 - Introduction to Visual Communication (3 cr.)
- JRMC 330 - Advanced Photography (3 cr.)
- JRMC 339 - Studio Production: AUC TV (3 cr.)
- JRMC 403 - Feature and Magazine Writing (3 cr.)
- JRMC 405 - Advanced Visual Communication (3 cr.)
- JRMC 415 - Public Relations Theory and Techniques (3 cr.)
- JRMC 460 - Audio Production (3 cr.)
- JRMC 471 - Online Journalism (3 cr.)

**General Electives/Minor**

Depending on the number of credit hours needed to complete 120 credits required for bachelor’s degree from AUC, CMA majors are encouraged to select elective courses leading to a minor in an area that will complement their major, including Arabic Studies, History, Middle East Studies, Performing Arts (music, film, and theater), Political Science, Sociology and others.

**Integrated Marketing Communication (B.A.)**

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 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 units of university coursework, complete RHET 201 with a grade of B or better, and pass the basic writing skills test. IMC majors are not permitted to have a major in CMA or MMJ. Students must complete a minimum of 120 credits for the Bachelor of Arts degree in IMC of which no more than 40 credits can be in IMC and another 65 of their total credits must be in Humanities and Social Sciences.

**Core Curriculum (39 credits)**
JRMC Core (12 credits)

- JRMC 200 - Introduction to Mass Communication (3 cr.)
- JRMC 201 - Mass Media Writing (3 cr.)
- JRMC 202 - Multimedia Writing (3 cr.)
- JRMC 203 - Mass Media Ethics and Responsibility (3 cr.)

Integrated Marketing Communication Major (24 credits)

- JRMC 305 - Introduction to Visual Communication (3 cr.)
- JRMC 315 - Introduction to Advertising (3 cr.)
- JRMC 320 - Mass Communication Research (3 cr.)
- JRMC 355 - Creative Strategy and Advertising Copywriting (3 cr.)
- JRMC 415 - Public Relations Theory and Techniques (3 cr.)
- JRMC 425 - Integrated Marketing Communication Campaigns Capstone (3 cr.)
- MKTG 302 - Principles of Marketing (3 cr.)
- MKTG 410 - Consumer-Buyer Behavior (3 cr.)

Choose one of the following courses: (3 credits)

- JRMC 230 - Introduction to Photography (3 cr.)
- JRMC 270 - Online Communication (3 cr.)
- JRMC 406 - Internship (3 cr.)
- JRMC 441 - Camera and Editing Workshop (3 cr.)
- JRMC 444 - Media Law and Policy (3 cr.)
- MKTG 408 - Marketing Communications Management (3 cr.)
- MKTG 416 - E-Marketing (3 cr.)

General Electives/Minor

Depending on the number of credit hours needed to complete 120 credits required for bachelor’s degree from AUC, IMC majors are encouraged to select elective courses leading to a minor in an area the will complement their major, including Arabic Studies, History, Middle East Studies, Performing Arts (music, film and theater), Political Science, Sociology and others.

Multimedia Journalism (B.A.)

The Multimedia Journalism (MMJ) major involves the convergence of print broadcast and online into a single journalism stream that exposes students to, and provides them with the basic skills for operating on all journalistic platforms. It also provides them with an intensive grounding in the basic reporting, writing, editing and technical skills, which are relevant to all journalistic media. Woven throughout the curriculum is a strong focus on ethics and social responsibility, as well as on the important role journalism plays in a vibrant society. Consistent with the mission of the School of Global Affairs and Public Policy, our programs encompass a number of interdisciplinary courses.

A MMJ major provides students with rigorous academic and professional training. The goal of this major is to produce well rounded students who are knowledgeable about contemporary media theories and research issues, developed
excellent writing and communication skills, gained production and presentation skills, and become critical thinkers and writers.

Before declaring a MMJ major, students must complete 24 credits of university coursework, complete RHET 201 with a grade B or better, and pass the basic writing skills test.

MMJ majors are not permitted to have a major in CMA or IMC. Students must complete a minimum of 120 credits for the Bachelor of Arts degree in MMJ, of which no more than 40 credits can be in MMJ and another 65 of their total credit hours must be in Humanities and Social Sciences.

**Core Curriculum (39 credits)**

**JRMC Core (12 credits)**

- JRMC 200 - Introduction to Mass Communication (3 cr.)
- JRMC 201 - Mass Media Writing (3 cr.)
- JRMC 202 - Multimedia Writing (3 cr.)
- JRMC 203 - Mass Media Ethics and Responsibility (3 cr.)

**Multimedia Journalism Major (24 credits)**

- JRMC 230 - Introduction to Photography (3 cr.)
- JRMC 301 - Journalism Editing and Design (3 cr.)
- JRMC 312 - Multimedia Journalism Lab: The Caravan (3 cr.)
- JRMC 333 - Research for Journalists (3 cr.)
- JRMC 337 - TV Scriptwriting and Production (3 cr.)
- JRMC 339 - Studio Production: AUC TV (3 cr.)
- JRMC 460 - Audio Production (3 cr.)
- JRMC 480 - Multimedia Reporting Capstone (3 cr.)

Choose One of the following Electives in the Major (3 credits)

- JRMC 305 - Introduction to Visual Communication (3 cr.)
- JRMC 310 - Public Opinion, Persuasion and Propaganda (3 cr.)
- JRMC 330 - Advanced Photography (3 cr.)
- JRMC 402 - Reporting and Writing in Arabic (3 cr.)
- JRMC 403 - Feature and Magazine Writing (3 cr.)
- JRMC 412 - Newsroom Editing and Management (3 cr.)
- JRMC 441 - Camera and Editing Workshop (3 cr.)
- JRMC 444 - Media Law and Policy (3 cr.)
- JRMC 471 - Online Journalism (3 cr.)

**General Electives/Minor**

Depending on the number of credit hours needed to complete 120 credits required for bachelor’s degree from AUC, MMJ majors are encouraged to select elective courses leading to a minor in an area the will complement their major,
including Arabic Studies, History, Middle East Studies, Performing Arts (music, film and theater), Political Science, Sociology and others.

**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 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 who have below a 3.0 cumulative GPA from 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.

Students who do not have an undergraduate degree in a mass communication major from AUC may be asked to complete a set of readings and/or a program of undergraduate prerequisite courses completed with grades of B or higher.

In addition to the general requirements established by the university, the applicant must demonstrate a proficiency in English at an advanced level and obtain an acceptable score on the Graduate Record Examination (GRE)

Students are also required to submit two recommendation letters from relevant, credible sources and a personal statement of purpose, which is evaluated for its 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 to submit an updated curriculum vitae, official transcripts of all university degrees, and samples of professionally published or broadcast work if available.

A writing sample 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. Writing samples may include a term paper, a chapter from an Honors or M.A. thesis, or a conference paper. If the student has graduated more than three years ago, he/she should include an essay of 300-500 words about a recent local, regional, or international communication issue that he/she deems important.

Applicants may be required to take an entry exam administered by the department to measure their writing skills and their overall awareness of the communication field and the word around them. Applicants may also be required to sit through a personal interview.
Admission Checklist:

- GRE Scores
- Official transcripts
- Proof of English language proficiency
- Two letters of recommendation
- Personal statement
- Curriculum vitae
- Samples of published/ broadcast work
- Writing sample

Courses

A minimum of 27 graduate credit hours is required, including the following four core courses:

- JRMC 500 - Mass Communication Theory and Literature (3 cr.)
- JRMC 502 - Current Issues in Mass Communication (3 cr.)
- JRMC 504 - Research Methods in Mass Communication (3 cr.)
- JRMC 550 - Seminar in International Communication (3 cr.)

Note

Students should complete the following courses as early after admission to the program as possible.

- JRMC 500 - Mass Communication Theory and Literature (3 cr.)
- JRMC 504 - Research Methods in Mass Communication (3 cr.)

Additional Requirements

Additional coursework should come 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 500-level courses (9 hours) from other disciplines. A maximum of six credit hours of 400-level coursework may be approved and counted toward the required credit hours.

Master of Arts Courses

- JRMC 500 - Mass Communication Theory and Literature (3 cr.)
- JRMC 501 - Advanced Reporting and Writing (3 cr.)
- JRMC 502 - Current Issues in Mass Communication (3 cr.)
- JRMC 504 - Research Methods in Mass Communication (3 cr.)
- JRMC 506 - Internship (3 cr.)
- JRMC 550 - Seminar in International Communication (3 cr.)
- JRMC 570 - Seminar in Mass Communication and National Development (3 cr.)
- JRMC 580 - Impact of Television: Issues and Developments (3 cr.)
- JRMC 590 - Special Topics (3 cr.)
Comprehensive Examination

Master of Arts students must complete the following courses in preparation for the comprehensive examination. The examination procedure is described in the “General Requirements” section. An oral examination may be required in addition to the written examination. Students must pass comprehensive examinations before being permitted to begin work on their theses.

- JRMC 500 - Mass Communication Theory and Literature (3 cr.)
- JRMC 502 - Current Issues in Mass Communication (3 cr.)
- JRMC 504 - Research Methods in Mass Communication (3 cr.)
- JRMC 550 - Seminar in International Communication (3 cr.)

Thesis

A thesis is required for all students. The department’s thesis committee must approve the thesis topic after the student, in consultation with an advisor, submits a formal proposal. Written in English, the thesis must be defended by the student before faculty members, and must conform to current university requirements, policies and procedures.

Television and Digital Journalism (M.A.)

Master’s Degree in Television & Digital Journalism

Offered through the Kamal Adham Center for Television and Digital Journalism. Consistent with the mission of the School of Global Affairs and Public Policy, our program encompass a number of interdisciplinary courses.

The Master’s degree in Television & Digital Journalism is intended to provide comprehensive knowledge of the theories and practice of television journalism and new media. Students receive intensive hands-on exposure to the skills needed to produce both field reports and in-studio programs. This includes both editorial and technical skills, such as script-writing, use of camera, editing and studio operations, as well as seminars on issues of ethics and responsibility. The program also gives students the opportunity broadcast their production on AUC TV, which is linked to all TV sets on campus as well as on AUC TV website.

Admission

In addition to the other JRMC departmental requirements for admission to graduate study, all applicants will be personally interviewed by the director. Applicants with slightly lower GPA may be accepted after demonstrating professional news writing experience as determined by the program director. Applicants who have not taken JRMC 201 Mass Media Writing and JRMC 337 TV Scriptwriting and Production must take these courses as prerequisites and obtain a grade of B or higher prior to beginning the graduate program.

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:

- JRMC 537 - TV News Gathering and Script Writing (3 cr.)
- JRMC 538 - Arabic TV Script Writing (3 cr.)
- JRMC 539 - TV Presentation and Voice Coaching (3 cr.)
- JRMC 541 - Digital Camera Production (3 cr.)
- JRMC 542 - Digital Video Editing (3 cr.)
- JRMC 545 - Broadcast News Intensive I (3 cr.)
- JRMC 546 - Broadcast News Intensive II (3 cr.)
- JRMC 559 - TV Interviewing & Talk Show Hosting (3 cr.)
- JRMC 571 - Digital Journalism (3 cr.)

All students must also take two (2) of the following:

- JRMC 444 - Media Law and Policy (3 cr.)
- JRMC 460 - Audio Production (3 cr.)
- JRMC 501 - Advanced Reporting and Writing (3 cr.)
- JRMC 506 - Internship (3 cr.)
- JRMC 550 - Seminar in International Communication (3 cr.)
- JRMC 580 - Impact of Television: Issues and Developments (3 cr.)
- JRMC 590 - Special Topics (3 cr.)

Although not required, JRMC 506 Internship is strongly recommended to all students admitted into specialization. Students must undertake a production project, which consist of a videotaped special news report and a written introductory paper justifying the approach taken in the context of television new-gathering and production theory.

**Internship**

A six-week summer internship in a broadcast news organization is a required element of the TV & Digital Master’s. Students will be offered the opportunity for placement in either foreign TV news bureaus/Arab satellite channels or internet news organizations based in Egypt or at the headquarters and bureaus of Arab and Western television/internet news organizations. A third option will be enrolment in summer broadcast or online journalism intensives offered at select overseas universities (with approval of sequence director).

**Thesis and Comprehensive Exams**

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. Those students who desire a thesis degree in preparation for eventual PhD study must, in addition to the requirement above, take JMC 500, 502, 504 and 550, sit for comprehensives and enroll for a thesis. In some cases, with approval, they may be allowed to take some of those courses while they are completing the core requirements.

**Department of Law**

Department of Law
School of Global Affairs and Public Policy
Professor Emeritus: E. Hill
Associate Professors: A. Lorite (on leave), A. Shalakany, T. Skouteris (Chair)
Senior Instructor: D. Van Bogaert

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 Forced Migration and Refugee Studies (FMRS) simultaneously or sequentially, and to cross count 4 courses (12 credits) with the advice and consent of the department for a total of eleven courses (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.

Course Requirements

The International Human Rights Law MA degree requires a total of 27 credits hours.

There are five required courses:

- LAW 509 - International Law (3 cr.)
- LAW 510 - Introduction to International Human Rights and Humanitarian Law (3 cr.)
- LAW 527 - Graduate Law Seminar (3 cr.)

Two out of the following three courses:

- LAW 513 - The European System of Human Rights Protection (3 cr.)
- LAW 514 - Human Rights in the Middle East (3 cr.)
- LAW 519 - Human Rights in Africa (3 cr.)

The remaining four 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 Right 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 599 - Research Guidance/Thesis (no cr., graded)

**Degree Time Framework**

Fulfilling the M.A. in International Human Rights Law normally calls for two years of study.

**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 what they don’t know.

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.

**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 500 - Legal Research and Writing (3 cr.)
- LAW 527 - Graduate Law Seminar (3 cr.)
- Two out of the following three courses:
  - LAW 501 - Jurisprudence (3 cr.)
  - LAW 502 - Comparative Law (3 cr.)
  - LAW 509 - 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 599 - Research Guidance/Thesis (no cr., graded)

**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.

Requirements

The Graduate Diploma requires 18 credit hours.

Two courses are required:

- LAW 500 - Legal Research and Writing (3 cr.)

One out of the following two courses:

- LAW 502 - Comparative Law (3 cr.)
- LAW 509 - International Law (3 cr.)

Electives

Students will be able to take up to four courses as electives. 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 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. The fulfillment of the requirements of the Graduate Diploma, 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 course 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.

Requirements

The Graduate Diploma requires 18 credit hours.

There are four required courses:

- LAW 509 - International Law (3 cr.)
- LAW 510 - Introduction to International Human Rights and Humanitarian Law (3 cr.)

And Two out of the following three courses:

- LAW 513 - The European System of Human Rights Protection (3 cr.)
- LAW 514 - Human Rights in the Middle East (3 cr.)
- LAW 519 - Human Rights in Africa (3 cr.)

* The remaining two courses are electives. The Law Department’s approval is required for electives offered by other departments.

Degree Time Framework

Fulfilling the Graduate Diploma in International Human Rights Law normally calls for one year of study.

Department of Public Policy and Administration
Professors: L. El-Baradei (Associate Dean of School of Global Affairs and Public Policy), A. Hamzawy, T. Dolan, E. Shahin
Associate Professor: J. Bremer (Chair), Sh. Bhuiyan
Visiting Associate Professor: Kh. Amin
Professors of the Practice: I. Awad, M. Shahin

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.

Dual Degree Programs

Development Practice (MDP) option BSc/CENG-MPA

Dual Degree Option BSc/CENG-MPA

Master's Program in Development Practice (MDP)

Option

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 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. Those interested in this option are required to complete a summer work assignment for Fall practicum 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. The program prepares students for careers in public service 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 MDP option 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. The following course sequence has been developed for the MDP option, but students should consult their advisor in CENG to ensure that all SSE requirements are met:

**SEMESTER IX**
- CENG 424 Methods & Equipment for Construction II
- xxxx xxx Eng. Concentration 1 elective
- CENG 448 Financial Management and Accounting in Construction (MPA credit)
- CENG xxx Elective (1)
- CENG 431 Intro. to Transportation
- CENG 490 Senior Thesis I (Capstone Core Level I )
- CENG 497 Industrial Training (Practicum)

**SEMESTER X**
- xxxx xxx Engineering Concentration 2
- CENG 567 Construction Leadership and Management/Elective 2
- CENG 491 Senior Thesis II (Capstone Core Level II )
- PPAD 506 Essentials of Public Policy and Administration (MPA credit)
- PPAD 500 Research Methods for Public Policy and Administration (MPA credit)
- xxxx xxx Science elective (from MDP list)
- Summer internship – public/NGO management focus and participation in MDP colloquium (MPA credit through 590)

**SEMESTER XI**
- PPAD 590 Practicum (Capstone Level II) (MPA Credit)
- ENGR 516 Engineering for Sustainable Development (MPA Credit)
- PPAD 570 Global Classroom (MPA Credit)
- xxxx xxx Science elective (from MDP list)
- PPAD 598 Thesis Research Seminar (MPA Credit)

**SEMESTER XII**
- PPAD 514 Human Resource Management for Government and Nonprofit Organizations (MPA Credit)
- PPAD 516 Core Concepts and Applications for Social and Environmental Policy (MPA Credit)
- PPAD 517 NGO Management (MPA Credit)
- PPAD 599 Thesis (MPA Credit)

Summer thesis work, if needed, and participation in MDP colloquium

*xxx indicates elective within the respective program*

Lists of MDP-relevant courses will be provided to students in the program prior to registration for each semester, based on offerings available in the appropriate departments

**Master of Global Affairs**

**Global Affairs, with concentrations in International Cooperation, and International Security (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 plus a thesis. 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 thesis consistent with department and university guidelines and complete at least two enrollments the mandatory thesis sequence courses (598 and 599, both non-credit), including at least one enrollment in 598.

Core Requirement (18 credit hours):

Students must complete four (4) courses in group 1, one (1) course in group 2, and one (1) course in group 3.

Group 1: Complete all four (4) of the following:

- LAW 509 - International Law (3 cr.)
- PPAD 500 - Research Methods for Public Policy and Administration (3 cr.)
- PPAD 527 - International Organization in Global Governance (3 cr.)
- PPAD 528 - International Negotiation: Theory and Practice (3 cr.)

Group 2: Complete one (1) of the following:

- PPAD 524 - Globalization and Development (3 cr.)
- POLS 555 - Conflict and Security in Global Politics (3 cr.)
Group 3: Complete one (1) of the following:

- PPAD 502 - Economics for Public Policy Analysis (3 cr.)
- PPAD 506 - Essentials of Public Policy and Administration (3 cr.)
- POLS 561 - Public Policy and Development (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 3 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 570 – Selected Topics in Public Policy and Administration.

MGA Concentration 1: International Security – 5 courses (15 credits) required

Group 1: Required for all students in the concentration

- PPAD 529 - Issues in International Security (3 cr.)
- PPAD 530 - Conflict Management and Resolution (3 cr.)

Group 2: Complete three (3) of the following:

- PPAD 531 - Armament, Arms Control and Disarmament (3 cr.)
- PPAD 532 - Issues in regional security in the Middle East and Africa (3 cr.)
- PPAD 519 - Leadership and Communication for Public Affairs (3 cr.)
- POLS 554 - Comparative Foreign Policy: Theories and Applications (3 cr.)

MGA Concentration 2: International Cooperation -- 5 courses (15 credits) required

Group 1: Required for all students in concentration

- PPAD 533 - Cooperation for Development in the Multilateral System (3 cr.)
- POLS 525 - International Political Economy (3 cr.)

Group 2: Complete three (3) of the following:

- PPAD 516 - Core Concepts and Applications for Social and Environmental Policy (3 cr.)
- PPAD 519 - Leadership and Communication for Public Affairs (3 cr.)
- PPAD 534 - Comparative Bilateral Cooperation Policies for Development (3 cr.)
- PPAD 535 - Multilateral Cooperation for Development at the Country Level: Issues and Practice (3 cr.)

Master's Project (6 credits)
Students are required to complete a master's project addressing a challenge relevant to their concentration from the point of view of an organization involved in the issue, which will serve as the project's client. The preparation of the master's project proposal and final report must comply with departmental guidelines with regard to client involvement, content, format, dates, and the review and supervision process. Students working on the master's project must first enroll in a section of PPAD 590, the practicum, to prepare a proposal to the client and then must enroll in a second semester of PPAD 590 during the preparation of their policy research, analysis, recommendations, and final report. Students who do not complete their master's project within these two semesters must enroll in 1 credit of independent study each semester until the project is completed, including the summer semester if they plan to complete their project and graduate in the summer. The master's project may be completed as a team or as an individual project. In either case, students are required to attend weekly meetings of their section to present and discuss their own work and that of other students.

Master of Public Administration (MPA)

Public Administration, with concentrations in Management of Public Sector Reform, and Management of Nonprofit and Development Organizations (MPA)

Master of Public Administration

The Master of Public Administration 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 upper management positions in public service. Students, who are generally mid-career at entry, pursue careers in government, nonprofit organizations, international development agencies, academia, and the private sector.

Program objectives

The mission of the MPA Program is to support effective and efficient administration of government and nonprofit organizations and better public governance in Egypt and the Middle East by preparing professionals for careers in public service with the highest ethical standards, strong competencies in 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.

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 (33 credit hours)

Students seeking the degree of Master of Public Administration must complete 33 credit hours plus a thesis. The program core, required of all students, consists of 6 courses (18 credits). Students must complete a concentration of 5
Courses (15 credits). Students may elect either the concentration in Management of Public Sector Reform or the concentration in Management of Nonprofits and Development Organizations. 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 thesis consistent with department and university guidelines and complete at least one enrollment in each of the mandatory thesis sequence courses (598 and 599, both non-credit).

Core Requirement (18 credit hours):

Students must complete four (4) courses in group 1, one (1) course in group 2, and one (1) course in group 3.

**Group 1: Complete all four (4) of the following:**
- PPAD 500 - Research Methods for Public Policy and Administration (3 cr.)
- PPAD 501 - Strategic Management for Government and Nonprofit Organizations (3 cr.)
- PPAD 506 - Essentials of Public Policy and Administration (3 cr.)
- PPAD 514 - Human Resource Management for Government and Nonprofit Organizations (3 cr.)

**Group 2: Complete one (1) of the following:**
- PPAD 504 - Essentials of Financial Planning and Management for Government and Nonprofit Organizations (3 cr.)
- PPAD 512 - Management of Development Programs (3 cr.)
- PPAD 513 - Comparative Public Governance (3 cr.)

**Group 3: Complete one (1) of the following:**
- PPAD 508 - Qualitative Analysis for Policy and Administration (3 cr.)
- PPAD 509 - Applied Quantitative Analysis (3 cr.)
- PPAD 515 - Public Policy Analysis and Program Evaluation (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 3 concentration course, if not taken as a core course (i.e., a course may be counted toward only one requirement).

**MPA Concentration 1: Management of Public Sector Reform -- 5 courses (15 credits) required**

**Group 1: Required for all students in the concentration**
- PPAD 518 - Governance, Accountability, and Stakeholder Negotiations (3 cr.)

**Group 2: Complete one (1) of the following:**
- PPAD 519 - Leadership and Communication for Public Affairs (3 cr.)
- PPAD 523 - Citizen-centered government (3 cr.)
- PPAD 525 - Reforming Delivery of Social Services (3 cr.)

**Group 3: Complete 2-3 of the following in consultation with departmental advisor:**
- PPAD 505 - Institutions, Democratization, and Public Policy (3 cr.)
- PPAD 508 - Qualitative Analysis for Policy and Administration (3 cr.)
- PPAD 510 - Organizational Behavior for Government and Nonprofit Management (3 cr.)
- PPAD 511 - Administrative Environment and Public Policy in Egypt and the Middle East (3 cr.)
- PPAD 512 - Management of Development Programs (3 cr.)
- PPAD 513 - Comparative Public Governance (3 cr.)
- PPAD 520 - Global Health Issues and Policies (3 cr.)
- PPAD 524 - Globalization and Development (3 cr.)
- PPAD 570 - Special Topics in Public Policy and Administration (1-3 cr.)
- PPAD 575 - Independent Study in Public Policy and Administration (1-3 cr.)
- PPAD 590 - Practicum (3 cr.)

**Group 4 (option available to students completing 2 courses only in Group 3):**
Complete 1 course in another department selected in consultation with departmental advisor. Students are strongly encouraged to take a course in another School of Global Affairs and Public Policy department or center if possible and in particular students in this concentration are strongly recommended to take at least one course in law as a concentration elective.

### MPA Concentration 2: Management of Nonprofit and Development Organizations -- 5 courses (15 credits) required

**Group 1: Required for all students in concentration**
- PPAD 517 - Non-profit Management (3 cr.)

**Group 2: Complete one (1) of the following:**
- PPAD 516 - Core Concepts and Applications for Social and Environmental Policy (3 cr.)
- PPAD 526 - Corporate Social Responsibility and NGO Partnerships (3 cr.)

**Group 3: Complete 2-3 of the following in consultation with departmental advisor:**
- PPAD 505 - Institutions, Democratization, and Public Policy (3 cr.)
- PPAD 508 - Qualitative Analysis for Policy and Administration (3 cr.)
- PPAD 510 - Organizational Behavior for Government and Nonprofit Management (3 cr.)
- PPAD 511 - Administrative Environment and Public Policy in Egypt and the Middle East (3 cr.)
- PPAD 512 - Management of Development Programs (3 cr.)
- PPAD 513 - Comparative Public Governance (3 cr.)
- PPAD 520 - Global Health Issues and Policies (3 cr.)
- PPAD 523 - Citizen-centered government (3 cr.)
- PPAD 524 - Globalization and Development (3 cr.)
- PPAD 525 - Reforming Delivery of Social Services (3 cr.)
- PPAD 570 - Special Topics in Public Policy and Administration (1-3 cr.)
- PPAD 575 - Independent Study in Public Policy and Administration (1-3 cr.)
- PPAD 590 - Practicum (3 cr.)

**Group 4 (option available to students completing 2 courses only in Group 3):**
Complete 1 course in another department selected in consultation with departmental advisor. Students are strongly encouraged to take a course in another School of Global Affairs and Public Policy department or center if possible.

### Practicum (PPAD 590): 3 credits

Students are strongly encouraged to undertake a practicum within their concentration, ideally in conjunction with their thesis work.

### 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 500, a required core course, but may prepare an alternative thesis proposal if desired. Students must enroll in PPAD 599 (Research Guidance and Thesis) and identify a thesis supervisor in the semester during which they plan to present their proposal for approval, whether or not they plan to use the draft proposal prepared in PPAD 500. Once the proposal is approved, students are required to enroll in PPAD 598, 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 599. Students must pay 3 credits of tuition for the first enrollment in PPAD 598 and 599 and thereafter pay 1 credit of tuition for each Fall and Spring semester, until the thesis is successfully defended and approved by the Dean. Students planning to complete their thesis and graduate in the summer or to get approval for their proposal in order to enroll in 598 in the Fall must enroll in PPAD 599 in the summer term and pay 3 credits if this is their first enrollment in 599 or 1 credit of tuition if they have completed the first 599 enrollment.

PPAD 598, the thesis research seminar, is designed to support the applied research required for the thesis and the writing of the thesis itself. It provides a forum for students to present and discuss their work and for colleagues to support and critique their work. The course does not have assigned readings, but students will be required to read and comment on the work of other students, both orally and in writing, and to present draft thesis chapters.

Dual Degree Option BSc/CENG-MPA

Master's Program in Development Practice (MDP) Option

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 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. Those interested in this option are required to complete a summer work assignment for Fall practicum 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. The program prepares students for careers in public service 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 MDP option 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. The following course sequence has been developed for the MDP option, but students should consult their advisor in CENG to ensure that all SSE requirements are met:

**SEMESTER IX**

- CENG 424 Methods & Equipment for Construction II
- xxxx xxx Eng. Concentration 1 elective
- CENG 448 Financial Management and Accounting in Construction (MPA credit)
- CENG xxx Elective (1)
- CENG 431 Intro. to Transportation
- CENG 490 Senior Thesis I (Capstone Core Level I)
- CENG 497 Industrial Training (Practicum)

**SEMESTER X**
Catalog 2012-2013 Extract

- xxxx xxx Engineering Concentration 2
- CENG 567 Construction Leadership and Management/Elective 2
- CENG 491 Senior Thesis II (Capstone Core Level II)
- PPAD 506 Essentials of Public Policy and Administration (MPA credit)
- PPAD 500 Research Methods for Public Policy and Administration (MPA credit)
- xxxx xxx Science elective (from MDP list)
- Summer internship – public/NGO management focus and participation in MDP colloquium (MPA credit through 590)

SEMESTER XI

- PPAD 590 Practicum (Capstone Level II) (MPA Credit)
- ENGR 516 Engineering for Sustainable Development (MPA Credit)
- PPAD 570 Global Classroom (MPA Credit)
- xxxx xxx Science elective (from MDP list)
- PPAD 598 Thesis Research Seminar (MPA Credit)

SEMESTER XII

- PPAD 514 Human Resource Management for Government and Nonprofit Organizations (MPA Credit)
- PPAD 516 Core Concepts and Applications for Social and Environmental Policy (MPA Credit)
- PPAD 517 NGO Management (MPA Credit)
- PPAD 599 Thesis (MPA Credit)

Summer thesis work, if needed, and participation in MDP colloquium

*xxx indicates elective within the respective program

Lists of MDP-relevant courses will be provided to students in the program prior to registration for each semester, based on offerings available in the appropriate departments

Master of Public Policy

Public Policy, with concentrations in Social and Environmental Policy, Government Promotion and Regulation of the Private Sector, and Media Policy (MPP)

Master of Public Policy

The Master of Public Policy 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 positions in public service and for careers as policy analysts. Students, who are generally in the early part of their career at entry, pursue careers in government, nonprofit organizations, international development agencies, academia, consulting firms, and the private sector.

Program objectives

The mission of the MPP Program is to support evidence-based policy-making and better public governance in Egypt
and the Middle East by preparing professionals for careers in public service with the highest ethical standards, strong competencies in public governance, excellent leadership and communication skills, capability to develop and use evidence and analysis in public service settings, and a commitment to building a better future for the people of Egypt and the region.

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 (33 credit hours)

Students seeking the degree of Master of Public Policy must complete 33 credit hours plus a thesis. The program core, required of all students, consists of 6 courses (18 credits). Students must complete a concentration of 5 courses (15 credits). Students may elect either the concentration in Social and Environmental Policy or the concentration in Government Regulation and Promotion of the Private Sector. Students are required to declare their concentration before beginning their second semester of enrollment in the program and to identify an area of professional concentration at that time. In addition to coursework, students must complete a thesis consistent with department and university guidelines and complete at least one enrollment in each of the mandatory thesis sequence courses (598 and 599, both non-credit).

Core Requirement (18 credit hours):

Students must complete three (3) courses in group 1, two (2) courses in group 2, and one (1) course in group 3.

Group 1: Complete all three (3) of the following:
- PPAD 500 - Research Methods for Public Policy and Administration (3 cr.)
- PPAD 502 - Economics for Public Policy Analysis (3 cr.)
- PPAD 503 - Role of Government in a Market-Oriented Economy (3 cr.)

Group 2: Complete two (2) of the following:
- PPAD 505 - Institutions, Democratization, and Public Policy (3 cr.)
- PPAD 506 - Essentials of Public Policy and Administration (3 cr.)
- PPAD 507 - Government Finance for Policy Analysis (3 cr.)
- PPAD 515 - Public Policy Analysis and Program Evaluation (3 cr.)
- PPAD 517 - Non-profit Management (3 cr.)
- PPAD 518 - Governance, Accountability, and Stakeholder Negotiations (3 cr.)

Group 3: Complete one (1) of the following:
- PPAD 508 - Qualitative Analysis for Policy and Administration (3 cr.)
- PPAD 509 - Applied Quantitative Analysis (3 cr.)

NOTE: Students with limited preparation management and social science are strongly encouraged to enroll in PPAD 506; conversely, students with a background in management and/or social science may not enroll in PPAD 506 for credit toward the MPP. Students with strong preparation in economics may substitute any course in Group 2 or 3 to complete their Group 1 requirement.
Concentration Requirement (15 credit hours):

Students must complete 5 courses in one of the concentrations below. In addition to the courses shown for each concentration, students may select a course from the core list shown above as a Group 3 concentration course if not taken as a core course (i.e., a course may be counted towards only one requirement). Students may substitute up to two courses for those shown with permission of the department. Students who have completed at least 4 core courses and who have a GPA of 3.5 or better may petition the department to complete a concentration in another policy field, such as urban policy or health policy, which must include at least 3 PPAD courses.

MPP Concentration 1: Social and Environmental Policy – 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: Required for all students in concentration
- PPAD 516 - Core Concepts and Applications for Social and Environmental Policy (3 cr.)

Group 2: Complete one (1) of the following:
- PPAD 515 - Public Policy Analysis and Program Evaluation (3 cr.)
- PPAD 520 - Global Health Issues and Policies (3 cr.)
- PPAD 524 - Globalization and Development (3 cr.)
- PPAD 525 - Reforming Delivery of Social Services (3 cr.)
- PPAD 526 - Corporate Social Responsibility and NGO Partnerships (3 cr.)

Group 3: Complete 1-3 of the following:
- PPAD 501 - Strategic Management for Government and Nonprofit Organizations (3 cr.)
- PPAD 504 - Essentials of Financial Planning and Management for Government and Nonprofit Organizations (3 cr.)
- PPAD 505 - Institutions, Democratization, and Public Policy (3 cr.)
- PPAD 508 - Qualitative Analysis for Policy and Administration (3 cr.)
- PPAD 509 - Applied Quantitative Analysis (3 cr.)
- PPAD 510 - Organizational Behavior for Government and Nonprofit Management (3 cr.)
- PPAD 511 - Administrative Environment and Public Policy in Egypt and the Middle East (3 cr.)
- PPAD 517 - Non-profit Management (3 cr.)
- PPAD 518 - Governance, Accountability, and Stakeholder Negotiations (3 cr.)
- PPAD 519 - Leadership and Communication for Public Affairs (3 cr.)
- PPAD 521 - Core Concepts and Applications for Government Regulation (3 cr.)
- PPAD 522 - Core Concepts and Applications for Government Promotion of the Private Sector (3 cr.)
- PPAD 523 - Citizen-centered government (3 cr.)
- PPAD 570 - Special Topics in Public Policy and Administration (1-3 cr.)
- PPAD 575 - Independent Study in Public Policy and Administration (1-3 cr.)
- PPAD 590 - Practicum (3 cr.)

Group 4 (option available to students completing 1-2 courses only in Group 3):
Complete 1-2 courses in another department selected in consultation with departmental advisor. Students are strongly encouraged to take at least one (1) course in another School of Global Affairs and Public Policy department or center if possible.

MPP Concentration 2: Government Promotion and Regulation of the Private Sector – 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 two (2) of the following:**
- PPAD 521 - Core Concepts and Applications for Government Regulation (3 cr.)
- PPAD 522 - Core Concepts and Applications for Government Promotion of the Private Sector (3 cr.)
- PPAD 507 - Government Finance for Policy Analysis (3 cr.)

**Group 2: Complete two (2) courses from the offerings of the Law and/or Economics Departments**
Must be selected in consultation with your advisor; students with limited backgrounds in law or economics may take one course at the 400 level in either department.

**Group 3: Complete 1 of the following:**
- PPAD 501 - Strategic Management for Government and Nonprofit Organizations (3 cr.)
- PPAD 504 - Essentials of Financial Planning and Management for Government and Nonprofit Organizations (3 cr.)
- PPAD 505 - Institutions, Democratization, and Public Policy (3 cr.)
- PPAD 508 - Qualitative Analysis for Policy and Administration (3 cr.)
- PPAD 509 - Applied Quantitative Analysis (3 cr.)
- PPAD 510 - Organizational Behavior for Government and Nonprofit Management (3 cr.)
- PPAD 511 - Administrative Environment and Public Policy in Egypt and the Middle East (3 cr.)
- PPAD 518 - Governance, Accountability, and Stakeholder Negotiations (3 cr.)
- PPAD 519 - Leadership and Communication for Public Affairs (3 cr.)
- PPAD 570 - Special Topics in Public Policy and Administration (1-3 cr.)
- PPAD 575 - Independent Study in Public Policy and Administration (1-3 cr.)
- PPAD 590 - Practicum (3 cr.)

**MPP Concentration 3: Media Policy - 5 courses (15 credits) required**

**Group 1: Required for all students in the concentration:**
- JRMC 444 - Media Law and Policy (3 cr.)
- JRMC 550 - Seminar in International Communication (3 cr.)
- JRMC 570 - Seminar in Mass Communication and National Development (3 cr.)

**Group 2: Complete two of the following:**
- JRMC 420 - Media Management (3 cr.)
- JRMC 502 - Current Issues in Mass Communication (3 cr.)
- PPAD 511 - Administrative Environment and Public Policy in Egypt and the Middle East (3 cr.)
- LAW 510 - Introduction to International Human Rights and Humanitarian Law (3 cr.)

**Practicum (PPAD 590): 3 credits**

Students are strongly encouraged to undertake a practicum within their concentration, ideally in conjunction with their thesis work.

**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 500, a required core course, but may prepare an alternative thesis proposal if desired. Students must enroll in PPAD 599 (Research Guidance and Thesis) and identify a thesis supervisor in the semester during which they plan to present their proposal for approval, whether or not they plan to use the draft proposal prepared in PPAD 500. Once the proposal is approved, students are required to enroll in PPAD 598, 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 599. Students must pay 3 credits of tuition for the first enrollment in PPAD 598 and 599 and thereafter pay 1 credit of tuition for each Fall and Spring semester, until the thesis is successfully defended and approved by the Dean. Students planning to complete their thesis and graduate in the summer or to get approval for their proposal in order to enroll in 598 in the Fall must enroll in PPAD 599 in the summer term and pay 3 credits if this is their first enrollment in 599 or 1 credit of tuition if they have completed the first 599 enrollment.

PPAD 598, the thesis research seminar, is designed to support the applied research required for the thesis and the writing of the thesis itself. It provides a forum for students to present and discuss their work and for colleagues to support and critique their work. The course does not have assigned readings, but students will be required to read and comment on the work of other students, both orally and in writing, and to present draft thesis chapters.

Graduate Diploma

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.

The Cynthia Nelson Institute for Gender and Women's Studies

Director: M. Rieker

Affiliated Faculty: Mulki Al Sharmani (SRC), Soraya Altorki (SAPE), Ibrahim Elnur (POLS), Alejandro Lorite Escorihuela (Law), Nadia Farah (POLS), Ferial Ghazoul (ECLT), Barbara Ibrahim (Gerhart Center), Vassiliki Kotini (ECLT), Hoda Lutfi (ARIC), Samia Mehrez (ARIC), Tanya Monforte (Law), Adrienne Pine (SAPE), Helen Rizzo (SAPE), Reem Saad (SRC), Hanan Sabea (SAPE), Mona Said (ECON), Hany Sayed (Law), Amr Shalakany (Law), Hania Sholkamy (SRC), Robert Switzer (PHIL), Mariz Tadros (POLS), Richard Tutwiler (DDC).
Master of Arts

Gender and Women’s Studies in the Middle East/North Africa, with specializations in Gender and Justice, Gendered Political Economies, and Gender and Women’s Studies in the Middle East/ North Africa (M.A.)

Master of Arts in Gender and Women’s Studies in the Middle East/North Africa

The graduate program in Gender and Women’s Studies offers advanced study in three tracks:

- Gender and Justice
- Gendered Political Economies
- Gender and Women’s Studies in the Middle East/ North Africa

The graduate program in Gender and Women’s studies prepares graduates for a wide variety of professional careers. Specialists in gender and women’s studies are being hired as consultants in international development agencies, local NGO’s, national government agencies, all of which hire people that have special training in understanding gender relations. Students wishing to pursue doctoral work will find that interdisciplinary training in gender and women’s studies equips them with theoretical and methodological strengths in most disciplines and applied research fields. Consistent with the mission of the School of Global Affairs and Public Policy, Gender and Women’s Studies is an interdisciplinary graduate program.

Gender and Justice

Gender and Justice offers advanced study of contemporary practices and problems of justice ranging from international justice regimes to national legal cultures to social and economic justice claims with a particular focus on the global south.

Gendered Political Economies

The specialization in Gendered Political Economies engages with shifts in the gendering of economic and political trajectories of late modernity. It deals with issues relating to poverty, labor politics, political economies of desire, migration, mobility and development histories and practices. The aim is to provide students with a solid grounding in the nexus between gender and modalities for reorganizing the political economic order in the contemporary world.
Gender and Women’s Studies in the Middle East/ North Africa

The Gender and Women's Studies in the Middle East, North Africa focus offers an interdisciplinary field of analysis that draws its questions and approaches from the humanities and social sciences through investigating how relations of gender are embedded in social, political and cultural formations. It provides students with an interdisciplinary and transnational perspective with special emphasis on the Middle East and North African region.

The requirements for the tracks are as follows

Specialization in Gender and Justice

There are five required courses:

- GWST 500 - Theorizing Gender (3 cr.) (First semester)
- GWST 502 - Justice: Histories and Theories (3 cr.) (First semester)
- GWST 505 - Gender and Feminist Research Methodologies (3 cr.) (Second semester)
- GWST 508 - Women and Human Rights (3 cr.)
- SOC/ANTH 530 - Theorizing the State (3 cr.)

Electives:

The remaining three courses are electives selected from three course groups: Group 1: Geographies of Justice, Group 2: Conflict, Identity, Reconstruction, Group 3: The Gendered Subject of Law. Students must select one course from each group.

Specialization in Gendered Political Economies

There are six required courses:

- GWST 500 - Theorizing Gender (3 cr.) (First semester)
- GWST 503 - Histories and Theories of Gender and Development (3 cr.) (First semester)
- GWST 504 - Gender and Migration (3 cr.) (Second semester)
- GWST 505 - Gender and Feminist Research Methodologies (3 cr.) (Second semester)
- GWST 506 - Reading Capital (3 cr.)
- GWST 507 - Critical Geographies: Reading the Global South (3 cr.)

Electives:
The remaining two courses are 500 level electives. Of these, one course at the 400 level may be considered for credit with approval of the IGWS Graduate Advisory Committee.

**Specialization in Gender and Women’s Studies in the Middle East/North Africa**

There are five required courses:

- GWST 500 - Theorizing Gender (3 cr.)
  (First semester)
- GWST 501 - Approaches to Middle East/ North Africa Gender and Women’s Studies (3 cr.)
  (Second semester)
- GWST 505 - Gender and Feminist Research Methodologies (3 cr.)
  (Second semester)

Plus any two GWST courses

**Electives:**

Students select the remaining three electives at the 500 level across the social sciences and humanities from a selected list. Of these, one course at the 400 level may be considered for credit with approval of the IGWS Graduate Advisory Committee.

**MA Thesis**

All students must complete a thesis according to university regulations. Students must register for GWST 599. Before commencing work on the thesis, the student must have a thesis proposal approved by the IGWS Graduate Advisory Committee. Students should familiarize themselves with the specific procedural requirements of the IGWS thesis. Guidelines are available in the IGWS office and on the web.

**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 semester only.

**Note**

The list of electives for the three track specializations are reviewed by the IGWS Graduate Advisory Committee every academic year. The list is available on the IGWS graduate center website or in the IGWS office.

**Graduate Diploma**
Gender and Women’s Studies in the Middle East and North Africa (Graduate Diploma)

Course Requirements

Six courses (18 credit hours) are required for the diploma. Diploma students must take two required courses (GWST 500 and GWST 505) and four 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.

Center for Migration and Refugee Studies

*Director:* I. Awad  
*Associate Director:* A. Ullah

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 Forced Migration and Refugee Studies and a Graduate Diploma with a Specialization in Psychosocial Intervention 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 interdiscipliary 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.
Admission

Applicants seeking admission to the Master’s program should have an undergraduate degree of high standing (equivalent of a B grade or higher) within the field of Humanities and/or Social Sciences 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.

Requirements:

Course Requirements

The MA program requires the successful completion of 8 courses (24 credit hours). These include five required core courses plus three elective courses.

Students must choose 5 courses out of the following 6 core courses:

- MRS 502 - Comparative Migration Policies (3 cr.)
- MRS 507 - Introduction to Forced Migration and Refugee Studies (3 cr.)
- MRS 518 - International Refugee Law (3 cr.)
- MRS 500 - Migration & Refugee Movements in the Middle East and North Africa (3 cr.)
- MRS 501 - International Migration & Development (3 cr.)
- MRS 576 - Methods of Research with Forced Migrants & Refugees: Issues in Forced Migration (3 cr.)

Two electives must be chosen from the CMRS list of electives offered each semester. One elective can be chosen from the LAW department from among the following International Human Rights courses:

- LAW 514 - Human Rights in the Middle East (3 cr.)
- LAW 516 - Economic, Social, and Cultural Rights (3 cr.)
- LAW 519 - Human Rights in Africa (3 cr.)

Thesis Requirements

All students must complete a thesis according to university regulations. Before commencing work on the 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 must register for course MRS 599 “Research Guidance and 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.

Time Line

Completion of the Masters Degree in Migration and Refugee Studies will normally take 2 years.

Graduate Diploma

Forced Migration and Refugee Studies (Graduate Diploma)
Specialized Graduate Diploma in Forced 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) within the field of humanities and or Social Sciences and meet the university’s language proficiency exam.

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 507 - Introduction to Forced Migration and Refugee Studies (3 cr.)
- MRS 518 - International Refugee Law (3 cr.)
- MRS 576 - Methods of Research with Forced Migrants & Refugees: Issues in Forced Migration (3 cr.)
- MRS 512 - Psychosocial Issues in Forced Migrants (3 cr.)

One elective must be chosen from the CMRS list of electives offered each semester. One elective can be chosen from the LAW department from among the following International Human Rights courses:

- LAW 514 - Human Rights in the Middle East (3 cr.)
- LAW 516 - Economic, Social, and Cultural Rights (3 cr.)
- LAW 519 - Human Rights in Africa (3 cr.)

Time Line

Completion of the Graduate Diploma in Forced Migration and Refugee Studies will normally take 1 year. It does not require the completion of a thesis. Students who finish the diploma can develop it into an MA by taking the two extra required courses of the MA program and complete a thesis.

Psychosocial Interventions for Forced Migrants and Refugees (Graduate Diploma)

Specialized Graduate Diploma in Psychosocial Intervention for Forced Migrants and Refugees

The diploma is offered by the Center for Migration and Refugee Studies (CMRS) in collaboration with the Psychology unit of the SAPE department.

Admission
Applicants seeking admission to the Graduate diploma in - Psychosocial Intervention for forced migrants and refuges should have an undergraduate degree of high standing (no less than a GPA of 3.00) within the field of humanities and/or Social Sciences and meet the university’s language proficiency exam. Pre-requisites may be assigned, depending on the student’s academic background. Students with related work, research or volunteer experience will be given priority.

Applicants must display through a written personal statement in their applications the following traits: leadership, compassion, cultural sensitivity, social responsibility, emotional maturity, good mental health, and ethical standards. Recommendation letters will be required.

Graduates of this new specialized 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. These interventions can be implemented during and after emergencies in urban, rural or camp locations. They will include but not be limited to the provision of humanitarian aid and psychosocial support, facilitation of psycho-education and support for families and groups, community and child focused activities in support of psychosocial well-being, advocacy, referral, protection, psycho-education and peace building.

Course Requirements

The specialized graduate diploma in applied psychosocial intervention requires the successful completion of 6 courses with 19 credit hours. These will consist of 5 core courses, plus one elective. The practicum course:

- MRS 513 - Practicum in Psychosocial Interventions for Forced Migrants and Refugees (2 cr.)
  will be taken twice, once in the Fall and once in Spring; each semester will count for 2 credit hours.

**The remaining four core courses are:**
- MRS 507 - Introduction to Forced Migration and Refugee Studies (3 cr.)
- MRS 512 - Psychosocial Issues in Forced Migrants (3 cr.)
- PSYC 502 - Community Psychology and Systems Theory (3 cr.)
- MRS 514 - Psychosocial Interventions for Forced Migrants and Refugees (3 cr.)

The one elective can be selected based on student interests, with approval from the Director of the psychosocial program.

Time Line

The Graduate Diploma in Psychosocial Intervention 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. Students who finish the diploma can develop it into an MA by taking the MA required courses and completing a thesis.

On the other hand, following completion of the Graduate Diploma in Psychosocial Intervention for forced migrant and refugees, if a student wants to undertake the FMRS Diploma in refugee studies, he/she will need to take one or two courses only of the four core courses depending on the electives taken in the psychosocial diploma plus two electives of the FMRS diploma.

**Middle East Studies Program**

Director: R. Saad
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 (34 - 46 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 200 and 300-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, 400-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.

200 and 300-level course requirements (36 credits)

- ANTH 202 - Cultural Anthropology (3 cr.)
- ANTH 312 - Peoples and Cultures of the Middle East and North Africa (3 cr.)
- ARIC 246 - Survey of Arab History (3 cr.)
- ECON 201 - Introduction to Macroeconomics (3 cr.)
- ECON 215 - Economic History of the Modern Middle East (3 cr.)
- HIST 355 - State and Society in the Middle East, 1699-1914 (3 cr.)
- HIST 356 - State and Society in the Middle East, 1906-present (3 cr.)
- POLS 203 - Introduction to Political Science II (3 cr.)
- POLS 308 - Comparative Politics of the Middle East (3 cr.)
- SOC 303 - Social Movements (3 cr.)
- SOC 370 - Environmental Issues in Egypt (3 cr.)

Choose one of the following
ARIC 343 - Arab-Islamic Civilization in the Classic Age, 600-945 A.D. Credits: (3 cr.)
ARIC 336 - Studies in Ibn Khaldun (3 cr.)

**400-level course requirements (9 credits)**

In addition to the above courses, students are required to take three 400-level courses from the following list:

- ANTH 425 - Women, Islam and the State (3 cr.)
- ANTH 450 - Third World Development (3 cr.)
  OR ANTH 460 - Development Studies Seminar
- ARIC 439 - Islamic Law (3 cr.)
- ARIC 451 - Islamic Institutions (3 cr.)
- ARIC 454 - Modern Movements in Islam (3 cr.)
- ECON 415 - Seminar on Economic Development in the Middle East (3 cr.)
- HIST 412 - Selected Topics in Modern Egyptian History (3 cr.)
  OR HIST 462 - Selected Topics in the History of the Modern Middle East
- POLS 420 - Issues in Middle East Politics (3 cr.)
- POLS 423 - The Political Economy of Poverty and Inequality (3 cr.)
- POLS 442 - Environmental Politics (3 cr.)
- SOC 450 - Third World Development (3 cr.)
  OR SOC 460 - Development Studies Seminar

**Electives (29 -41 credits)**

Depending on the number of credit hours needed to complete the 120 stated above.

**Master of Arts**

**Middle East Studies (M.A.)**

Consistent with the mission of the School of Global Affairs and Public Policy, 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.

**Master of Arts**

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.

**Admission**
Students are normally admitted to the MA degree program in the fall only. The application deadline for fall 2011 is February 1 for application with a fellowship and April 1 for application without a fellowship. Students who are offered admission must indicate their intention to enroll by May 15 and pay a deposit to hold their place.

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 202.

Proficiency is tested by an examination administered by the Arabic Language Institute. 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 598 and 599. The following two courses are required:

- MEST 569 - A Critical Introduction to Middle East Studies (3 cr.)
- MEST 570 - Interdisciplinary Seminar in Middle East Studies (3 cr.)

Students must choose three of the following eight courses:

- An approved 400 or 500 level course in modern Arabic literature.
- ARIC 451 - Islamic Institutions (3 cr.)
- ARIC 542 - Seminar on the Nineteenth-Century Middle East (3 cr.) /HIST 542
- ECON 511 - Economic Development in Middle East Countries (3 cr.)
- GWST 501 - Approaches to Middle East/ North Africa Gender and Women’s Studies (3 cr.)
- LAW 505 - Islamic Law Reform (3 cr.)
- POLS 535 - Middle East Politics (3 cr.)
- SOC/ANTH 503 - Middle Eastern Societies and Cultures (3 cr.)

Note

The other five courses (or three for thesis writers) may be selected from 400 or 500 level courses related to the Middle East in Anthropology/Sociology, Arabic Studies, Economics, Gender and Women's Studies, History, Law, Middle East Studies and Political Science. No more than two 400 level courses may be counted towards the degree and only one course originally at the 400 level but for which requirement are added to raise it to 500 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

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 102.

Courses

Five courses are required for the Diploma, from at least three departments. Students can take a maximum of two courses at the 400 level. Students must take three of the following courses:

- ARIC 451 - Islamic Institutions (3 cr.)
- ARIC 543 - Seminar on the Twentieth-Century Middle East (3 cr.)
  or HIST 543
- ECON 511 - Economic Development in Middle East Countries (3 cr.)
- MEST 569 - A Critical Introduction to Middle East Studies (3 cr.)
- POLS 535 - Middle East Politics (3 cr.)
- SOC/ANTH 503 - Middle Eastern Societies and Cultures (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 or Anthropology/Sociology.

Prince Alwaleed Bin Talal Bin Abdulaziz Alsaud Center for American Studies and Research
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. The program is staffed and supervised by members of several departments. Students are required to take ECLT/HIST 209 (Introduction to American Studies), at least one other American history course, and three other courses as electives from among courses offered in American literature, history, and philosophy, or from among courses on American issues and topics in anthropology, art, music, film, theater, history, sociology, psychology, and political science. Courses listed under the heading "Selected Topics" may be included if the focus is the United States and the Americas.

Requirements:

- ECLT 209 - Introduction to American Studies (3 cr.)

And at least four of the following:

- ANTH 384 - Peoples and Cultures of Latin America (3 cr.)
- ANTH 390 - Selected People and Culture Areas (3 cr.)
  See footnote one.
- ANTH 400 - Selected Topics in Anthropology (3 cr.)
  See footnote one.
- ARTV 370 - Selected Topics in Art (3 cr.)
  See footnote one.
- ECLT 308 - Modern European and American Literature (3 cr.)
- ECLT 310 - American Literature to 1900 (3 cr.)
  /AMST 310
- ECLT 311 - Modern American Literature (3 cr.)
  /AMST 311
- ECLT 344 - Literature and Philosophy (3 cr.)
  See footnote one.
- ECLT 347 - Selected Topics (3 cr.)
  See footnote one.
- ECLT 540 - Readings in American Literature (3 cr.)
  See footnote two
- ECLT 545-546 - Selected Topics (3 cr.)
  See footnote two
- FILM 370 - Selected Topics in Film (3 cr.)
  See footnote one and footnote two.
• HIST 201 - History of American Civilization to the Nineteenth Century (3 cr.)
• HIST 202 - History of Modern American Civilization (3 cr.)
• HIST 309 - History of American Political Thought (3 cr.)
• HIST 401 - Selected Topics in the History of the United States (3 cr.)
• MUSC 370 - Selected Topics in Music (3 cr.)
  See footnote one.
• PHIL 356 - American Philosophy (3 cr.)
• POLS 303 - American Government and Politics (3 cr.)
• POLS 415 - U.S. Foreign Policy (3 cr.)
• POLS 430 - Seminar: Special Topics in Political Science (3 cr.)
  See footnote one.
• POLS 473 - Special Topics in Public Law (3 cr.)
  See footnote one.
• SOC 307 - Social Class and Inequality (3 cr.)
  See footnote one.
• SOC 321 - The Urban Experience (3 cr.)
  See footnote one.
• SOC 332 - Social Constructions of Difference: Race, Ethnicity, and Class (3 cr.)
  See footnote one.
• SOC 400 - Selected Topics in Sociology (3 cr.)
  See footnote one.
  See footnote one.
• SOC 402 - Independent Study (3 cr.)
  See footnote one.
• SOC 405 - Sociology of Work (3 cr.)
  See footnote one.
• SOC 408 - Criminology (3 cr.)
  See footnote one.
• THTR 370 - Selected Topics in Theatre (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 Arab and Islamic Civilizations

Department of Arab and Islamic Civilizations
School of Humanities and Social Sciences

Professor Emeritus: H. Sakkout, M. El Rabie, G. Scanlon
Distinguished University Professor: N. Hanna (Chair)
Professors: B. O’Kane, M. Serag, M. Mikhail, S. Mehrez, S. Fadl
Associate Professor Emeriti: E. Sartain, H. Lutfi
Associate Professors: E. Fernandes, N. El Naggar, M. Birairi, H. Hammoudah
Assistant Professors: A. ElBindary, C. Gomez, S. Ahmad, E. kenney

Bachelor of Arts

Arabic Studies, with specializations in Arabic literature,
Middle Eastern History and Islamic Art and Architecture (B.A.)

The department of Arab and Islamic Civilizations provides a multi-disciplinary framework for the study of the history and culture of the Middle East since the rise of Islam. It seeks to explain the thought, movements, processes, institutions and identities of Arab-Islamic civilization. These include but are not limited to aesthetic and intellectual production, political and religious thought, cross-cultural interaction, commerce and economic relations, government, and social, political and religious loyalties. The study and appreciation of these fields forms an important part of the university’s mission to give students greater awareness and appreciation of the heritage of the Middle East.

Bachelor of Arts

The objective of the Bachelor of Arts is to develop a broad awareness of Arab-Islamic civilization and to develop in students the ability to examine critically the different aesthetic, intellectual and cultural components of this civilization. Each student is required to fulfill Arabic language requirements and take a common core of courses from Arabic Literature, Islamic Studies, Middle Eastern History and Islamic Art and Architecture. Students should find opportunities in any line of work where knowledge of Middle Eastern culture or analytical and communication skills are important.

A total of 120 credits is required for the degree in Arabic Studies.

Language Requirements

Students must demonstrate their proficiency in Arabic at the advanced level, either by completing ALNG 312 or its equivalent, or by taking a proficiency test, or by holding the Thanawiya ‘Amma. Students must reach this level of proficiency before their senior year. The department may give permission for deferral until the senior year in exceptional cases. However, students should note that advanced-level proficiency is a prerequisite for enrollment in certain Arabic literature courses, as described below. Students who are required to take Arabic language proficiency courses may use a maximum of 15 hours of their elective credits to take language courses in Intermediate or Advanced Arabic. Elementary Arabic courses may not be taken for credit.

Students should have the Thanawiya ‘Amma certificate, evidence of advanced-level proficiency or consent of instructor before enrolling in any Arabic literature course which is taught in Arabic, or in ARIC 317 and 417, for which the readings are in Arabic.

Core Curriculum (34-46 credits)

ARIC majors must fulfill their Core Curriculum Arab History and Arabic Literature requirements by taking any 300-level Arabic literature course and any Middle Eastern history course from the core curriculum list other than ARIC 343.
They should take the introductory 200-level courses required by their major before fulfilling their Core Curriculum requirements.

Concentration requirements (48 credits)

All students must take 24 credit hours as follows:

Arabic literature (6 credits)

EITHER

- ARIC 201 - Introduction to Classical Arabic Literature (3 cr.)
- ARIC 202 - Introduction to Modern Arabic Literature (3 cr.)

OR

- ARIC 203 - Classical Arabic Literature in Translation (3 cr.)
- ARIC 204 - Modern Arabic Literature in Translation (3 cr.)

Middle Eastern history (6 credits)

- ARIC 246 - Survey of Arab History (3 cr.)
- ARIC 343 - Birth of Muslim Community and Rise of the Arab Caliphates (3 cr.)

Islamic Studies (6 credits)

- ARIC 335 - An Introduction to Islam (3 cr.)
- ARIC 435 - Studies in the Qur'an (3 cr.)

Islamic Art and Architecture (6 credits)

- ARIC 206 - Art and Architecture of the City of Cairo (3 cr.)
- ARIC 270-271 - Introduction to Islamic Art and Architecture (3 cr. per semester)

Additional Requirements

Each student must take another 24 credits of ARIC courses, chosen with the help of the advisor. These must include two additional 400-level courses.

Specializations

Students may, if they wish, take a specialization in Middle Eastern History or in Arabic Literature.

Specialization in Middle Eastern History
Students who wish to specialize in this field must take a minimum of 18 of these 24 credits in Middle Eastern history, medieval and modern. These must include two 400-level courses, and at least one course on modern Middle Eastern history. Students may choose from among the following courses offered by the Department of Arab and Islamic Civilizations (ARIC) and by the Department of History (HIST):

- ARIC 320 - Introduction to Sufism (3 cr.)
- ARIC 321 - Social and Cultural History of the Middle East, 600-1800 A.D. (3 cr.)
- ARIC 322 - Land, Trade and Power: a History of Economic Relations in the Middle East, 600-1800 A.D. (3 cr.)
- ARIC 323 - Marriage and the Family in the Medieval and Early Modern Middle East (3 cr.)
- ARIC 324 - Non-Muslim Communities in the Muslim World (3 cr.)
- ARIC 336 - Studies in Ibn Khaldun (3 cr.)
- ARIC 344 - Caliphs and Sultans in the Age of Crusades and Mongols (3 cr.)
- ARIC 345 - Gunpowder Empires: Ottomans, Safavids and Mughols (3 cr.)
- ARIC 353 - Muslim Political Thought (3 cr.)
- ARIC 360 - Selected Topics in Middle Eastern History, 600-1800 AD (3 cr.)
- ARIC 404 - Sira, Hadith, and Tafsir (3 cr.)
- ARIC 439 - Islamic Law (3 cr.)
- ARIC 440 - Arabic Historical Literature (3 cr.)
- ARIC 451 - Islamic Institutions (3 cr.)
- ARIC 460 - Selected Topics in Middle Eastern History, 600-1800 AD (3 cr.)
- ARIC 463 - Selected Topics in the History of Islamic Thought and Institutions (3cr.)
- HIST 355 - State and Society in the Middle East, 1699-1914 (3 cr.)
- HIST 356 - State and Society in the Middle East, 1906-present (3 cr.)
- HIST 454 - Modern Movements in Islam (3 cr.)
- HIST 462 - Selected Topics in the History of the Modern Middle East (3 cr.)

**Specialization in Arabic Literature**

Students who wish to specialize in this field must take a minimum of 18 of these 24 credits in Arabic literature, chosen from the list below. It is expected that these courses will be taken in Arabic. However, a student may take up to two Arabic literature courses taught in English, on condition that he/she reads the assigned texts in Arabic. In such cases, the course will be registered for that student under the rubric ARIC 317 or 417, Special Studies in Arabic Texts, as appropriate.

- ARIC 305 - Arabic Literature and Gender (3 cr.)
- ARIC 306 - Arabic Literature and Film (3 cr.)
- ARIC 307 - The Writer and the State (3 cr.)
- ARIC 308 - Colloquial and Folk Literature (3 cr.)
- ARIC 309 - Selected Themes and Topics in Arabic Literature (3 cr.)
- ARIC 310 - Selected Themes and Topics in Arabic Literature in Translation (3 cr.)
- ARIC 314 - The Arabic Novel (3 cr.)
- ARIC 315 - Arabic Drama (3 cr.)
- ARIC 316 - The Arabic Short Story (3 cr.)
- ARIC 401 - Senior Seminar in Arabic Texts (3 cr.)
- ARIC 402 - Senior Seminar in Arabic Literature in Translation (3 cr.)
- ARIC 403 - Arabic Literary Criticism (3 cr.)

**Electives (26 - 38 credits)**
Depending on the number of credits needed to complete the 20 credits, the student is strongly advised to use some of their electives to take a suitable minor or minors. As stated above, he/she may use up to 15 credit hours to satisfy Arabic language requirements for the ARIC degree.

Specialization in Islamic Art and Architecture

In addition to the Islamic Art and Architecture courses (ARIC 206 and ARIC 270) stipulated in the Arabic Studies core requirements, the students must take an additional 8 courses (24 credit hours), of which two must be of the 400-level, from among the following:

- ARIC 270-271 - Introduction to Islamic Art and Architecture (3 cr. per semester)

7 courses (21 credit hours) from among the following courses:

- ARIC 368 - The Art of the Book in the Islamic World (3 cr.)
- ARIC 369 - Islamic Pottery (3 cr.)
- ARIC 370 - Pre-Islamic Influences on Islamic Art and Architecture (3 cr.)
- ARIC 371-372 - Islamic Architecture in Egypt and Syria (3 cr. per semester)
- ARIC 464 - Islamic Art and Architecture in India and Pakistan (3 cr.)
- ARIC 465-466 - Islamic Architecture in Turkey, Persia and Central Asia (3 cr.)
- ARIC 467 - Islamic Architecture in Spain and North Africa (3 cr.)
- ARTV 314 - Modern and Contemporary Architecture (3 cr.)
- EGPT 361 - Art and Architecture of Ancient Egypt I (3 cr.)
- EGPT 362 - Art and Architecture of Ancient Egypt II (3 cr.)

Notes:

In addition to the core and specialization requirements an additional 26-38 credit hours can be devoted to electives.

Minors

Arab and Islamic Civilizations Minor

Requirements (15 credits):

Any five courses offered by the department (ARIC).

Arabic Literature Minor

Program Requirements (15 credits):

5 courses in Arabic or English from the following, depending on the student’s area of interest:

- ARIC 305 - Arabic Literature and Gender (3 cr.)
- ARIC 306 - Arabic Literature and Film (3 cr.)
- ARIC 307 - The Writer and the State (3 cr.)
Classical/Medieval Islamic History Minor

Requirements (15 credits):

5 courses from the following, depending on the student’s area of interest:

- ARIC 320 - Introduction to Sufism (3 cr.)
- ARIC 321 - Social and Cultural History of the Middle East, 600-1800 A.D. (3 cr.)
- ARIC 322 - Land, Trade and Power: a History of Economic Relations in the Middle East, 600-1800 A.D. (3 cr.)
- ARIC 323 - Marriage and the Family in the Medieval and Early Modern Middle East (3 cr.)
- ARIC 324 - Non-Muslim Communities in the Muslim World (3 cr.)
- ARIC 336 - Studies in Ibn Khaldun (3 cr.)
- ARIC 343 - Birth of Muslim Community and Rise of the Arab Caliphates (3 cr.)
- ARIC 344 - Caliphs and Sultans in the Age of Crusades and Mongols (3 cr.)
- ARIC 345 - Gunpowder Empires: Ottomans, Safavids and Mughols (3 cr.)
- ARIC 353 - Muslim Political Thought (3 cr.)
- ARIC 440 - Arabic Historical Literature (3 cr.)
- ARIC 451 - Islamic Institutions (3 cr.)
- ARIC 460 - Selected Topics in Middle Eastern History, 600-1800 AD (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 206 - Art and Architecture of the City of Cairo (3 cr.)
- ARIC 270-271 - Introduction to Islamic Art and Architecture (3 cr. per semester)

Two of the following:

- ARIC 370 - Pre-Islamic Influences on Islamic Art and Architecture (3 cr.)
- ARIC 371-372 - Islamic Architecture in Egypt and Syria (3 cr. per semester)
- ARIC 465-466 - Islamic Architecture in Turkey, Persia and Central Asia (3 cr.)
Islamic Studies Minor

The minor is designed for students, particularly those coming from abroad, who wish to gain a deeper knowledge and appreciation of Islam as a culture.

Requirements (15 credits):

- ARIC 404 - Sira, Hadith, and Tafsir (3 cr.)
- ARIC 435 - Studies in the Qur'an (3 cr.)
- ARIC 451 - Islamic Institutions (3 cr.)

And two of the following:

- ARIC 336 - Studies in Ibn Khaldun (3 cr.)
- ARIC 353 - Muslim Political Thought (3 cr.)
- ARIC 354 - Islamic Philosophy (3 cr.)
- ARIC 454 - Modern Movements in Islam (3 cr.)
- ARIC 463 - Selected Topics in the History of Islamic Thought and Institutions (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 department of Arab and Islamic Civilizations (ARIC) offers Master's degrees in Arabic Studies with emphases in four fields: Islamic Art and Architecture, Middle Eastern History, Islamic Studies, Arabic Language and Literature. The degree 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. Middle Eastern History
4. Islamic Studies

Courses

The student must take a minimum of eight courses in his/her area of specialization.

These must include
For Arabic Language and Literature specialization

Choose one of the following:

- ARIC 504 - Seminar on a Selected Work or Author in Classical Arabic Literature (3 cr.)
  OR
- ARIC 507 - Seminar on Modern Arabic Literature: Nineteenth Century (3 cr.)
- ARIC 508 - Seminar on Modern Arabic Literature: Twentieth Century (3 cr.)

For Islamic Art and Architecture specialization

Choose one of the following:

- ARIC 575-576 - Special Studies in Islamic Art and Architecture (3 cr.)

For Islamic Studies Specialization

Choose one of the following:

- ARIC 435 - Studies in the Qur'an (3 cr.)
  Or
- ARIC 525 - Seminar on Selected Topics in Sira or Hadith (3 cr.)

Students may also choose one of the following:

- ARIC 526 - Seminar on Selected Topics in Islamic Law and Legal Theory (3 cr.)
  Or
- ARIC 527 - Selected Topics in Islamic Theology, Sufism or Philosophy (3 cr.)

For Middle Eastern History specialization

Choose one of the following:

- ARIC 530 - Seminar on a Selected Topic in Medieval Arab/Islamic History, 600-1800 A.D. (3 cr.)
  OR
- ARIC 542 - Seminar on the Nineteenth-Century Middle East (3 cr.)
  OR
- ARIC 543 - Seminar on the Twentieth-Century Middle East (3 cr.)

Additional Requirements

A maximum of two 400-level courses may be taken as part of the M.A. program. 300 and 400 level courses may be taken at the 500 level in which case extra readings and research will be required of the graduate student. See below:

- ARIC 510-511 - Special Studies in Classical Arabic Literature (3 cr.)
- ARIC 512-513 - Special Studies in Modern Arabic Literature (3 cr.)
- ARIC 521-522 - Special Studies in Islamic Thought and Institutions (3 cr.)
- ARIC 560 - 561 - Special Studies in Middle Eastern History (3 cr.)
- ARIC 575-576 - Special Studies in Islamic Art and Architecture (3 cr.)
Notes:

Subject to departmental approval, up to two courses may be taken outside the area of specialization.

Courses on 19th - 20th century Middle Eastern history are taught by the Department of History.

Admissions

The history unit has a preference for applicants who already have some academic background in Arabic and Islamic studies and who have studied the Arabic language at the university level for at least one year.

Language

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 201 by test. The student whose degree concentration is history must reach the ALNG 303 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 three branches of the master of arts in Arabic studies. The thesis must be written in English and submitted in accordance with university regulations.

Department of English & Comparative Literature

Department of English and Comparative Literature
School of Humanities and Social Sciences

Professors: F. Ghazoul (Chair), J. Rodenbeck (Emeritus), D. Shoukri (Emerita)
Associate Professor: W. Melaney
Assistant Professors: I. Dworkin, V. Kotini, A. Motlagh, N. C. Mujahid

Bachelor of Arts

English and Comparative Literature (B.A.)

Bachelor of Arts

The program in English and Comparative Literature provides the undergraduate student with an understanding of the role which literature plays in presenting men and women with images of themselves, their society, and their culture and introduces them to the different questions and answers which literature has given to the central problems of human experience.
To major in English and Comparative Literature students must have taken at least one ECLT course with not less than a C grade and be registering for the required program of the major.

A total of 120 credits is required for the bachelor’s degree in English and comparative literature:

**Core Curriculum (34-46 credits)**

**Concentration Requirements (42 credits)**

- ECLT 200 - Introduction to Literature (3 cr.)
  OR
- ECLT 202 - Global Literature in English (3 cr.)

- ECLT 201 - Survey of British Literature (3 cr.)

- ECLT 301 - Medieval Literature (3 cr.)
  Or
- ECLT 409 - Greek Classics in Translation (3 cr.)
  Or
- ECLT 410 - Classics of the Ancient World (3 cr.)

- ECLT 302 - Literature of the Renaissance (3 cr.)
  Or
- ECLT 303 - Seventeenth-Century Literature (3 cr.)
  Or
- ECLT 360 - Shakespeare (3 cr.)

- ECLT 304 - Eighteenth-Century Literature (3 cr.)
  Or
- ECLT 305 - Romanticism (3 cr.)
  Or
- ECLT 306 - Nineteenth-Century European Literature (3 cr.)

- ECLT 308 - Modern European and American Literature (3 cr.)
  Or
- ECLT 348 - Contemporary Literature (3 cr.)
•
  •  ECLT 310 - American Literature to 1900 (3 cr.)
    Or
  •  ECLT 311 - Modern American Literature (3 cr.)

•
  •  ECLT 411 - History of Literary Criticism (3 cr.)
  •  ECLT 412 - Modern Literary Criticism (3 cr.)

Three additional courses to be chosen from the following courses (9 credits):

•  ECLT 209 - Introduction to American Studies (3 cr.)
  /HIST 209
•  ECLT 330 - Literature and Cinema (3 cr.)
•  ECLT 332 - World Literature (3 cr.)
•  ECLT 333 - African Literature (3 cr.)
•  ECLT 344 - Literature and Philosophy (3 cr.)
•  ECLT 345 - Literature and Gender (3 cr.)
•  ECLT 346 - Third World Literature (3 cr.)
•  ECLT 347 - Selected Topics (3 cr.)
•  ECLT 352 - Recurrent Themes in Literature (3 cr.)
•  ECLT 353 - Modern Drama (3 cr.)
•  ECLT 370 - Creative Writing (3 cr.)
•  ECLT 447 - Capstone Seminar: Selected Topics (3 cr.)

Any two Additional ECLT courses (6 cr.)

Collateral Requirements (3 credits)

One course in 300- or 400-level Arabic Literature (in Arabic or in translation).

Electives (29-41 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 100-level courses.

Master of Arts

English and Comparative Literature (M.A.)

Admission

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 on the TOEFL with TWE that their command of English is adequate for study in the program.

Courses

A minimum of twenty-four graduate hours is required. Eight courses must be taken at the 500 level. All students admitted to the graduate program will be required during their first year to take ECLT 506 "Greek Classics and Translation", ECLT 508 "The History of Literary Criticism", ECLT 509 "Modern Literary Criticism", and ECLT 555 "Research Methods in Literature", unless they have taken these courses at the undergraduate 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.

Comprehensive Examination

All candidates for the master’s degree will be required to sit for a qualifying examination after completing six courses in the department. The exam will be both written and oral. The exam will cover a list of 30 books, to be submitted by the student one month in advance, and will be prepared in consultation with the adviser. The list must be approved by the student’s adviser and the department chair. Selection will be made from the major periods of Western literature and should include selections from poetry, drama, and prose. If the exam is failed, it may be repeated once. The student will not be permitted to write a thesis until the exam is passed.

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 European 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 will have a choice of four graduate courses in ECLT and two graduate courses in specified Departments/Programs of HUSS.

- 1 ECLT course in Period/Genre/Theme/Author. 3 cr.
- 1 ECLT course in Literary Criticism/Hermeneutics/Philosophical Dimension of Literature. 3 cr.
- 2 ECLT courses in Selected Topics in Comparative Literature. 6 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
  - Forced Migration and Refugee Studies
Department of History

Department of History
School of Humanities and Social Sciences

Professor: J. Edwards, K. Fahmy (Chair), N. Gallagher
Associate Professors: D. Blanks, M. Reimer
Assistant Professors: P. Ghazaleh, H. Kholoussy, M. Tokic, S. Seikaly
Visiting Professor: Z. Abul-Magd

The study of history lies at the foundation of a liberal education. It teaches crucial intellectual and analytical skills, and develops communicative 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

AUC's history major covers a range of European, American and Middle Eastern topics, and allows students the flexibility to develop and pursue their own interests. All courses develop in students an appreciation of the richness, complexity, and diversity of past civilizations, allowing them to examine the human experience in its fullest dimensions. The program as a whole gives students appropriate historical, academic and personal competencies, develops their intellectual sophistication, and provides a solid foundation for their future lives, preparing them for a wide variety of subsequent careers, from law or diplomacy to journalism or business.

A total of 120 credits is required for a bachelor's degree in History.

Core Curriculum (34-46 credits)

Concentration Requirements (36 credits)

- HIST 420 - Historical Theory and Methodology (3 cr.)

Eleven additional history courses,

1. of which at least eight must be above the 200 level
2. including at least two courses in three of the four following areas:
   a. The history of the Middle East
   b. The history of Europe
c. The history of the United States

d. Comparative Religion courses that are cross-listed as history courses

Students must consult with their advisors to ensure that their courses provide an appropriate coverage of different historical periods.

Electives:

38-50 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 pursue their research by choosing from a selection of courses on various aspects of the subject both past and present.

Requirements (15 credits):

- CREL 210 - Religions of the World (3 cr.)

Any two other CREL courses (6 credits)

Either two further CREL courses or any two of the following courses (6 credits):

- ANTH 422 - Religion in a Global World (3cr.)
- ARIC 320 - Introduction to Sufism (3 cr.)
- ARIC 324 - Non-Muslim Communities in the Muslim World (3 cr.)
- ARIC 335 - An Introduction to Islam (3 cr.)
- EGPT 440 - Ancient Egyptian Religion and Ethics (3 cr.)
- EGPT 445 - Selected Topics in Coptic Studies (3 cr.)
- PHIL 226 - Philosophy of Religion (3 cr.)

Notes:

With the approval of the CREL advisor, other 300 or 400 level courses on Islam from ARIC, HIST, POLS 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 100-level courses.

**Department of the Arts**

**Department of the Arts**
**School of Humanities and Social Sciences**

*Professor: M. Khouri* (Chair of the Department of the Arts)

**Visual Cultures Program**

**Visual Art**

*Professor: B. Ferguson* (Dean of the School of Humanities and Social Sciences)

*Assistant Professors:* A. Deebi (Director of Visual Cultures Program), A. Lenssen

*Associate Professor of Practice:* S. El Noshokaty

**Film**

*Professor: M. Khouri* (Chair)

*Assistant Professor:* N. Jouanovic

**Graphic Design**

*Associate Professor of Practice:* B. Shehab

**Music**

**Music Performance**

Associate Professor: J. Baboukis (Director of Music Program)

Assistant Professor: C. Green

**Music Technology**

*Assistant Professor:* W. El-Mahallawy (Director of the Institute for Music Technology)

**Theatre**

*Professors:* S. Campbell, M. El Lozy (Director of Theatre Program/ Artistic Director)

*Associate Professors:* J. Arnold, F. Bradley
Visiting Assistant Professor: D. Bassiouny
Associate Professor of Practice: M. Mineart

Bachelor of Arts

Film (B.A.)

Bachelor of Arts in Film

Since its early days, cinema has been one of the most influential art forms of the twentieth century. Uniquely situated in the “film” city of Cairo, the major in film integrates professional film production training with the study of the historical and theoretical nature of the medium. Another critical component of the degree is studying the dynamics of cinema as a complex cultural, economic, and industrial practice. In conjunction with this academic and professional framework, the degree also provides a balanced consideration of international, regional and local facets of the subject. The curriculum covers the following areas: the development of cinema as an art form; the impact of cinema on culture and society; the historical, thematic and stylistic trends within Egyptian and Arab cinemas; the development of the theoretical and practical background and appreciation of the art of filmmaking; Aesthetic techniques used in production; and the relationship between cinema and the increasingly mediated visual cultures of the world.

Major Requirements

A total of 120 credits are required for the bachelor’s degree in Film:

Core Curriculum (34-46 credits)

Concentration Requirements (15 credits)

- FILM 200 - Analogue and Digital Practices (3 cr.)
- FILM 213 - Introduction to Visual Cultures (3 cr.)
- FILM 220 - Introduction to Film (3 cr.)
- FILM 320 - Cinema in Egypt and the Arab World (3 cr.)
- FILM 330 - Film Theory and Criticism (3 cr.)

Additional Requirements (39 credits)

1. Film Theory and Aesthetics, choose FOUR:

- FILM 310 - History of World Cinema (3 cr.)
- FILM 340 - Documentary Film (3 cr.)
- FILM 341 - Anthropology and Film (3 cr.)
- FILM 360 - The Filmmaker (3 cr.)
- FILM 370 - Selected Topics in Film (3 cr.)
- FILM 390 - Film Genres (3 cr.)
- FILM 402 - Independent Study (1-3 cr.)
• FILM 470 - Advanced Seminar in Film Study and Research (3 cr.)

2. Film Production, choose FIVE:

• FILM 351 - Digital Editing (3 cr.)
• FILM 353 - Digital Cinematography (3 cr.)
• FILM 357 - Screenwriting (3 cr.)
• FILM 450 - Senior Film Project (3 cr.)
• ARTV 204 - Introduction to Time-Based Media (3 cr.)
• ARTV 230 - Introduction to Digital Photography (3 cr.)
• DSGN 335 - Animation (3 cr.)
• MUSC 334 - Music Production for Visual Media (3 cr.)
• MUSC 336 - Sound for Picture Production (3 cr.)
• MUSC 337 - Music for Film (3 cr.)
• THTR 204 - Introduction to Technical Theatre (3 cr.)
• THTR 225 - Acting I (3 cr.)
• THTR 324 - Design for the Theatre (3 cr.)

3. Film as Cultural Industry, choose FOUR:

• FILM 352 - The Film Industry (3 cr.)
• FILM 354 - Film Audience and Reception (3 cr.)
• FILM 370 - Selected Topics in Film (3 cr.)
• FILM 452 - The Arab and Egyptian Film Industries: National and Global Perspectives (3 cr.)
• FILM 456 - Experiential Learning in Film (3 cr.)
• FILM 470 - Advanced Seminar in Film Study and Research (3 cr.)

Collateral Requirements (9 credits)

Choose THREE:

• ANTH 202 - Cultural Anthropology (3 cr.)
• ARIC 306 - Arabic Literature and Film (3 cr.)
• ECLT 411 - History of Literary Criticism (3 cr.)
• JRMC 420 - Media Management (3 cr.)
• MUSC 331 - Music Production Using Protools I (3 cr.)
• PHIL 310 - Philosophy and Art (3 cr.)
• SOC 306 - Sociology of Literature (3 cr.)
• THTR 203 - The Art of the Theatre (3 cr.)

Electives (22-28 credits)

Graphic Design (B.A.)

Bachelor of Arts in Graphic Design
A program in Graphic Design prepares students for a wide range of professional options. Publications, branding, web and broadcast design, exhibition, and type design are all possible career paths. The program has theory and studio courses that will enable the design student to integrate a good command of visual language with conceptual work, theory, and technology.

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 Art school workshops and labs. The classes will be taught by a group of accomplished faculty supported by visiting faculty and guest lectures. Students will create work that is uniquely theirs helping them to build a portfolio from which they can build their careers.

**Major Requirements**

A total of 120 credits are required for the bachelor’s degree in Graphic Design.

**Core Curriculum (34-46 credits)**

**Concentration Requirements (27 Credits)**

- DSGN 200 - Analogue and Digital Practices (3 cr.)
- DSGN 201 - Design I (3 cr.)
- DSGN 210 - Typography I (3 cr.)
- DSGN 213 - Introduction to Visual Cultures (3 cr.)
- DSGN 215 - History of Graphic Design (3 cr.)
- DSGN 250 - Digital Practice I (3 cr.)
- DSGN 420 - Production for Designers (3 cr.)
- DSGN 469 - Senior Project Thesis (3 cr.)
- DSGN 470 - Senior Project Practice (3 cr.)

**Additional requirements (27 credits)**

1. **Professional Practice, Choose FOUR:**

- DSGN 202 - Design II: Logo and Corporate Identity (3 cr.)
- DSGN 303 - Design III: Publication (3 cr.)
- DSGN 304 - Design IV: Packaging (3 cr.)
- DSGN 305 - Design V: Retail Design (3 cr.)
- DSGN 320 - Typography II (3 cr.)
- DSGN 330 - Typography III (3 cr.)
- DSGN 365 - Advertising and Branding (3 cr.)

2) **Technical Practice, Choose THREE:**

- DSGN 240 - Color (3 cr.)
- DSGN 245 - Illustration (3 cr.)
- DSGN 313 - Web Design (3 cr.)
- DSGN 335 - Animation (3 cr.)
3. History and Theory, choose TWO:

- DSGN 315 - History of Graphic Design in the Arab world (3 cr.)
- DSGN 317 - History of Advertising in the Arab World (3 cr.)
- DSGN 318 - History of Arabic Calligraphy (3 cr.)
- ARIC 368 - The Art of the Book in the Islamic World (3 cr.)

Elective (20-32 credits)

Music Technology (B.A.)

The mission of the Music Program is to teach the theory, literature, and performance of music, and the theory and practice of music technology, to the highest attainable standard in the context of a liberal arts environment, with an orientation towards performance and study in both Western and Arab music.

The program lays a special emphasis on two aspects of what musicians do which are of particular value to students, whether they aspire to a career in music, or only seek to broaden their understanding of the world by enrolling in one or two courses. First, all students who take private instruction in voice or an instrument will learn to sight-read musical notation fluently, and to comprehend what they hear. Second, in the classroom and studio, lessons, rehearsals, and performances, all students in the program are expected to conform to a professional standard: to be punctual and prepared, and to treat their colleagues, and the material to be studied or performed, with the respect that is their due.

Students who major in music may pursue either a Bachelor of Arts degree in music technology, or a Bachelor of Musical Arts (B.M.A.) degree in performance. The Bachelor of Arts in music technology is a liberal arts degree which prepares students for a career in sound engineering, i.e. music recording, editing, production, and broadcasting, or for graduate study in the field.

The Institute for Music Technology offers a sequence of courses in music recording, editing, and production, music for video and film, and electronic music. Such training is crucial not only to students interested in a career in these professions, but also to performers and teachers who need to create and edit demos and audition tracks, to use music files in web sites and other internet applications, or to prepare and market recordings of their own performances and compositions. The Institute for Music Technology is responsible for the recording studio, which is used both as a teaching space and for professional recording.

The Cairo Choral Society is a community chorus dedicated to the study, promotion, and performance of the great choral works in the Western musical tradition. It presents performances with a professional orchestra (the Cairo Festival Orchestra) and soloists at various venues in Cairo. The membership is voluntary, multinational, and cross-generational. The Cairo Choral Society was founded in 1983; in the fall of 2009 it became an ensemble-in-residence within the Department of the Arts. One of the leading large choral ensembles in Egypt, it is both a community-based organization and a for-credit course at AUC. Students may also participate in the chorus on a not-for-credit basis.

Bachelor of Arts
Requirements for the Concentration in Music Technology

In order to complete the Bachelor of Arts in music with a concentration in music technology, a student will

- Learn to read music, and acquire intermediate listening and sight-reading skills.
- Learn fundamental principles of music theory, both Western and Arab.
- Demonstrate the ability to play the piano at an intermediate level or better, and to use a keyboard as a tool for music data entry; more advanced students may also present part of a solo recital, in piano, some other instrument, or voice, with the permission of their teacher.
- Acquire a basic ability to compose and arrange using MIDI (“musical instrument digital interface,” the protocol for the transmission of music data between electronic musical instruments).
- Learn advanced techniques of recording, editing, mixing, and mastering with Protools and other editing software (Protools software is the industry standard for recording, composing, arranging, editing, and mixing digital music).
- Acquire an advanced understanding of the use of music events (i.e. MIDI and related technologies) using synthesizers and samplers.

A total of 120 credits are required for the bachelor’s degree in music with a concentration in music technology.

Core Curriculum (34–46 credits)

Concentration Requirements (45 credits):

Theory, Literature and Performance (18 credits):

- MUSC 220 - Introduction to Music (3 cr.)
- MUSC 240 - Western Music Theory I (3 cr.)
- MUSC 241 - Sight-Singing and Aural Skills I (1 cr.)
- MUSC 245 - Arab Music Theory I (3 cr.)
- MUSC 246 - Maqam I (Arab Music Sight-Singing and Aural Skills) (1 cr.)
  And MUSC 284, 285 Piano Proficiency (1 cr. each = 2 cr.)

One of the following:

- MUSC 342 - Music in the Arab Tradition (3 cr.)
- MUSC 360 - Music in the Western Tradition (3 cr.)

Two semesters of ensemble, chosen from among the following:

- MUSC 262/362 Arab Music Ensemble (1 cr.)
- MUSC 263/363 Guitar Ensemble (1 cr.)
- MUSC 264/364 Chamber Music Ensembles (1 cr.)
- MUSC 265/365 Practicum (1 cr.)
- MUSC 266/366 Chamber Singers (1 cr.)
- MUSC 267/367 Cairo Choral Society (1 cr.)

Music Technology (27 credits):

- MUSC 232, 332, 432 - Digital Audio / MIDI Lab (1 cr. each)
- MUSC 330 - Introduction to Music Technology (3 cr.)
- MUSC 331 - Music Production Using Protools I (3 cr.)
- MUSC 333 - Microphone Techniques (3 cr.)
- MUSC 334 - Music Production for Visual Media (3 cr.)
- MUSC 330 - Introduction to Music Technology (3 cr.)
- MUSC 331 - Music Production Using Protools I (3 cr.)
- MUSC 333 - Microphone Techniques (3 cr.)
- MUSC 334 - Music Production for Visual Media (3 cr.)
- MUSC 390 - Advanced Seminar (3 cr.)

Two additional courses, to be chosen from among the following:

- MUSC 335 - Electronic Music (3 cr.)
- MUSC 336 - Sound for Picture Production (3 cr.)
- MUSC 337 - Music for Film (3 cr.)
- MUSC 371 - Western and Arab Musical Instruments (3 cr.)
- MUSC 438 - Music Production Using Protools II (3 cr.)

Electives (29–41 credits)

Theatre (B.A.)

The Department of the Arts offers both a bachelor’s degree and a minor in theatre. The curriculum balances solid fundamental study of the literature, history, and theory of theatre with practical theatre experience in performance, directing, design, and technical theatre. The program offers a liberal arts approach to theatre study, an approach that aims at enriching the students' awareness of the role of theatre arts within society.

Performances

The department produces a season of fully-realized plays, sponsors student-directed plays, and hosts visiting productions in its three theatres, the Malak Gabr Theatre, Gerhart Theatre, and Black Box Theatre. The department offers students the opportunity to interact with internationally renowned guest artists who are brought to AUC to serve as directors, designers, and performers. Students who participate are eligible to receive course credit depending on the extent of their involvement.

Bachelor of Arts

Theatre majors follow a program of courses in dramatic literature, theory, and history; a program of studio courses (acting, directing, and design), and play an active role in the department's productions.

A total of 120 credits is required for the bachelor’s degree in theatre.

Core Curriculum (34-46 credits)
Concentration Requirements (45 credits)

- THTR 203 - The Art of the Theatre (3 cr.)
- THTR 204 - Introduction to Technical Theatre (3 cr.)
- THTR 225 - Acting I (3 cr.)
- THTR 230 - Play Analysis (3 cr.)
- THTR 324 - Design for the Theatre (3 cr.)
- THTR 328 - Directing I (3 cr.)
- THTR 340 - Advanced Theatre Practicum (3 cr.)
- THTR 350 - Survey of Dramatic Literature (3 cr.)
- THTR 351 - History of The Theatre (3 cr.)
- THTR 460 - Modern and Contemporary Drama (3 cr.)
- THTR 461 - Dramatic Theory and Criticism (3 cr.)
- THTR 490 - Senior Thesis (3 cr.)

Additional Requirements

Three credits from the following:

- THTR 240 - Production Practicum (1 cr. per production)
- THTR 242 - Rehearsal and Performance Practicum (1 cr. per production)

Two courses in the department to be chosen among the following:

- THTR 226 - Acting in Arabic I (3 cr.)
- THTR 227 - Acting II (3 cr.)
- THTR 326 - Acting in Arabic II (3 cr.)
- THTR 327 - Special Topics in Acting (3 cr.)
- THTR 344 - Design Practicum (3 cr.)
- THTR 360 - Playwriting I (3 cr.)
- THTR 361 - Playwriting II (3 cr.)
- THTR 428 - Directing II (3 cr.)
- THTR 495 - Senior Honors Project (3 cr.)

Collateral Requirements (9 credits):

Three courses chosen from the following:

- ANTH 202 - Cultural Anthropology (3 cr.)
- ARIC 315 - Arabic Drama (3 cr.)
- ECLT 360 - Shakespeare (3 cr.)
- ECLT 411 - History of Literary Criticism (3 cr.)
- FILM 220 - Introduction to Film (3 cr.)
- FILM 330 - Film Theory and Criticism (3 cr.)
- HIST 207 - World History (3 cr.)
• HIST 210 - Religions of the World (3 cr.)
• MUSC 220 - Introduction to Music (3 cr.)
• MUSC 360 - Music in the Western Tradition (3 cr.)
• PHIL 310 - Philosophy and Art (3 cr.)
• PSYC 327 - Theories of Personality (3 cr.)
• SOC 306 - Sociology of Literature (3 cr.)

Electives (11-25 credits):

The program will actively encourage its majors to work towards minors in fields such as anthropology, sociology, literature, music, art, political science, or business administration. Elective credits will be used for the minor.

Visual Arts (B.A.)

Bachelor of Arts in Visual Arts

The Visual Arts Major provides students with a space for creative practice in a cross-disciplinary environment that emphasizes theory, practice and cultural understanding. The program is founded on the belief that visual art is a fundamental force in Egypt and the region, especially in relation to post-revolution cultural environment.

We offer our students an experimental platform for creative freedom, critical thinking, and innovation. Students are encouraged to interrogate all ordinary ideas about contemporary visual art, and are challenged to expand and create critical self-awareness about their own work and establish an intellectual understanding of the issues and contexts that inform art practice in today’s local and global visual cultures.

Major Requirements

A total of 120 credits are required for the bachelor’s degree in Visual Arts:

Core Curriculum (34-46 credits)

Concentration requirements (27 credits)
ARTV 470 - Senior Project (B) (3 cr.)

Additional Requirements (21 credits)

Choose SEVEN:

- ARTV 201 - Introduction to Drawing (3 cr.)
- ARTV 202 - Introduction to Painting (3 cr.)
- ARTV 203 - Introduction to sculpture/Installation (3 cr.)
- ARTV 204 - Introduction to Time-Based Media (3 cr.)
- ARTV 205 - Introduction to Alternative Practices (3 cr.)
- ARTV 230 - Introduction to Digital Photography (3 cr.)
- ARTV 370 - Selected Topics in Art (3 cr.)
- ARTV 410 - Contemporary issues in Arab Art (3 cr.)
- DSGN 250 - Digital Practice I (3 cr.)

Collateral Requirements (6 credits)

Choose TWO:

- DSGN 315 - History of Graphic Design in the Arab world (3 cr.)
- FILM 352 - The Film Industry (3 cr.)
- FILM 354 - Film Audience and Reception (3 cr.)
- FILM 452 - The Arab and Egyptian Film Industries: National and Global Perspectives (3 cr.)
- FILM 456 - Experiential Learning in Film (3 cr.)
- FILM 470 - Advanced Seminar in Film Study and Research (3 cr.)

Elective (20-32 credits)

Bachelor of Musical Arts (B.M.A.)

Performance (B.M.A.)

The mission of the Music Program is to teach the theory, literature, and performance of music, and the theory and practice of music technology, to the highest attainable standard in the context of a liberal arts environment, with an orientation towards performance and study in both Western and Arab music.

The program lays a special emphasis on two aspects of what musicians do which are of particular value to students, whether they aspire to a career in music, or only seek to broaden their understanding of the world by enrolling in one or two courses. First, all students who take private instruction in voice or an instrument will learn to sight-read musical notation fluently, and to comprehend what they hear. Second, in the classroom and studio, lessons, rehearsals, and performances, all students in the program are expected to conform to a professional standard: to be punctual and prepared, and to treat their colleagues, and the material to be studied or performed, with the respect that is their due.

Students who major in music may pursue either a Bachelor of Arts degree in music technology, or a Bachelor of Musical Arts (B.M.A.) degree in Performance. The Bachelor of Musical Arts in Performance is a professional degree built on a liberal arts core which prepares students for a career in teaching or performance in voice or an instrument, or for graduate study in performance.
The Institute for Music Technology offers a sequence of courses in music recording, editing, and production, music for video and film, and electronic music. Such training is crucial not only to students interested in a career in these professions, but also to performers and teachers who need to create and edit demos and audition tracks, to use music files in web sites and other internet applications, or to prepare and market recordings of their own performances and compositions. The Institute for Music Technology is responsible for the recording studio, which is used both as a teaching space and for professional recording.

The Cairo Choral Society is a community chorus dedicated to the study, promotion, and performance of the great choral works in the Western musical tradition. It presents performances with a professional orchestra (the Cairo Festival Orchestra) and soloists at various venues in Cairo. The membership is voluntary, multinational, and cross-generational. The Cairo Choral Society was founded in 1983; in the fall of 2009 it became an ensemble-in-residence within the Department of the Arts. One of the leading large choral ensembles in Egypt, it is both a community-based organization and a for-credit course at AUC. Students may also participate in the chorus on a not-for-credit basis.

Bachelor of Musical Arts (B.M.A.)

Requirements for the Concentration in Performance

In order to complete the Bachelor of Musical Arts with a concentration in performance, a student will:

- Learn to read music fluently, and demonstrate advanced listening and sight-reading skills.
- Demonstrate the ability to play the piano at an intermediate level or better.
- Develop a significant understanding of Western and Arab music theory.
- Study representative great works of Western and Arab music literature and the composers who produced them.
- Demonstrate the ability to sing or play an instrument at or near a professional level; as a final project the student would present a solo recital.
- Sing in choir, and/or play in an instrumental ensemble.

Students who enter the concentration in performance must choose a primary instrument or voice, in which they must complete at least five semesters of private applied instruction, plus MUSC 492, the Capstone Solo Recital. In order to be accepted into the major, all students will be required to audition before the faculty in their primary instrument or voice, normally by the end of the freshman year.

All students entering the Bachelor of Musical Arts program must either pass the music literacy placement exam or take MUSC 180, How to Read Music, concurrently with MUSC 280, the first semester of Private Applied Instruction. Students who choose a primary instrument other than piano will also be required to pass a piano proficiency exam by the end of the sophomore year in order to graduate; those who fail to pass this exam are required to take MUSC 284, 285, and 286, Private Applied Instruction for Piano Proficiency.

A total of 120 credits are required for the Bachelor of Musical Arts degree. Students who wish to add a second major in another subject can do so by completing 140-145 credits.

Core Curriculum (34 - 46 credits)

Concentration Requirements (55 - 63 credits)
Literature (9 credits)

- MUSC 220 - Introduction to Music (3 cr.)
- MUSC 342 - Music in the Arab Tradition (3 cr.)
- MUSC 360 - Music in the Western Tradition (3 cr.)

Theory (20 credits)

- MUSC 240 - Western Music Theory I (3 cr.)
- MUSC 241 - Sight-Singing and Aural Skills I (1 cr.)
- MUSC 245 - Arab Music Theory I (3 cr.)
- MUSC 246 - Maqam I (Arab Music Sight-Singing and Aural Skills) (1 cr.)
- MUSC 340 - Western Music Theory II (3 cr.)
- MUSC 341 - Sight-Singing and Aural Skills II (1 cr.)
- MUSC 345 - Arab Music Theory II (3 cr.)
- MUSC 346 - Maqam II (Arab Music Sight-Singing and Aural Skills) (1 cr.)
- MUSC 440 - Western Music Theory III (3 cr.)
- MUSC 441 - Sight-Singing and Aural Skills III (1 cr.)

Performance (26 - 31 cr.)

- MUSC 280/281 - Applied Private Instruction (1 cr.)
- MUSC 282/283 - Applied Private Instruction (2 cr.)
- MUSC 480/481/482/483 - Advanced Applied Private Instruction (3 cr.)
- MUSC 492 - Capstone Final Recital (3 cr.)

Eight semesters of ensemble, chosen from among the following:

- MUSC 262/362/462 - Arab Music Ensemble (1 cr.)
- MUSC 263/363/463 - Guitar Ensemble (1 cr.)
- MUSC 264/364/464 - Chamber Music Ensembles (1 cr.)
- MUSC 265/365/465 - Rehearsal/Performance Practicum (1 cr.)
- MUSC 266/366/466 - Chamber Singers (1 cr.)
- MUSC 267/367/467 - Cairo Choral Society (1 cr.)

* All students entering the B.M.A. are required to take the music literacy placement exam. Those who do not achieve a passing grade are required to take the following:

MUSC 180 - How to Read Music

All students with primary instrument other than piano must take the piano proficiency exam. Those who do not achieve a passing grade are required to take the following:

MUSC 284/285/286 - Private Instruction for Piano Proficiency
Specialization Requirements (0 - 3 credits)

Students specialized in Voice will take the following course:
- MUSC 372 - Diction for Singers in the Western Tradition (3 cr.)

Students specialized in Guitar will take the following course:
- MUSC 311 - Guitar Pedagogy (3 cr.)

Electives (9 - 29 credits)

Students who choose to add a second major will in most cases need to complete an additional fifteen to twenty credits.

Students with interest in opera are encouraged to add a minor in Theater.

Minors

Design for Advertising Minor

Requirements (15 credits):

Choose FIVE from the following:

- DSGN 200 - Analogue and Digital Practices (3 cr.)
- DSGN 213 - Introduction to Visual Cultures (3 cr.)
- DSGN 317 - History of Advertising in the Arab World (3 cr.)
- DSGN 360 - Photography for Designers (3 cr.)
- DSGN 365 - Advertising and Branding (3 cr.)
- JRMC 315 - Introduction to Advertising (3 cr.)
- JRMC 330 - Advanced Photography (3 cr.)

Digital Media Minor

Requirements (15 credits):

Choose FIVE from the following:

- DSGN 200 - Analogue and Digital Practices (3 cr.)
- DSGN 213 - Introduction to Visual Cultures (3 cr.)
- DSGN 250 - Digital Practice I (3 cr.)
- DSGN 313 - Web Design (3 cr.)
- DSGN 335 - Animation (3 cr.)
- DSGN 350 - Digital Practices II (3 cr.)

Film Minor
Minor Requirements:

All Film minor students must complete 18 credit hours of course work as follows:

Complete THREE Foundation Courses (9 credits)

- FILM 200 - Analogue and Digital Practices (3 cr.)
- FILM 213 - Introduction to Visual Cultures (3 cr.)
- FILM 320 - Cinema in Egypt and the Arab World (3 cr.)

Choose TWO Survey Courses (6 credits)

- FILM 310 - History of World Cinema (3 cr.)
- FILM 340 - Documentary Film (3 cr.)
- FILM 341 - Anthropology and Film (3 cr.)
- FILM 351 - Digital Editing (3 cr.)
- FILM 352 - The Film Industry (3 cr.)
- FILM 353 - Digital Cinematography (3 cr.)
- FILM 354 - Film Audience and Reception (3 cr.)
- FILM 360 - The Filmmaker (3 cr.)
- FILM 390 - Film Genres (3 cr.)
- FILM 456 - Experiential Learning in Film (3 cr.)

Choose ONE from the Following Senior Courses (3 credits)

- FILM 450 - Senior Film Project (3 cr.)
- FILM 470 - Advanced Seminar in Film Study and Research (3 cr.)

Graphic Design Minor

Requirements (15 credits):

Choose FIVE from the following:

- DSGN 200 - Analogue and Digital Practices (3 cr.)
- DSGN 202 - Design II: Logo and Corporate Identity (3 cr.)
- DSGN 210 - Typography I (3 cr.)
- DSGN 213 - Introduction to Visual Cultures (3 cr.)
- DSGN 215 - History of Graphic Design (3 cr.)
- DSGN 303 - Design III: Publication (3 cr.)
- DSGN 304 - Design IV: Packaging (3 cr.)
- DSGN 305 - Design V: Retail Design (3 cr.)
- DSGN 420 - Production for Designers (3 cr.)

Music Minor
In order to complete the minor in music, 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.
- Study representative great works of music literature and composers who produced them, either Western or Arab.
- Make substantial progress in learning to sing or play an instrument; more advanced students may also present part of a solo recital, with the permission of their teacher.
- Sing in a choir, and/or play in an instrumental ensemble.

This will require that the student complete 17 credit hours of instruction, normally including the following:

**Theory and literature (10 cr.)**

- MUSC 220 - Introduction to Music (3 cr.)

**EITHER**

- MUSC 240 - Western Music Theory I (3 cr.)
  AND
- MUSC 241 - Sight-Singing and Aural Skills I (1 cr.)
  AND
- MUSC 360 - Music in the Western Tradition (3 cr.)

**OR**

- MUSC 245 - Arab Music Theory I (3 cr.)
  AND
- MUSC 246 - Maqam I (Arab Music Sight-Singing and Aural Skills) (1 cr.)
  AND
- MUSC 342 - Music in the Arab Tradition (3 cr.)

**Performance (4 cr.)**

MUSC 280, 281 Applied Private Instruction (1 cr. each = 2 cr.)

**Two semesters of ensemble, chosen from among the following:**

- MUSC 262/362 Arab Music Ensemble (1 cr.)
- MUSC 263/363 Guitar Ensemble (1 cr.)
- MUSC 264/364 Chamber Ensemble (1 cr.)
- MUSC 265/365 Practicum (1 cr.)
- MUSC 266/366 Chamber Singers (1 cr.)
- MUSC 267/367 Cairo Choral Society (1 cr.)

**Music Technology (3 cr.)**
EITHER
- MUSC 330 - Introduction to Music Technology (3 cr.)
- MUSC 331 - Music Production Using Protools 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 Protools 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 220 - Introduction to Music (3 cr.)

EITHER

- MUSC 240 - Western Music Theory I (3 cr.)
- MUSC 241 - Sight-Singing and Aural Skills I (1 cr.)

OR

- MUSC 245 - Arab Music Theory I (3 cr.)
- MUSC 246 - Maqam I (Arab Music Sight-Singing and Aural Skills) (1 cr.)

Performance (2 cr.)
- MUSC 284, 285 Piano Proficiency (1 cr. each = 2 cr.)

Music Technology (9 cr.)
- MUSC 232, 332, 432 - Digital Audio / MIDI Lab (1 cr. each)
- MUSC 330 - Introduction to Music Technology (3 cr.)
- MUSC 331 - Music Production Using Protools I (3 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 18 credits in Theatre:

- THTR 203 - The Art of the Theatre (3 cr.)
- THTR 230 - Play Analysis (3 cr.)
  Three credits total from the following:
- THTR 204 - Introduction to Technical Theatre (3 cr.)
- THTR 240 - Production Practicum (1 cr. per production)
- THTR 242 - Rehearsal and Performance Practicum (1 cr. per production)
  One from the following:
- THTR 225 - Acting I (3 cr.)
- THTR 226 - Acting in Arabic I (3 cr.)
  One from the following:
- THTR 350 - Survey of Dramatic Literature (3 cr.)
- THTR 351 - History of The Theatre (3 cr.)
- THTR 460 - Modern and Contemporary Drama (3 cr.)
- THTR 461 - Dramatic Theory and Criticism (3 cr.)
  One additional Theatre course, must be a 300 level course or higher.

Type Design Minor

Requirements (15 credits):

Choose FIVE from the following:

- DSGN 200 - Analogue and Digital Practices (3 cr.)
- DSGN 210 - Typography I (3 cr.)
- DSGN 213 - Introduction to Visual Cultures (3 cr.)
- DSGN 318 - History of Arabic Calligraphy (3 cr.)
- DSGN 320 - Typography II (3 cr.)
- DSGN 330 - Typography III (3 cr.)

Department of Philosophy

Department of Philosophy
School of Humanities and Social Sciences
Professors: S. Stelzer (Chair), E. Wolf-Gazo, W. Lammi (Emeritus), G. Harman (Associate Provost for Research Administration)
Associate Professors: R. Switzer (Dean of Undergraduate Studies)
Assistant Professors: R. Fincham, C. Belo, N. Bowditch, R. Pandya, S. Magrin
Post-Doctorate Teaching Fellows: G. Rae, A. Topa, M. Crippen

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. It is strongly recommended that students majoring in Philosophy minor in another discipline and to explore other areas of study offered by the university. Fourty-two 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 require written permission from the department.

To major in Philosophy, students must have taken PHIL 220 course with not less than a "B" grade. In addition, they must have a minimum of 2.4 overall GPA.

Core Curriculum (34 - 46 credits)

Required Courses (12 credits)

- PHIL 312 - Ancient Philosophy (3 cr.)
- PHIL 313 - Medieval Philosophy (3 cr.)
- PHIL 314 - Modern Philosophy (3 cr.)
- PHIL 316 - Twentieth Century Philosophy (3 cr.)

Area Electives (9 credits)

Two of the following:

- PHIL 230 - Introduction to Ethics (3 cr.)
- PHIL 258 - Political Philosophy (3 cr.)
- PHIL 310 - Philosophy and Art (3 cr.)
- PHIL 318 - Theory of Knowledge (3 cr.)
• PHIL 402 - Metaphysics (3 cr.)

One of the following:

• PHIL 418 - Philosophical Masterpieces (3 cr.)
• PHIL 420 - Philosophical Figures (3 cr.)

Electives in Philosophy (21 credits)

Any seven courses in philosophy excluding 100-level courses PHIL 220 (Philosophical Thinking), and PHIL 299 (Selected Topics for Core Curriculum).

Electives (32 - 44 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 100-level courses and PHIL 220, selected in consultation with a member of the philosophy faculty.

PHIL 220 is prerequisite for all philosophy courses except PHIL 100, PHIL 199, and PHIL 221.

Master of Arts

Philosophy (M.A.) starting Fall 2013

We will accept applications for this program for Fall 2013.

Mission and Goals:

The mission statement of the M.A. program in Philosophy (reflecting those of the Department and the University) is as follows:

Engaging in graduate study in philosophy is to engage in a process of coming to understand one’s self and one’s place in the world. The M.A. in Philosophy is devoted to this endeavor through its content and form. It engages students in asking questions about the possibility of knowledge, the nature of morality, beauty and aesthetic experience, the meaning of religious experience, the justification and limits of power, and the purpose
and meaning of philosophical inquiry itself. And it holds that to be successful in this enquiry clear and careful thinking, the ability to question deeply held assumptions and attitudes, and a commitment to sound reasoning and careful appraisal of evidence is needed.

The goal of the M.A. in Philosophy is therefore to offer the highest quality liberal arts education to our future graduate students. Our Philosophy postgraduates will finish this M.A. program with an in-depth knowledge of the processional discipline as well as the detailed understanding of the history of ideas more generally. This entails rigorous training in rational and critical 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.

In the words of the executive director of the American Philosophical Association, “The skills that philosophy teaches you are wonderfully transferable.” Our program aims at teaching students advanced philosophical skills, which they will be able to usefully apply either within the context of a future professional career of as preparation for entering a Ph.D. program at another institution. Students often register for graduate study in Philosophy because of their love of the discipline, rather than for any utilitarian purpose.

Requirements

The M.A. in Philosophy will be aimed at any undergraduate with a background in the study of philosophy. A minimum of twenty-four graduate hours will be required.

Eight courses must be taken, at least six of which must be taken within the Department of Philosophy at the 500 level. Students will be required to follow the Philosophy Graduate Core, a series of advanced 500 level seminars that are open only to Masters students. Two such 500 level seminars will be taught each semester. The Department will also offer a series of electives: a select number of undergraduate courses that can also be taken at the 500 level.

A maximum of two courses will be able to be taken within other departments at AUC, at either the 400 or 500 level but only with 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 elect for credit at least one of the courses (at an appropriate level) offered by the Arabic Language Institute. Although AUC does not currently offer formal instruction in modern European language, students intending to write a thesis within the sphere of Continental Philosophy will be required to have a basic reading knowledge of either French or German. Any student who wishes to write a thesis in the sphere of Continental Philosophy but who lacks such knowledge is strongly encouraged to privately arrange some tuition outside of AUC. Non-native English speakers should meet normal university requirements but may not be accepted if their application reveals an inadequate command of English for the program.

Before commencing work upon the thesis students will be required to write and defend a thesis proposal before three departmental members. The thesis itself should take the form of a research paper of approximately 15,000 words in length. There will also be a final defense of the finished thesis.

The Philosophy Graduate Program Director will organize a series of (non-credit) seminars at the beginning of every academic year, which all graduate students will be expected to attend in order to ensure that they possess the research and academic writing skills requisite for tackling the thesis (PHIL 599). This training will be further reinforced by the course requirements for the Department’s Philosophy Graduate Core courses, in which the students will be required to find and engage with relevant secondary

Breakdown of Courses
4 Philosophy Graduate Core courses and 4 optional courses (2 of which can be taken within other departments) and a thesis (PHIL 599 (no cr.)):

**Required Philosophy Graduate Core:**

- PHIL 500 - Classical Western Philosophy (3 cr.)
- PHIL 501 - Advanced Seminar in Islamic Philosophy (3 cr.)
- PHIL 504 - Kant and Idealism (3 cr.)
- PHIL 505 - Advanced Seminar in Phenomenology (3 cr.)

**Optional Philosophy Graduate Courses:**

- PHIL 502 - Metaphysics (3 cr.)
- PHIL 503 - Selected Topics in Philosophy (3 cr.)
- PHIL 510 - Advanced Seminar in Aesthetics (3 cr.)
- PHIL 517 - Current Trends in Philosophy (3 cr.)
- PHIL 518 - Philosophical Masterpieces (3 cr.)
- PHIL 520 - Philosophical Figures (3 cr.)
- PHIL 530 - Advanced Ethics (3 cr.)
- PHIL 560 - Philosophy of Language and Communication (3 cr.)
- PHIL 562 - Formal and Mathematical Logic (3 cr.)

**Department of Political Science**

**School of Humanities and Social Sciences**

*Professor Emeriti:* E. Hill, E. Sullivan

*Professors:* I. Ivekovic, W. Kazziha, B. Korany, D. Tschirgi, N. Farah, A. Ezel Arab, C. Henry (Chair)

*Associate Professors:* R. El Mahdi, I. El Nur, S. El-Musa, M. Kassem, J. Maswood, E. Fishere, S. Soliman

*Assistant Professors:* H. Albrecht, S. Mc-Mahon, R. Balhi, N. Sika, R. Parfitt, J. Park, M. Pinfari, C. Donath, N. Negm

*Associate Professor of Practice:* G. Soltan

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**

**Honors Program in Political Science (B.A.)**
Students may apply for admission to the Honors program following completion of 24 credit hours in Political Science or more with a minimum major GPA of 3.4 and must maintain this GPA to continue in the honors program.

Requirements: 45 credits in Political Science as follows:

A. Concentration requirements: 27 cr. or 30 cr.

B. Political Science Specialization 9 cr.

C. Honors Requirements 9 cr.

A. Concentration Requirements: (27 or 30 credits)

- POLS 203 - Introduction to Political Science II (3 cr.)
  This course must be taken if, and only if, POLS 101 was not taken during the Freshman year.
- POLS 204 - Research Methods in Political Science (3 cr.)
- POLS 205 - Europe in the Age of Revolution and Reform (1789-1914) (3 cr.)
  Or
- POLS 206 - Europe in International Politics in the Twentieth Century (3 cr.)
  /HIST 206
- POLS 301-302 - History of Political Theory (3 cr. per semester)
  (POLS 301 or 302)
- POLS 308 - Comparative Politics of the Middle East (3 cr.)
- POLS 310 - Introduction to Development (3 cr.)
- POLS 313 - Introduction to Comparative Politics (3 cr.)
- POLS 320 - International Relations (3 cr.)
- POLS 350 - Introduction to Political Economy (3 cr.)
- POLS 471 - International Law (3 cr.)

B. Political Science Specialization: 9 crs.

If the student does not opt for a specific specialization the (9) credits will be taken as electives toward an honors general degree. Courses for each specialization is stated in the Catalog.

C. Honors Requirements: 9 crs.

- Honor Seminar POLS 400 (3 credits)
- Methodology course POLS 404 (3 credits)
- Senior Year Thesis POLS 499 (3 credits)

Other Requirements:

Students must complete the general electives and the collateral courses required of all Political Science majors, depending on the number of core curriculum credits taken to make up 120 credits total. Before registering in the 400 and 500 level course students will normally have taken the concentration requirements, or its equivalent.

Political Science, with specializations in General Political Science, International Relations, Middle East Politics, Political Economy, and Public & International Law (B.A.)
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 about, and an appreciation of, the complex mechanisms, authoritative structures, and the allocation of values, which 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, analytic 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.

For students to declare a major in Political Science, they must take either POLS 101 or POLS 203. POLS 101 may only be taken in the Freshman Year which have a minimum of 2.5 GPA and will fulfill the Social Science requirement at the primary level of the Core Curriculum and will not be counted as part of the 45 credits required for the Political Science major. POLS 203 must be taken after the Freshman Year and for those who have not taken POLS 101. Students wishing to transfer from another major after their sophomore year will be considered on a case by case basis. Junior-year (300-level) courses are required in four subfields and are prerequisite to the more advanced courses and seminars (400-level). Each semester a selection of 300 and 400 level courses and seminars is offered from which students may choose courses to complete the requirements of the major.

A total of 120 credits is required for the bachelor’s degree in Political Science:

Core Curriculum (34-46 credits)
Political Science Requirements (45 credits) to be taken as follows:

1. if POLS 101 has already been taken in the Freshman Year:
   27 credits (9 courses) in the concentration plus 18 credits (6 courses) as electives.
2. if POLS 101 has not been taken in the Freshman Year:
   30 credits (10 courses) in the concentration plus 15 credits (5 courses) as electives.

Collateral requirements: (6 or 9 credits)
General Electives: (20-35 credits)

All Political Science major and minor students must abide with the following English regulations:

- ENGL 100 is a prerequisite to POLS 101 or POLS 203
- RHET 101 is a prerequisite to POLS 204 and all 300 level POLS courses
- RHET 102 May be taken concurrently with POLS 204 and 300 level POLS courses
- RHET 201 is prerequisite to all 400 level POLS courses

For all Political Science students:

Political Science concentration requirements (27 or 30 credits)

- POLS 203 - Introduction to Political Science II (3 cr.)
  This course must be taken if, and only if, POLS 101 was not taken during the Freshman year.
• POLS 204 - Research Methods in Political Science (3 cr.)
• POLS 205 - Europe in the Age of Revolution and Reform (1789-1914) (3 cr.)
  or POLS 206 Europe in International Politics in the Twentieth Century Students specializing in International Relations are strongly encouraged to take POLS/HIST 206)
• POLS 301-302 - History of Political Theory (3 cr. per semester)
• POLS 308 - Comparative Politics of the Middle East (3 cr.)
• POLS 310 - Introduction to Development (3 cr.)
• POLS 313 - Introduction to Comparative Politics (3 cr.)
• POLS 320 - International Relations (3 cr.)
• POLS 350 - Introduction to Political Economy (3 cr.)
• POLS 471 - International Law (3 cr.)

Collateral requirements

• HIST - One Modern History course (3 cr.)
  (not to be taken as an independent study) in addition to:
• ECON 201 - Introduction to Macroeconomics (3 cr.)

General Electives

Students may use 15 hours of elective credit to minor in a discipline of their choice. Minoring is optional. Courses taken as collateral requirements may count towards the minor.

Students have the choice to use the 18 elective credits in Political Science (or 15 elective credits if they had to take POLS 203 to fulfill their concentration requirements) to obtain BA in Political Science in:

1. General field in Political Science
2. Specialization in International Relations
3. Specialization in Middle East Politics
4. Specialization in Political Economy
5. Specialization in Public and International Law
Three courses are required for each specialization as specified below.

1. Requirements for the General Political Science field:

Students must take five or six Political Science courses, one of which must be a seminar.

Collateral Requirements (6 credits)
General Electives (23-35 credits)
Depending on the number core curriculum credits taken to make up 120 credits total.

2. Requirements for the Specialization in International Relations

To specialize in International Relations, Political Science majors must, as a minimum, take the following three courses:

Requirements:

• POLS 405 - International Politics in the Middle East (3 cr.)
Options:

To further their understanding in this specialization, students have the option to take a number of recommended courses including:

- POLS 414 - Egyptian Foreign Policy (3 cr.)
- POLS 415 - U.S. Foreign Policy (3 cr.)
- POLS 440 - Seminar: Special Topics in International Relations (3 cr.)

Collateral Requirements (9 credits)

- ECON 201 - Introduction to Macroeconomics (3 cr.)

Two additional history courses chosen from among the following:

- HIST 202 - History of Modern American Civilization (3 cr.)
- HIST 308 - Europe in the Age of Reason (3 cr.)
- HIST 356 - State and Society in the Middle East, 1906-present (3 cr.)
- HIST 401 - Selected Topics in the History of the United States (3 cr.)
  (when approved by POLS department)
- HIST 402 - Selected Topics in European History (3 cr.)
  (when approved by POLS department)
- HIST 462 - Selected Topics in the History of the Modern Middle East (3 cr.)

Electives (20-32 credits)

Depending upon the number of core curriculum credits taken.

3. Requirements for the Specialization in Middle East Politics

To specialize in Middle East Politics, Political Science majors must, as a minimum, take the following three courses:

Requirements:

- POLS 354 - Political and Social Thought in the Modern Arab World (3 cr.)
- POLS 420 - Issues in Middle East Politics (3 cr.)
- POLS 422 - Contemporary Egypt (3 cr.)

Options:
To further their understanding in this specialization, students have the option to take a number of recommended courses including:

- ARIC 439 - Islamic Law (3 cr.)
- POLS 325 - Government and Politics of Egypt (3 cr.)
- POLS 405 - International Politics in the Middle East (3 cr.)
- POLS 414 - Egyptian Foreign Policy (3 cr.)
- POLS 424 - Political Economy of the Middle East and North Africa (3 cr.)
- POLS 430 - Seminar: Special Topics in Political Science (3 cr.) (If topic is applicable to the ME)
- POLS 472 - International Law in the Middle East (3 cr.)
- POLS 475 - Egyptian Law (3 cr.)
- POLS 477 - Law and Development (3 cr.)

Collateral Requirements (6 credits)

- Modern Middle East History at 300 or 400 level Credits: (3 cr.)
- ECON 201 - Introduction to Macroeconomics (3 cr.)

General Electives (23-35 credits)

Depending on the number of core curriculum credits taken.

4. Requirements for the Specialization in Political Economy

To specialize in Political Economy, Political Science majors must, as a minimum, take the following three courses:

Requirements:

- POLS 351 - Theory and History of Political Economy (3 cr.)
- POLS 424 - Political Economy of the Middle East and North Africa (3 cr.)
- POLS 425 - Global Political Economy (3 cr.)

Options:

To further their understanding in this specialization, students have the option to take a number of recommended courses including:

- POLS 413 - International Financial Institutions (3 cr.)
- POLS 442 - Environmental Politics (3 cr.)

Collateral Requirements (6 credits)

- One Modern History course (not to be taken as an independent study) in addition to:
- ECON 201 - Introduction to Macroeconomics (3 cr.)
General Electives (23-35 credits)

Depending on the number of core curriculum credits taken.

5. Requirements for the Specialization in Public & International Law

To specialize in Public and International Law, Political Science majors must, as a minimum, take the following three courses:

Requirements:

- POLS 472 - International Law in the Middle East (3 cr.)
- POLS 475 - Egyptian Law (3 cr.)
- POLS 477 - Law and Development (3 cr.)

Options:

To further their understanding in this specialization, students have the option to take a number of recommended courses including:

A number of Special Topics courses that are taught each academic year under course number POLS 473 (Special Topics in Public Law) and POLS 474 (Special Topics in International Law), and/or a choice of one course at the graduate level in the specialization International Human Rights Law among which are included:

- ARIC 439 - Islamic Law (3 cr.)
- LAW 510 - Introduction to International Human Rights and Humanitarian Law (3 cr.)
- LAW 516 - Economic, Social, and Cultural Rights (3 cr.)
  *
- LAW 517 - Human Rights and Identity Groups (3 cr.)
  *
- LAW 518 - International Refugee Law (3 cr.)
  *

Note:

* LAW 516 and 517 require the permission of the LAW department; LAW 518 requires the permission of the instructor.

Collateral Requirements (6 credits)

One Modern History course (not to be taken as an independent study) in addition to:

- ECON 201 - Introduction to Macroeconomics (3 cr.)

General Electives (23-35 credits)

Depending upon number of core curriculum credits taken.
Minors

International Relations Minor

Requirements:

- POLS 203 - Introduction to Political Science II (3 cr.)
  This course must be taken if, and only if, POLS 101 was not taken during the Freshman year.
- POLS 205 - Europe in the Age of Revolution and Reform (1789-1914) (3 cr.)
  Or
- POLS 206 - Europe in International Politics in the Twentieth Century (3 cr.)
  Students minoring in International Relations are strongly encouraged to take POLS 206.
- POLS 320 - International Relations (3 cr.)

Additional Requirements

Plus three courses (two courses, if POLS 203 had to be taken) chosen from:

- POLS 405 - International Politics in the Middle East (3 cr.)
- POLS 409 - Seminar: International Organization (3 cr.)
- POLS 411 - Contemporary Foreign Policies (3 cr.)
- POLS 413 - International Financial Institutions (3 cr.)
- POLS 430 - Seminar: Special Topics in Political Science (3 cr.)
- POLS 440 - Seminar: Special Topics in International Relations (3 cr.)
- POLS 471 - International Law (3 cr.)

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 selected from the following, which may be taken with the consent of the instructor:

Requirements:

- POLS 203 - Introduction to Political Science II (3 cr.)
  This course must be taken if, and only if, POLS 101 was not taken during the Freshman year.
- POLS 308 - Comparative Politics of the Middle East (3 cr.)

Additional Requirements

and Four courses (three courses if POLS 202 had to be taken) selected from the following:

- POLS 325 - Government and Politics of Egypt (3 cr.)
- POLS 354 - Political and Social Thought in the Modern Arab World (3 cr.)
- POLS 405 - International Politics in the Middle East (3 cr.)
  See footnote one.
- POLS 420 - Issues in Middle East Politics (3 cr.)
- POLS 422 - Contemporary Egypt (3 cr.)
- POLS 430 - Seminar: Special Topics in Political Science (3 cr.)
  (Whenever content is relevant. May be taken more than once for credit if content changes)
- POLS 432 - Seminar: Comparative Politics and/or Policies (3 cr.)
  (Whenever content is relevant)

Notes:

Footnote 1: The requirement that POLS 320 be taken as a prerequisite for POLS 405 may be waived for minors with the consent of the instructor.

Political Economy Minor

The minor in Political Economy is open to students majoring in disciplines other than Political Science.

Requirements:

The Minor requires successful completion of:

- POLS 203 - Introduction to Political Science II (3 cr.)
  (This course must be taken if, and only if, POLS 101 was not taken during the Freshman year)
- POLS 350 - Introduction to Political Economy (3 cr.)
- POLS 351 - Theory and History of Political Economy (3 cr.)
- POLS 425 - Global Political Economy (3 cr.)

Additional Requirements

Plus two courses (one course if POLS 203 had to be taken) from the following:

- POLS 413 - International Financial Institutions (3 cr.)
- POLS 424 - Political Economy of the Middle East and North Africa (3 cr.)
- POLS 442 - Environmental Politics (3 cr.)

Political Science Minor

Requirements (15 credits) to be taken as follows:

1. if POLS 101 has already been taken in the Freshman Year:
   five Political Science courses at 300 or 400 level.
2. if POLS 101 has not been taken in the Freshman Year:
   POLS 203 plus four Political Science courses at 300 or 400 level.

Master of Arts
Political Science, with specializations in Comparative Politics, International Relations, and Development Studies (M.A.)

The graduate program in Political Science Department offers advanced study in the discipline of Political Science, with particular emphasis and specializations in three areas; Comparative Politics; International Relations, and; Development Studies (previously Professional Development).

The Political Science Department values its location in the heart of the Middle East and seeks, through its faculty, courses and activities, to link the discipline of political science to the thriving and complex political realities of Cairo, Egypt and the region. Its graduate programs offer students a thorough grounding in the theoretical underpinnings of the political phenomena as well as a deep understanding of political realities in Egypt, the Arab World and the international arena. The programs combine courses aimed at familiarizing students with the knowledge necessary for developing their understanding of these political realities with research seminars that are required for familiarizing students with research methods that they will need to independently analyze complex political phenomena.

The graduate programs are 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 departments concerned with political issues, or in other public, private and international sectors where there is increasingly a need for persons who have a scientific understanding of the political realities of the Middle East and the World.

Students have the option of pursuing a one-year Graduate Diploma or a Master’s degree in any of the three specializations offered by the Department. In addition to the requirements of each option, students will be able to choose elective courses covering the political topics closest to their interest. They are also encouraged to take up to two relevant courses from other departments and units of AUC. The Department works closely with its students to ensure that their chosen courses correspond to and serve their academic and professional goals.

Graduate students constitute an integral part of the academic life of the Political Science Department. They are encouraged to participate, individually and through their association, at the events and activities organized by the Department both inside AUC campus and in the thriving metropolis that constitutes its environment.

Comparative Politics

The strength of Comparative Politics at AUC is in the areas of Third World Politics and Development, with greatest faculty expertise being in Egypt and the Middle East. Graduate studies in Comparative Politics seek to increase students’ knowledge about the political dynamics of disparate systems within the larger contexts of state and society, political economy, interstate and regional relations. It seeks to develop skills of analysis and writing in order to enhance students’ understanding of their region of interest and its relations with the world. 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 include examination of current world politics as well as the many dimensions of the international system. This includes regional relations, foreign policies of selected states, as well as Middle Eastern international and interstate relations, and international political economy. The International Relations option seeks to provide greater depth of understanding of the forces operating in the international arena and the constraints that face foreign policy makers. Practice in analyzing current world and regional events and in the skills of written and oral presentation is provided as well as extra curricular activities that are designed to give students the opportunity to put
their academic learning into practice. International Relations option is valuable for students who are working or seek to work in foreign relations, either in their own government or in international organizations. The field also prepares students for employment in other kinds of positions that require the ability to analyze and write about national or international politics.

**Development Studies**

Development Studies (previously Professional Development) is designed for those who have an interest in studying the developing world. The program includes (but is not limited to) courses with practical components and requires an internship usually done in the summer between the first and second years. Development Studies (previously Professional Development) seeks to prepare students to assume positions of greater 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. It seeks to develop students’ critical and analytical capacities, and provide practice in linguistic and writing skills needed for development work. Creativity in finding solutions to development problems is encouraged so that graduates may have an impact in their chosen areas of work in development. Practice in preparing project documents is included in the program. Development Studies (previously Professional Development) is designed for those who are either presently working in development organizations or who are seeking to enter a development career.

**Admission**

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 from Egyptian universities). Applicants with deficiencies in their preparation may be required to take appropriate courses at the undergraduate level.

**The requirements for the specializations are as follows**

All specializations have gateway courses that situate each specialization within its theoretical context and provide students with analytic tools for other courses. These introductory courses also prepare students for research and analysis needed for writing original seminar papers and for the thesis.

**Requirements**

All specializations require the following course:

- POLS 504 - Introduction to Political Science Methods (3 cr.)

**Specialization in Comparative Politics**

A specialization in Comparative Politics requires the following courses (in addition to POLS 504).

- POLS 501 - Comparative Theory (3 cr.)
- POLS 530 - Regime Change and Democratization (3 cr.)
- POLS 558 - Comparative Politics and the Middle East (3 cr.)
Plus one course from the following:

- POLS 502 - Scope and Method of Developmental Analysis (3 cr.)
- POLS 503 - International Relations Theory (3 cr.)
- POLS 525 - International Political Economy (3 cr.)

In addition, three courses to be chosen in consultation with the Graduate Studies Director, for a total of 24 credit hours.

Specialization in International Relations

A specialization in International Relations requires the following course (in addition to POLS 504).

- POLS 503 - International Relations Theory (3 cr.)

Plus one course from the following:

- POLS 501 - Comparative Theory (3 cr.)
- POLS 502 - Scope and Method of Developmental Analysis (3 cr.)
- POLS 525 - International Political Economy (3 cr.)

Plus two courses from the following:

- POLS 505 - Identity, Culture and Norms in World Politics (3 cr.)
- POLS 510 - Global Governance and World Order(s) (3 cr.)
- POLS 554 - Comparative Foreign Policy: Theories and Applications (3 cr.)
- POLS 555 - Conflict and Security in Global Politics (3 cr.)

In addition, three courses to be chosen in consultation with the Graduate Studies Director, for a total of 24 credit hours.

Specialization in Development Studies

A specialization in Development Studies (previously Professional Development) requires the following courses (in addition to POLS 504):

- POLS 502 - Scope and Method of Developmental Analysis (3 cr.)
- POLS 584 - Practicum: Internship or Research (3 cr.)
- POLS 585 - Project Seminar (3 cr.)
- POLS 586 - Skills in Development Practice (3 cr.)

Plus one course from the following:

- POLS 501 - Comparative Theory (3 cr.)
- POLS 503 - International Relations Theory (3 cr.)
- POLS 525 - International Political Economy (3 cr.)
In addition, two courses to be chosen in consultation with the Graduate Studies Director, for a total of 24 credit hours.

Note

With department approval, students are strongly encouraged to take up to six hours of relevant courses outside the department.

Thesis

A thesis, written in English 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 ahead their program in order to successfully meet the 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 Rhetoric and Composition

Department of Rhetoric and Composition
School of Humanities and Social Sciences

Assistant Professors: E Coletu (on leave), B. Johnston, A. Heist
Senior Instructors: R. Byford, M. Carter, V. Clark, A. El Shimi, M. Henry, R. Hoath, L. Holdijk (Associate Chair), D. Jones, S. Makhlouf, G. Marquis (Acting Chair), G. McCullough, K. Saville (on leave), M. Shabka (on leave), T.
Rhetoric is the study of situations and practices that give rise to human communication. With training in both argumentation and analysis of symbolic and institutional discourses, rhetoricians study how meaning and persuasion function in a wide variety of contexts. Composition is the study and material practice of generating ideas for exchange. Using these two pillars to shape coursework, the Department of Rhetoric and Composition provides a solid foundation in persuasive and analytic writing and speaking in a variety of multi-modal, discipline-specific, and interdisciplinary genres.

Minors

Rhetoric and Writing Minor

The Rhetoric and Writing Minor introduces and advances the knowledge, understanding and value of rhetoric and writing disciplines at the university. It provides the opportunity for students to study and practice across disciplines of writing, from narrative nonfiction and creative writing, to business and technical writing, to approaches to academic inquiry.

Program Learning Outcomes

Upon completion of the Rhetoric and Writing Minor, students will be able to:

- Apply concepts and practices in contexts relevant to their emphasis area.
- Demonstrate an advanced writing style appropriate to this emphasis area.
- Practice sophisticated ethical and critical reflection, including (but not limited to) analysis of genre and discourse appropriate to this emphasis area.
- Evidence advanced awareness of interdisciplinary issues attached to their emphasis.

Requirements (15 credits):

Students who opt to minor in Rhetoric and Writing must have completed RHET 201 with a minimum grade of B-.

To fulfill the 15 credits for the Rhetoric and Writing Minor, students take:

Required course for each emphasis area:

- Writing in the Creative Genres: RHET 345 (Writer's Workshop)
- Business/Technical Writing: RHET 320 (Business Communication)
- Academic Writing: RHET 310 (Effective Rhetoric: Discourse and Power)

Additional Requirements (12 credits total):

- 6-9 credits in an emphasis area (academic, business/technical or specialized genre),
- 0-3 credit hours in a second emphasis area, and
- 3 credits in any area of their choice

Rhetoric and Writing Minor courses may be double-counted for:

- Core Curriculum credit at the secondary level
- Core Curriculum credit at the capstone level

Rhetoric and Writing Minor courses may NOT be double-counted for:

- RHET Writing requirements in the Core (3-9 credits)
- Major/Concentration credit

Students who have already taken any of the writing courses below as electives or Core courses (as described above) may count credits retroactively.

Course list by emphasis area:

A. Writing in the Creative Genres

Students who select this area of emphasis will practice and work toward mastery in several creative genres of writing, including the following: narrative nonfiction, autobiography, travel writing, fiction, poetry, playwriting and children’s literature. They will read within and practice the conventions of these genres, consider ethical concerns raised in the genres, develop critical mastery of the creative genres, and produce a substantial capstone project demonstrating significant growth in writing in a chosen creative genre.

Emphasis Outcomes:

- Master concepts and practices in creative genres through selected reading and writing
- Develop into conversant critics in the creative genres, reflecting upon both critical and ethical concerns raised through genre analysis and critical reflection
- Produce substantial capstone writing demonstrating mastery of concepts and practices in one of the creative genres
- Learn the professional and publication conventions of their selected genre
- ECLT 370 - Creative Writing (3 cr.)
- RHET 340 - Life Narratives: Reading as Writers (3 cr.)
- RHET 341 - Travel Writing (3 cr.)
- RHET 342 - Writing Children’s Literature (3 cr.)
- RHET 345 - The Writer's Workshop (3 cr.)
- RHET 380 - Poetry Writing (3 cr.)
- RHET 450 - Imagining the Book (3 cr.)

Other writing courses from the disciplines will be offered here, once given permission from the various departments.

B. Business/Technical Writing

Students who select this area of emphasis will practice and work toward professional competency in the fields of business, science and technical communications, including the following: business writing, technical writing, proposal writing, and digital rhetoric. They will read within and practice the conventions of these fields of communication, and will reflect upon ethical and critical standards enforced or called into question by these practices.
Emphasis Outcomes:

- Describe and analyze norms and conventions in writing for specialized audiences in the fields of business and science/engineering
- Produce effective and advanced business and science/technical communications

- RHET 225 - Public Speaking (3 cr.)
- RHET 320 - Business Communication (3 cr.)
- RHET 321 - Technical Communication (3 cr.)
- RHET 332 - Presentation and Persuasion in Business (3 cr.)
- RHET 334 - Digital Rhetoric (3 cr.)
- RHET 410 - Grant Writing for Community Building (3 cr.)
- RHET 480 - Research and Writing Internship (3 cr.)
- RHET 490 - Advanced Scientific and Technical Writing (3 cr.)

C. Academic Writing

Students who select this area of focus will practice and work toward mastery in the several areas of academic writing, including the following: how writing drives the humanities and social sciences, writing and cognitive studies, writing for publication purposes, and a history of argument. They will learn how writing drives thought, genres and the development of many disciplines. They will consider ethical concerns raised through this practice.

Emphasis Outcomes:

- Learn the role of writing in forming and influencing academic fields of study, the creation of genres, and professional discourses
- Analyze the relationship between writing and cognition
- Learn the professional and publication conventions in chosen disciplines of academic writing
- RHET 310 - Effective Rhetoric: Discourse and Power (3 cr.)
- RHET 322 - Writing in the Social Sciences (3 cr.)
- RHET 323 - Changing Words, Changing Worlds (3 cr.)
- RHET 325 - The Rhetoric of Argument in the Humanities and Social Sciences (3 cr.)
- RHET 330 - Writing and Cognition (3 cr.)
- RHET 400 - Writing and Editing for Publication (3 cr.)

Selected Topics and Independent Study

(Depending on ‘topic,’ these courses may fit in any of above ‘emphasis’ areas)

- RHET 299 - Selected Topics (3 cr.)
  *Public Speaking*
- RHET 399 - Selected Topics (3 cr.)
  *Advanced Style*
- RHET 460 - Independent Study (1-3 cr.)

Other Courses of Study
Rhetoric and Composition

Core Curriculum Requirements

Students must fulfill 9 credits in Rhetoric and Composition, in two ways:

- RHET 101 - Approaches to Critical Writing (3 cr.)
- RHET 102 - Effective Argument (3 cr.)
- RHET 201 - Research Writing (3 cr.)

Or

- A 300 or 400 level writing course (3 cr.) (e.g., RHET 320, 321, 322, 400, or 410)
  and:
  - RHET 102 - Effective Argument (3 cr.)
  - RHET 201 - Research Writing (3 cr.)

Department of Sociology, Anthropology, Psychology, and Egyptology

Department of Sociology, Anthropology, Psychology, and Egyptology
School of Humanities and Social Sciences

Anthropology

Professor Emeritus: D. Cole, N. Hopkins
Professor: S. Altorki
Associate Professor: H. Sabea, R. Saad
Assistant Professors: S. Perdigon, M. Tabishat, M. Westmoreland
Assistant Professor and Post-Doctoral fellow: M. Succarie

Sociology

Professor Emeritus: Dr. S. Ibrahim
Professor: M. Abaza
Associate Professors: N. Nosseir, H. Rizzo
Assistant Professors: A. Holmes, I. Morrison, A. Parrs, M. Rouchdy

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.

**Egyptology**

*Professor Emeritus:* K. Weeks  
*Professors:* F. Haikal, S. Ikram  
*Associate Professor:* M. Ayad  
*Assistant Professor:* L. Sabbahy, E. Salgues  
*Coptic Chair:* A. Eberle

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.

**Psychology**

*Professor Emeritus:* K. Weeks  
*Professors:* F. Haikal, S. Ikram  
*Associate Professor:* M. Ayad  
*Assistant Professor:* L. Sabbahy, E. Salgues  
*Coptic Chair:* A. Eberle

Psychology is the multifaceted scientific study of human behavior and mental processes. The program at AUC emphasizes physical, cognitive, emotional, personal, and social development from infancy to adulthood. This development is studied against a background of major theoretical and applied domains of psychology, concentrating on important aspects of individual, group, and cultural dynamics.

**Sociology - Anthropology**

*Professor Emeriti:* A. Cole, N. Hopkins, S. Ibrahim  
*Professors:* S. Altorki, M. Abaza  
*Associate Professors:* N. Nosseir, H. Rizzo, H. Sabea, R. Saad  

**Bachelor of Arts**

**Anthropology, with a specialization in Community Development (B.A.)**

Anthropology is the comparative study of peoples, societies, and cultures in all their variations across time and space. Anthropology spans the social and natural sciences as well as the humanities, offering interpretations of all aspects of human life. It consists of four sub-disciplines – socio-cultural, linguistics, archaeology and physical Anthropology. Anthropology at AUC focuses on cultural and social anthropology. The Unit is committed to basic and
applied research as a crucial underpinning for offering critical, reflexive and empirically informed interpretations of global and historical cultural diversity. Our emphasis on research is complemented by a critical engagement with classic and more recent theoretical orientations in the field of anthropology. The research and teaching interests of the Department range from the anthropology of development, economic anthropology, gender and feminism, kinship studies, the anthropology of religion and symbolic systems, psychological anthropology, medical anthropology, to colonialism, power, identity and globalization.

**Bachelor of Arts**

The undergraduate program aims to present the main themes and trends in cultural and social anthropological thought and practice and thereby to nurture critical, intercultural, and reflexive perspectives as part of liberal education. In doing so, it seeks to foster understanding of the transformation of society and culture in Egypt and the region. The program also engages with other parts of the world, such as Africa, South Asia and Latin America. Our aim is to prepare students for graduate studies and for living and working in an increasingly complex and changing world. Upon graduation our students are well-positioned to pursue careers in teaching, research and applied anthropology, such as in international development agencies, non-governmental organizations, private sector, social service, media, and heritage preservation.

A student who wishes to declare a major in anthropology should be registered in or have taken ANTH 202. Every student must obtain a "C" or higher in ANTH 202 in order to continue as a major in anthropology.

Upper-division (300-400 level) courses are normally taken during the junior and senior years. Students must take ANTH 309 and ANTH 311 during the junior year. Students must take ANTH 495 in their last full academic year. Most of the other courses are offered in alternate years and so may be taken in any order. Courses at the 500-level are also open to selected advanced undergraduates.

A total of 120 credits is required for the bachelor’s degree in anthropology:

**Core Curriculum (34-46 credits)**

Students with Thanawiya'Amma art or equivalent background should take BIOL 100 (Introductory Biology); those with Thanawiya ‘Amma science or equivalent must take BIOL 104 (Unity of Life).

**Concentration Requirements (42 credits)**

- ANTH 202 - Cultural Anthropology (3 cr.)
- ANTH 309 - History of Social Theory (3 cr.)
  See footnote one.
- ANTH 311 - Contemporary Anthropological Theory (3 cr.)
  See footnote one.
- ANTH 380 - Fieldwork Methods (3 cr.)
- ANTH 495 - Senior Seminar (3 cr.)
  See footnote one.

**One of the following people-and-culture courses:**

- ANTH 302 - Kin and Family in a Global World (3 cr.)
- ANTH 312 - Peoples and Cultures of the Middle East and North Africa (3 cr.)
- ANTH 360 - Gender, Power and Social Change (3 cr.)
Additional Requirements

- **Eight** additional anthropology courses, of which three must be at the 400 level.

Collateral Requirements (21 credits)

- Two 300 or 400 level courses in the social sciences
- A minor (five courses) in any field to be selected in consultation with the advisor.

Electives (11-23 credits)

Total 120 Credits

Notes:

Footnote one: Cross listed with Sociology

Interdisciplinary Specialization in Community Development

The teaching and application of the principles of community development and community organizing prepares students to work in development agencies. 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.

Students majoring in anthropology, psychology or sociology can choose this specialization in place of the collateral requirements required for their respective majors.

Academic Advising is provided through the Anthropology, Sociology and Psychology units of the Department of Sociology, Anthropology, Psychology and Egyptology on behalf of an interdisciplinary group of faculty.

Declaration Requirements:

1. Must be an anthropology, psychology or sociology major
2. Must have a minimum GPA of 2.5

Course Requirements:

24 credits, including the following:
Required Courses

- SOC 240 - Introduction to Community Development (3 cr.)
  ANTH/PSYC 240
- SOC 340 - Participatory Action Research in Community Settings (3 cr.)
  ANTH/PSYC 340
- SOC 440-441 - Practicum in Community Development (6 cr.)
  ANTH/PSYC 440-441 Year long, two semester sequence

Electives

(At least two of the following, one has to be at the 300 level or above):

- ANTH 303 - Social Movements (3 cr.)
  /SOC 303
- ANTH 370 - Environmental Issues in Egypt (3 cr.)
  /SOC 370
- ANTH 372 - Applied Anthropology (3 cr.)
- ANTH 380 - Fieldwork Methods (3 cr.)
- ANTH 450 - Third World Development (3 cr.)
  /SOC 450
- ANTH 460 - Development Studies Seminar (3 cr.)
  /SOC 460
- PSYC 301 - Social Psychology (3 cr.)
- PSYC 330 - Community Psychology (3 cr.)
- PSYC 430 - Advanced community psychology: Applied research and service (3 cr.)
- SOC 203 - Social Problems of the Middle East (3 cr.)
- SOC 304 - Development Agencies (3 cr.)
- SOC 307 - Social Class and Inequality (3 cr.)
- SOC 435 - Gender and Power in Development (3 cr.)

Egyptology (B.A.)

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.

Bachelor of Arts in Egyptology

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.

A student who wishes to declare a major in Egyptology should be registered in or have taken an Egyptology course, and have an overall GPA of 2.7 to declare the major, and maintain a 2.7 in order to remain in the major.

A total of 120 credits is required for the bachelor’s degree in Egyptology:

Core Curriculum (34 - 46 credits)

Concentration Requirements (48 credits)

All Twelve of the following (36 credits):

- EGPT 343 - History of Ancient Egypt I: Pre-Dynastic Through Middle Kingdom Egypt (3 cr.)
- EGPT 344 - History of Ancient Egypt II: Middle Kingdom through Ptolemaic Egypt (3 cr.)
- EGPT 250 - Ancient Egyptian Literature in Translation (3 cr.)
- EGPT 253 - Hieroglyphics I (3 cr.)
- EGPT 254 - Hieroglyphics II (3 cr.)
- EGPT 361 - Art and Architecture of Ancient Egypt I (3 cr.)
- EGPT 362 - Art and Architecture of Ancient Egypt II (3 cr.)
- EGPT 340 - Culture and Society of Ancient Egypt (3 cr.)
- EGPT 346 - Societies and Culture of the Ancient Near East (3 cr.)
- EGPT 353 - Hieroglyphics III (3 cr.)
- EGPT 402 - Hieroglyphics IV (3 cr.)
- EGPT 440 - Ancient Egyptian Religion and Ethics (3 cr.)

From among the following (12 credits):

- EGPT 202 - Ancient Egypt (3 cr.)
- EGPT 204 - Archaeology: Methods and Theories (3 cr.)
- EGPT 301 - Temples, Tombs and Hieroglyphs (3 cr.)
- EGPT 341 - Egypt in the Late Period (3 cr.)
- EGPT 342 - History of Egypt in the Graeco-Roman Era (3 cr.)
- EGPT 348 - Societies and Cultures of Ancient Nubia (3 cr.)
- EGPT 400 - Introduction to Coptic (3 cr.)
- EGPT 401 - Introduction to Hieratic (3 cr.)
- EGPT 403 - Independent Study in Egyptology (1-3 cr.)
- EGPT 445 - Selected Topics in Coptic Studies (3 cr.)
- EGPT 459 - Selected Topics in Cultural Resource Management and Museology (3 cr.)
- EGPT 491 - Field Work in Egyptological Method and Theory (3 cr.)
- EGPT 499 - Selected Topics in Egyptology (3 cr.)

Notes:
Students intending to pursue graduate studies in Egyptology at an Egyptian national university must take EGPT 401 (Introduction to Hieratic) and 400 (Introduction to Coptic).

Collateral Requirements (21 credits)

18 hours in related disciplines, such as anthropology, history/art, Islamic art and archaeology, linguistics, or science, possibly to constitute a minor.

General Electives/Minor (5 - 17 credits)**

**Depending on the number of credit hours needed to complete the 120 stated above.

Psychology, with a specialization in Community Development (B.A.)

Psychology is the multifaceted scientific study of human behavior and mental processes. The program at AUC emphasizes physical, cognitive, emotional, personal, and social development from infancy to adulthood. This development is studied against a background of major theoretical and applied domains of psychology, concentrating on important aspects of individual, group, and cultural dynamics.

Bachelor of Arts

The aim of psychology at AUC is to provide students with a solid background in the current major areas of the discipline. It will give them insights which can be of personal as well as of practical value in many other occupations. In addition, the program will prepare students wishing to continue further studies leading to a professional career.

Students who intend to seek the Psychology degree must have taken PSYC 201 and have obtained a grade of "B" or higher. In addition, students must have taken or be currently enrolled in PSYC 207. Based on the availability of space, a limited number of students who have successfully completed these courses and who meet the GPA requirements as determined by the department will be accepted in the major.

A total of 120 credit hours is required for the bachelor’s degree in psychology:

Core Curriculum (34-46 credits)

Students must take one of the following for the science requirement:

- BIOL 103 - Introductory Biology (3 cr. + 1 cr. lab)
- BIOL 104 - The Unity of Life (3 cr. + 1 cr. lab)

Concentration Requirements (49 credits)

- PSYC 201 - Introduction to Psychology (3 cr.)
- PSYC 207 - Introduction to Psychological Statistics (3 cr.)
- PSYC 208 - Research Methods for Psychology (3 cr. + 1 cr. lab)
- PSYC 301 - Social Psychology (3 cr.)
- PSYC 304 - Lifespan Development (3 cr.)
• PSYC 308 - Cognitive Psychology (3 cr.)
• PSYC 313 - Learning and Behavioral Psychology (3 cr.)
• PSYC 315 - Psychological Testing and Assessment (3 cr.)
• PSYC 327 - Theories of Personality (3 cr.)
• PSYC 342 - Abnormal Psychology (3 cr.)
• PSYC 380 - Biopsychology (3 cr.)
• PSYC 403 - History and Systems of Psychology (3 cr.)

Additional Requirements

• One additional 300-level psychology course
• Three additional 400-level psychology courses (not including PSYC 402)

Collateral Requirements (24 credits)

Six courses to be approved by the adviser in addition to:

• ANTH 202 - Cultural Anthropology (3 cr.)
• SOC 201 - Introduction to Sociology (3 cr.)

Electives (1-13 credits)

Interdisciplinary Specialization in Community Development

The teaching and application of the principles of community development and community organizing prepares students to work in development agencies. 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.

Students majoring in anthropology, psychology or sociology can choose this specialization in place of the collateral requirements required for their respective majors.

Academic Advising is provided through the Anthropology, Sociology and Psychology units of the Department of Sociology, Anthropology, Psychology and Egyptology on behalf of an interdisciplinary group of faculty.

Declaration Requirements:

1. Must be an anthropology, psychology or sociology major
2. Must have a minimum GPA of 2.5

Course Requirements:

24 credits, including the following:

Required Courses
Sociology, with a specialization in Community Development (B.A.)

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.

Bachelor of Arts

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.
In order to declare the major in sociology, students must pass SOC 201 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 495 in their last full academic year. Courses at the 500-level are also open to selected advanced undergraduates.

A total of 120 credits is required for the bachelor’s degree in sociology:

**Core Curriculum (34-46 credits)**

**Concentration Requirements (42 credits)**

- SOC 201 - Introduction to Sociology (3 cr.)
- SOC 204 - Social Statistics (3 cr.)
- SOC 309 - History of Social Theory (3 cr.)
  See footnote one.
- SOC 310 - Contemporary Sociological Theory (3 cr.)
  See footnote one.
- SOC 381 - Doing Survey Research in the Social Sciences (3 cr.)
- SOC 450 - Third World Development (3 cr.)
  See footnote one.
- SOC 495 - Senior Seminar (3 cr.)
  See footnote one.

One of either

- SOC 203 - Social Problems of the Middle East (3 cr.)
- SOC 206 - Arab Family Structure and Dynamics (3 cr.)

One of either

- SOC 303 - Social Movements (3 cr.)
- SOC 307 - Social Class and Inequality (3 cr.)

**Additional Requirements**

Two additional 300 level courses in sociology
Three additional 400 level courses in sociology

**Collateral Requirements (24 credits)**

Three of the following courses:

- ANTH 202 - Cultural Anthropology (3 cr.)
- ANTH 380 - Fieldwork Methods (3 cr.)
- CSCE 102 - Introduction to Computers and their Applications (3 cr.)
- ECON 201 - Introduction to Macroeconomics (3 cr.)
- JRMC 200 - Introduction to Mass Communication (3 cr.)
- POLS 101 - Introduction to Political Science (3 cr.)
Additional Requirements

Five additional courses from any social science or humanities discipline, or relevant substitutes, to be approved by the advisor, at least three of which must be at the 300 or 400 level.

Electives (8-20 credits)

Notes

Footnote 1: Cross listed with Anthropology

Interdisciplinary Specialization in Community Development

The teaching and application of the principles of community development and community organizing prepares students to work in development agencies. 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.

Students majoring in anthropology, psychology or sociology can choose this specialization in place of the collateral requirements required for their respective majors.

Academic Advising is provided through the Anthropology, Sociology and Psychology units of the Department of Sociology, Anthropology, Psychology and Egyptology on behalf of an interdisciplinary group of faculty.

Declaration Requirements:

1. Must be an anthropology, psychology or sociology major
2. Must have a minimum GPA of 2.5

Course Requirements:

24 credits, including the following:

Required Courses

- SOC 240 - Introduction to Community Development (3 cr.)
  ANTH/PSYC 240
- SOC 340 - Participatory Action Research in Community Settings (3 cr.)
  ANTH/PSYC 340
- SOC 440-441 - Practicum in Community Development (6 cr.)
  ANTH/PSYC 440-441 Year long, two semester sequence

Electives
(At least two of the following, one has to be at the 300 level or above):

- ANTH 303 - Social Movements (3 cr.)
  /SOC 303
- ANTH 370 - Environmental Issues in Egypt (3 cr.)
  /SOC 370
- ANTH 372 - Applied Anthropology (3 cr.)
- ANTH 380 - Fieldwork Methods (3 cr.)
- ANTH 450 - Third World Development (3 cr.)
  /SOC 450
- ANTH 460 - Development Studies Seminar (3 cr.)
  /SOC 460
- PSYC 301 - Social Psychology (3 cr.)
- PSYC 330 - Community Psychology (3 cr.)
- PSYC 430 - Advanced community psychology: Applied research and service (3 cr.)
- SOC 203 - Social Problems of the Middle East (3 cr.)
- SOC 304 - Development Agencies (3 cr.)
- SOC 307 - Social Class and Inequality (3 cr.)
- SOC 435 - Gender and Power in Development (3 cr.)

**Minors**

**Anthropology Minor**

The minor in Anthropology provides students with a basic knowledge of anthropological method and theory from a cross-cultural perspective on selected aspects of the world's cultures and societies.

Fifteen credits are required for the minor in Anthropology: ANTH 202, 380 and three additional anthropology courses of which at least one must be at the 400-level.

**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.

A limited number of students are accepted into the Community Development minor. Students must have completed ANTH 202 or PSYC 201 or SOC 201 and meet requirements, including the GPA, as determined by the department to declare a minor. Academic Advising will be provided to minors through the Anthropology, Sociology and Psychology units.

Course requirements: 15 credits, including the following:

**Required Courses (9 credits)**
- PSYC 240 - Introduction to Community Development (3 cr.)
- PSYC 340 - Participatory Action Research in Community Settings (3 cr.)
  AND
  SOC/ANTH/PSYC 440 - Practicum in Community Development (3 cr.)

Electives (6 credits) two of the following:

- ANTH 303 - Social Movements (3 cr.)
- ANTH 370 - Environmental Issues in Egypt (3 cr.)
- ANTH 372 - Applied Anthropology (3 cr.)
- ANTH 380 - Fieldwork Methods (3 cr.)
- ANTH 450 - Third World Development (3 cr.)
- ANTH 460 - Development Studies Seminar (3 cr.)
- SOC 203 - Social Problems of the Middle East (3 cr.)
- SOC 307 - Social Class and Inequality (3 cr.)
- SOC 435 - Gender and Power in Development (3 cr.)
- SOC 304 - Development Agencies (3 cr.)
- PSYC 301 - Social Psychology (3 cr.)
- PSYC 330 - Community Psychology (3 cr.)
- PSYC 430 - Advanced community psychology: Applied research and service (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 SAPE Department.

Requirements (15 credits):

- EGPT 400 - Introduction to Coptic (3 cr.)

Any two of the following:

- EGPT 342 - History of Egypt in the Graeco-Roman Era (3 cr.)
- EGPT 445 - Selected Topics in Coptic Studies (3 cr.)

Any two of the following:

- ARIC 324 - Non-Muslim Communities in the Muslim World (3 cr.)
- ARIC 344 - Caliphs and Sultans in the Age of Crusades and Mongols (3 cr.)
- ARIC 370 - Pre-Islamic Influences on Islamic Art and Architecture (3 cr.)
Notes:

Appropriate courses from other departments may be substituted.

Development Studies Minor

Advisor: H. Sabea (Anthropology)

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, Anthropology, Psychology, and Egyptology 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, 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 320 - States, Capital and Rural Lives (3 cr.)
- ANTH 321 - The Urban Experience (3 cr.)
- ANTH 360 - Gender, Power and Social Change (3 cr.)
- ANTH 372 - Applied Anthropology (3 cr.)
- ANTH 450 - Third World Development (3 cr.)
- ANTH 462 - Economic Anthropology (3 cr.)
- ANTH 492 - Political Anthropology (3 cr.)
- ECON 224 - Economic History (3 cr.)
- ECON 310 - Public Finance (3 cr.)
- ECON 312 - Economic Development (3 cr.)
- POLS 310 - Introduction to Development (3 cr.)
- POLS 323 - Comparative Government and Politics: Developing Systems (3 cr.)
- POLS 460 - Development Studies Seminar (3 cr.)
- SOC 303 - Social Movements (3 cr.)
- SOC 321 - The Urban Experience (3 cr.)
- SOC 322 - Rural Sociology (3 cr.)
- SOC 323 - Fundamentals of Population Studies (3 cr.)
- SOC 431 - Political Sociology (3 cr.)
- SOC 435 - Gender and Power in Development (3 cr.)
- SOC 450 - Third World Development (3 cr.)

Approved Area-Studies Courses:

- ANTH 312 - Peoples and Cultures of the Middle East and North Africa (3 cr.)
• ANTH 382 - Peoples and Cultures of Sub-Saharan Africa (3 cr.)
• ANTH 384 - Peoples and Cultures of Latin America (3 cr.)
• ANTH 386 - Peoples and Cultures of Asia (3 cr.)
• ECON 215 - Economic History of the Modern Middle East (3 cr.)
• ECON 414 - Economics of Egypt (3 cr.)
• ECON 415 - Seminar on Economic Development in the Middle East (3 cr.)
• POLS 206 - Europe in International Politics in the Twentieth Century (3 cr.)
• POLS 308 - Comparative Politics of the Middle East (3 cr.)
• POLS 324 - Comparative Government and Politics in Contemporary Eastern Europe and Russia (3 cr.)
• POLS 354 - Political and Social Thought in the Modern Arab World (3 cr.)
• POLS 420 - Issues in Middle East Politics (3 cr.)
• POLS 439 - Government and Politics in the Modern Caucasus and Central Asia (3 cr.)
• SOC 203 - 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:

• SOC 400 - 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):

All three of the following:

• EGPT 343 - History of Ancient Egypt I: Pre-Dynastic Through Middle Kingdom Egypt (3 cr.)
• EGPT 344 - History of Ancient Egypt II: Middle Kingdom through Ptolemaic Egypt (3 cr.)
• EGPT 304 - Culture and Society of Ancient Egypt (3 cr.)

Two from among the following

• EGPT 250 - Ancient Egyptian Literature in Translation (3 cr.)
• EGPT 253 - Hieroglyphics I (3 cr.)
• EGPT 254 - Hieroglyphics II (3 cr.)
• EGPT 361 - Art and Architecture of Ancient Egypt I (3 cr.)
• EGPT 362 - Art and Architecture of Ancient Egypt II (3 cr.)
• EGPT 440 - Ancient Egyptian Religion and Ethics (3 cr.)
Psychology Minor

The minor in psychology provides a general introduction to the field without the depth of methodological training required of majors.

A limited number of students are accepted into the Psychology minor. To declare a minor students must have completed PSYC 201 and have obtained a grade of "B" or higher, as well as additional requirements, including the GPA as determined by the department. Selection of classes should be approved in consultation with the psychology faculty.

Core requirements (3 credits)

- PSYC 201 - 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 327 - Theories of Personality (3 cr.)
- PSYC 342 - Abnormal Psychology (3 cr.)
  Social Context (3 credits)
- PSYC 301 - Social Psychology (3 cr.)
  or
- PSYC 330 - Community Psychology (3 cr.)

Additional Requirements (6 credits)

Two additional psychology courses. Psychology minors are permitted to enroll in any psychology courses for which they meet the requirements.

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.

- One 300-level sociology course
- One 400-level sociology course
- SOC 201 - Introduction to Sociology (3 cr.)
- SOC 309 - History of Social Theory (3 cr.)
- SOC 381 - Doing Survey Research in the Social Sciences (3 cr.)
Master of Arts

Community Psychology (M.A.)

International Counseling and Community Psychology (ICCP)

The ICCP program will place its graduates at the forefront of advancing global trends towards multi-cultural and systemic psychological practice that promotes culturally relevant counseling and community intervention in Egypt and the region. Graduates will be the first practitioners trained in Egypt and the region to provide a multilayered range of individual and community level interventions to assist people struggling with issues affecting mental health, including mental illness and psychosocial issues.

Masters of Arts in Community Psychology

This program will prepare students to work within communities, schools, governments, United Nations and nongovernmental organizations to develop, implement, and evaluate psychosocial interventions. The program will also expose students to methods of psychological practice that are culturally appropriate to Egypt and the region. In response to community needs, the proposed program will provide its graduates with intervention skills that will help them spread awareness about mental health and thereby advance community-based mental health care.

Admission

The applicant should have a minimum of 3.0 GPA in undergraduate studies; if the student has an MA 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 15 credits (or equivalent) in psychology or related social/behavioral sciences including: Statistics, Research Design, Psychopathology and Abnormal Psychology.

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

15 credits Required / 5 courses
• PSYC 500 - Fundamentals of Counseling (3 cr.)
• PSYC 502 - Community Psychology and Systems Theory (3 cr.)
• PSYC 505 - Ethics and Professional Issues (3 cr.)
• PSYC 508 - Applied Research Design and Statistical Analysis (3 cr.)
• PSYC 540 - Community and Group Interventions (3 cr.)

2. Specialization courses

9 credits Required / 3 courses

• PSYC 525 - Consultation to non-Profit Organizations (3 cr.)
• PSYC 530 - Community Assessment and Program Evaluation (3 cr.)
• PSYC 535 - Prevention and Intervention in Communities (3 cr.)
• PSYC 586 - Practicum I in Community Psychology (3 cr.)

3. Elective

3 credits Required / 1 Elective course

4. Internship/Final Project

6 credits Required 8 months

• PSYC 596 - Internship in Community Psychology (3 cr.)

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 599 - Research Guidance and Thesis (3 cr.)

Counseling Psychology (M.A.)

International Counseling and Community Psychology (ICCP)

The ICCP program will place its graduates at the forefront of advancing global trends towards multi-cultural and systemic psychological practice that promotes culturally relevant counseling and community intervention in Egypt and the region. Graduates will be the first practitioners trained in Egypt and the region to provide a multilayered range of individual and community level interventions to assist people struggling with issues affecting mental health, including mental illness and psychosocial issues.

Masters of Arts in Counseling Psychology
This program will prepare students to provide counseling to individuals, couples and families struggling with psychosocial issues. The program will also expose students to methods of psychological practice that are 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 an MA 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 15 credits (or equivalent) in psychology or related social/behavioral sciences including: Statistics, Research Design, and Psychopathology.

Language Requirement

The applicant should demonstrate proficiency in the English language in accordance with AUC standards

Courses (42 credit hours)

Course work for the Master of Art requires the completion of 42 credits as follows:

1. Core Courses

18 credits Required / 6 courses

- PSYC 500 - Fundamentals of Counseling (3 cr.)
- PSYC 502 - Community Psychology and Systems Theory (3 cr.)
- PSYC 504 - Advanced Human Growth and Development (3 cr.)
- PSYC 505 - Ethics and Professional Issues (3 cr.)
- PSYC 508 - Applied Research Design and Statistical Analysis (3 cr.)
- PSYC 540 - Community and Group Interventions (3 cr.)

2. Specialization courses:

18 credits/ 6 courses

- PSYC 506 - Psychopathology and Resilience across Cultures (3 cr.)
- PSYC 510 - Counseling: Models and Methods (3 cr.)
- PSYC 515 - Counseling Assessment: International Perspectives (3 cr.)
- PSYC 550 - Couples Counseling and Human Sexuality (3 cr.)
- PSYC 580 - Practicum I in Counseling Psychology (3 cr.)
- PSYC 581 - Practicum II in Counseling Psychology (3 cr.)

3. Internship/Final Project

6 credits Required 8 months.
Egyptology and Coptology, with tracks in Egyptology: Art, Archeology and History, Egyptology: Philology, 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.

There are 3 different possible tracks for the MA:

1. Egyptology: Art, Archeology and History
2. Egyptology: Philology
3. Coptology

The graduate 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.

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), 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 might be required in the form of prerequisites. These 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 papers, and more challenging exams.

We also require students to have a reading knowledge of either French or German prior to writing a thesis, this 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 400-level courses may be taken as part of the MA program. Approved 300 and 400 level courses may be taken at the 500 level in special circumstances.
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.

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 599)

Required:

- EGPT 540 - Advanced Method and Theory: Archaeological and Historical (3 cr.)
- EGPT 598 - Research Seminar: Research Design and Writing (3 cr.)
- EGPT 541 - Material Culture: Looking at Artifacts in Context (3 cr.)
  Or
- EGPT 542 - Site Analysis (3 cr.)
- EGPT 591 - Field Work in Egyptological Method and Theory (3 cr.)

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 510 - Culture and Society of Ancient Egypt (3 cr.)
- EGPT 512 - Art, Societies, and Cultures of the Ancient Near East (3 cr.)
- EGPT 530 - Graeco-Roman Egypt (3 cr.)
- EGPT 519 - Selected Topics in Ancient Egyptian Art and Culture (3 cr.)
  ** Can be taken more than once if the subject matter changes.
- EGPT 521 - Societies and Cultures of Ancient Nubia (3 cr.)
- EGPT 522 - Ancient Egyptian Religion and Ethics (3 cr.)
- EGPT 525 - Settlement and Daily Life in Ancient Egypt (3 cr.)
- EGPT 526 - Death and Burial in Ancient Egypt (3 cr.)
- EGPT 533 - Coptic Art and Architecture (3 cr.)
- EGPT 545 - Selected Topics in Cultural Resource Management and Museology (3 cr.)
  ** Can be taken more than once if the subject matter changes.
- EGPT 560 - 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.

**Egyptology: Philology (after fulfilling prerequisites):**

4 core courses and 4 optional courses and a thesis (EGPT 599)

**Required:**

- EGPT 504 - Advanced Hieratic (3 cr.)
- EGPT 561 - Advanced Readings in Ancient Egyptian religion Texts (3 cr.)
  Or
- EGPT 500 - Hieroglyphics III (3 cr.)
  Or
- EGPT 501 - Hieroglyphics IV (3 cr.)
  Or
- EGPT 562 - Advanced Readings in historical literature from the Old Kingdom to the Late period (3 cr.)
- EGPT 591 - Field Work in Egyptological Method and Theory (3 cr.)
- EGPT 598 - Research Seminar: Research Design and Writing (3 cr.)

**Optional:**

Four choices from other courses depending on individual interest, including:

- EGPT 502 - Introduction to Demotic (3 cr.)
- EGPT 503 - Introduction to Ptolemaic Hieroglyphs (3 cr.)
- EGPT 505 - Introduction to Coptic (3 cr.)
- EGPT 506 - Advanced Coptic Texts (3 cr.)
  ** Can be taken more than once if the subject matter changes.
- EGPT 521 - Societies and Cultures of Ancient Nubia (3 cr.)
- EGPT 522 - Ancient Egyptian Religion and Ethics (3 cr.)
- EGPT 530 - Graeco-Roman Egypt (3 cr.)
- EGPT 510 - Culture and Society of Ancient Egypt (3 cr.)
- EGPT 512 - Art, Societies, and Cultures of the Ancient Near East (3 cr.)
- EGPT 519 - Selected Topics in Ancient Egyptian Art and Culture (3 cr.)
  ** Can be taken more than once if the subject matter changes.
- EGPT 545 - Selected Topics in Cultural Resource Management and Museology (3 cr.)
  ** Can be taken more than once if the subject matter changes.

**Coptology:**

4 core courses and 4 optional courses and a thesis (EGPT 599)

**Required:**
Catalog 2012-2013 Extract

- EGPT 505 - Introduction to Coptic (3 cr.)
- EGPT 506 - Advanced Coptic Texts (3 cr.)
- EGPT 598 - Research Seminar: Research Design and Writing (3 cr.)
- EGPT 533 - Coptic Art and Architecture (3 cr.)
  Or
- EGPT 539 - Selected Topics in Coptic Studies (3 cr.)

Choices:

Four choices from other courses depending on individual interest:

- EGPT 530 - Graeco-Roman Egypt (3 cr.)
- EGPT 531 - The Romano-Byzantine World and Egypt (3 cr.)
- EGPT 532 - Classical Art and Archaeology (3 cr.)
- EGPT 533 - Coptic Art and Architecture (3 cr.)
- EGPT 539 - Selected Topics in Coptic Studies (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.
- ARIC 575-576 - Special Studies in Islamic Art and Architecture (3 cr.)

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.

The prerequisites are:

Fall

- EGPT 253 - Hieroglyphics I (3 cr.)
- EGPT 361 - Art and Architecture of Ancient Egypt I (3 cr.)
- EGPT 343 - History of Ancient Egypt I: Pre-Dynastic Through Middle Kingdom Egypt (3 cr.)

Spring

- EGPT 254 - Hieroglyphics II (3 cr.)
- EGPT 362 - Art and Architecture of Ancient Egypt II (3 cr.)
- EGPT 344 - History of Ancient Egypt II: Middle Kingdom through Ptolemaic Egypt (3 cr.)

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 the knowledge and skills necessary to understand, critically engage with, and effect change in local, regional, and global communities. Its longstanding tradition of combining scholarship with a commitment to social, economic, and political justice, alongside the quality and diversity of its students and faculty, make the program a dynamic environment for learning and research.

The program emphasizes an interdisciplinary approach to social theory and research. As such, participating faculty focus on a broad set of issues, including media and public culture, memory and social history, power and inequality, development and contentious politics, migration, and transnational studies, as well as gender, religion, and urban studies.

The vibrant and cosmopolitan city of Cairo makes the program’s location ideal for students interested 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, however, encourages and accepts applications from all interested and qualified applicants.

**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.

**Language**

The candidate for the degree must demonstrate proficiency in a language other than English. The language exam is normally taken in Arabic and, in the case of native speakers, is intended to ensure that the student can work as a professional in that language. In certain cases the student may take the exam in a field and/or scholarly language other than Arabic. Students' language skills will be evaluated upon entry into the program for placement purposes and then re-evaluated for proficiency before completing the program.

**Courses**

Eight courses (24 credits) are required. All students must take: SOC/ANTH 500, SOC/ANTH 501, and SOC/ANTH 598, and either SOC/ANTH 505 or SOC/ANTH 506. 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. A maximum of six hours of 400-level courses in sociology and anthropology or of 500-level courses in other disciplines (including SOC-ANTH-POLS 507 and 508 when taught by faculty outside the SOC-ANTH program) may be taken with departmental approval.

**Thesis**
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.

**Graduate Diploma**

**Community Psychology (Graduate Diploma)**

**International Counseling and Community Psychology (ICCP)**

The ICCP program will place its graduates at the forefront of advancing global trends towards multi-cultural and systemic psychological practice that promotes culturally relevant counseling and community intervention in Egypt and the region. Graduates will be the first practitioners trained in Egypt and the region to provide a multilayered range of individual and community level interventions to assist people struggling with issues affecting mental health, including mental illness and psychosocial issues.

**Graduate Diploma in Community Psychology**

A Diploma offers students who desire practitioner training within one year an essential opportunity for higher education.

**Admission**

The applicant should have a minimum of 3.0 GPA in undergraduate studies; if the student has an MA in a related field already, a 3.0 GPA will also be expected at that level. The applicant should have completed a minimum of 15 credits in psychology or related social/behavioral sciences, or an advanced degree related to community research/ intervention. Previous coursework or work experience in statistics and research methods is expected. The applicant should have minimum 2 years relevant work experience.

**Language Requirement**

The applicant should demonstrate proficiency in the English language in accordance with AUC standards.

**Courses (28 credit hours)**

Course work for the Graduate Diploma requires the completion of 28 credits as follows:
1. Core courses

9 credits Required / 3 courses

- PSYC 502 - Community Psychology and Systems Theory (3 cr.)
- PSYC 503 - International and Multicultural Psychology (3 cr.)
- PSYC 505 - Ethics and Professional Issues (3 cr.)

2. Specialization courses

9 credits Required / 3 courses

- PSYC 525 - Consultation to non-Profit Organizations (3 cr.)
- PSYC 530 - Community Assessment and Program Evaluation (3 cr.)
- PSYC 535 - Prevention and Intervention in Communities (3 cr.)

3. Elective

3 credits Required / 1 course

4. Practium

6 credits required / 2 courses.

- PSYC 586 - Practicum I in Community Psychology (3 cr.)
- PSYC 587 - Practicum II in Community Psychology (3 cr.)

5. Internship/Final Project

1 credit Required:

- PSYC 589 - Professional Portfolio (1 cr.)

**Family Counseling (Graduate Diploma)**

**International Counseling and Community Psychology (ICCP)**

The ICCP program will place its graduates at the forefront of advancing global trends towards multi-cultural and systemic psychological practice that promotes culturally relevant counseling and community intervention in Egypt and the region. Graduates will be the first practitioners trained in Egypt and the region to provide a multilayered range of individual and community level interventions to assist people struggling with issues affecting mental health, including mental illness and psychosocial issues.

**Graduate Diploma in Family Counseling**

A Diploma offers students who desire practitioner training within one year an essential opportunity for higher education.
Admission

The applicant should have a minimum of 3.0 GPA in undergraduate studies; if the student has an MA 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 15 credits in psychology or related behavioral sciences, or an advanced degree related to mental health service. The applicant should have minimum 2 years relevant work experience.

Language Requirement

The applicant should demonstrate proficiency in the English language in accordance with AUC standards.

Courses (34 credit hours)

Course work for the Graduate Diploma requires the completion of 34 credits as follows:

1. Core courses

15 credits Required / 5 courses

- PSYC 500 - Fundamentals of Counseling (3 cr.)
- PSYC 502 - Community Psychology and Systems Theory (3 cr.)
- PSYC 503 - International and Multicultural Psychology (3 cr.)
- PSYC 504 - Advanced Human Growth and Development (3 cr.)
- PSYC 505 - Ethics and Professional Issues (3 cr.)

2. Specialization courses

12 credits Required / 4 courses

- PSYC 506 - Psychopathology and Resilience across Cultures (3 cr.)
- PSYC 510 - Counseling: Models and Methods (3 cr.)
- PSYC 515 - Counseling Assessment: International Perspectives (3 cr.)
- PSYC 545 - Seminar in Cross-Cultural Family Studies (3 cr.)

3. Practicum

6 credits required/ 2 courses

- PSYC 580 - Practicum I in Counseling Psychology (3 cr.)
- PSYC 581 - Practicum II in Counseling Psychology (3 cr.)

4. Internship/Final Project

1 credit/ Required:
The Arabic Language Institute

School of Humanities and Social Sciences

Assistant Professor: Z. Taha (Director, Arabic Language Institute)
Assistant Professors: R. El-Essawi, (Director, TAFL Program)
Arabic Language Teachers: M. K. Abdel Salam, H. Abdel Wahab, N. Abdel Wahab, D. Abo El-Seoud
(Director, Summer Program), J. Allam (Director, Arabic Language Intensive Program), N. El Assiouti, S. Attalla, K. Al
Massoud, M. S. Moussa (Director, Arabic Language), I. Saad, H. Salem, L. Al-Sawi, S. Serry, I. Soliman (Executive
Director, Center for Arabic Study Abroad), A. Waked, N. Warraki, S. ElWakil, L. White and S. Yacout.

The Arabic Language Institute is responsible for Arabic language instruction within the university’s academic
structure. It includes the university’s TAFL (Teaching Arabic as a Foreign Language) M.A. program as well as a
diploma. The ALI also administers regular non intensive and accelerated courses in Arabic offered for academic credit
(ALNG).

In addition, the ALNG 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 Arabic Language Institute, three intensive programs are administered: the Arabic Language
Intensive Program (ALIN), Arabic Language Intensive Summer Program (ALIS), and the Center for Arabic Study
Abroad (CASA). Students may obtain between 12-15 credits in each of the fall and spring semesters. In the Summer
Program (ALIS), students may obtain from 6-8 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.

Master of Arts

Teaching Arabic as a Foreign Language (M.A.)

Professor: El S. Badawi
Assistant Professors: Z. Taha (Director, Arabic Language Institute), R. El Essawi (Director TAFL program)

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 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 with undergraduate specialization in a modern language other than Arabic must take a number of additional courses in the field of Arabic studies. Applicants who are not specialized in Arabic language will need also to take an entrance exam to be offered by ALI to show that applicant has sufficient command of Arabic to qualify for admission into an Arabic language program. 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.

Language

Non-native speakers of Arabic and holders of 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. The level of language proficiency required for admission is not less than the level 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 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.

Courses

A minimum of 30 graduate credit hours and a thesis are required except as indicated in the "Thesis" section below.

Required of all students

- TAF1 501 - Principles of Linguistic Analysis (3 cr.)
- TAF1 503 - Second Language Acquisition (3 cr.)
- TAF1 510 - Methods of Teaching a Foreign Language I (3 cr.)
- TAF1 511 - Methods of Teaching a Foreign Language II (3 cr.)
- TAF1 520 - Research Methods in Applied Linguistics (3 cr.)
- TAF1 553 - Sociolinguistics (3 cr.)
- TAF1 555 - Seminar on Challenges Facing AFL Teachers (3 cr.)

Electives

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 500-level TAF1 courses, with the adviser’s approval, electives may include up to two non-TAF1 courses. No more than two 400-level courses may be counted toward the degree.

Note regarding required and elective courses:
Both required and elective courses are divided into two phases. Phase one courses include: TAFL 501, 503, 510, 511, and 520. Phase two courses include: TAFL 553, 516, 555, 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.

Graduate Diploma

TAFL (Graduate Diploma)

Complete the following six TAFL courses:

The diploma program in TAFL is designed for qualified teachers of Arabic who meet the same admission requirements as those for the masters degree. The diploma is awarded to those who successfully complete the following six TAFL courses:

- TAFL 502 - Assessment in Language Learning (3 cr.)
- TAFL 507 - Computer Assisted Language Learning (CALL)/Computer Operations Techniques (3 cr.)
- TAFL 510 - Methods of Teaching a Foreign Language I (3 cr.)
- TAFL 511 - Methods of Teaching a Foreign Language II (3 cr.)
- TAFL 516 - The Linguistics of Arabic (3 cr.)

Notes

One three-hour elective course 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 502, 510, 516, 565, or an acceptable elective.

The English Language Institute

School of Humanities and Social Sciences
Director, English Language Institute: R. Williams
Associate Director: C. Clark
Intensive English Program Director: S. Farag
IEP Language Assessment Specialist: H. Garas
Intensive and Academic English for Graduates Program Director: M. Osman
English 100 Program Director: A. El Shebeenie
English 100 Language Assessment Specialist: E. Arrigoni

While the English Language Institute offers the master’s and diploma programs in TESOL as described under “Programs” the Institute was founded in 1956 to offer intensive English language courses in its Intensive English Program (IEP) to prepare non-native speakers of English for study at the undergraduate and graduate levels in the university. In addition, the institute offers English 100, Academic English for Freshmen, which serves as a bridge between the IEP and the Rhetoric and Composition.

ELI Program Accreditation ELI/CEA

The Intensive English Program (IEP) and the English 100 Program are accredited by the Commission on English Language Program Accreditation (CEA). The CEA is based in Washington, D.C. and recognized by the U.S. Department of Education. Its purpose is to promote excellence in English language programs by identifying best practices, setting standards, and training professionals in how to understand and meet standards in the ten standard areas of mission; curriculum; faculty; facilities, equipment, and supplies; administrative and fiscal capacity; recruiting; students services; length and structure of program of study; student achievement; and student complaints and program development, planning and review.

Minors

Linguistics Minor

Professor: A. Agameya
Associate Professors: R. Williams (Director, English Language Institute), M. Plumlee
Assistant Professors: L. Fredricks, A. Gebril

The linguistics minor in administered by the English Language Institute in cooperation with the Anthropology Unit and the Department of Rhetoric and Composition. It offers courses in linguistics anthropology, Teaching English to Speakers of Other Languages (TESOL), or writing in specific genres. The minor is particularly valuable as a complement to majors such as English and comparative literature, Psychology, Sociology, Anthropology, and Journalism and Mass Communication.

Requirements (9 credits):

- LING 200 - Languages of the World (3 cr.)
- LING 252 - Introduction to Linguistics (3 cr.)
- LING 352 - Language in Culture (3 cr.)
  /ANTH 352

And two of the following elective courses (6 credits)

ANTH 332 - Social Constructions of Difference: Race, Ethnicity, and Class
ANTH 380 - Fieldwork Methods

LING 268 - Principles and Practice of Teaching English
LING 299 - Selected Topic for Core Curriculum
LING 422 - Language and Human Development

RHET 322 - Writing in the Social Sciences
RHET 325 - The Rhetoric of Argument in the Humanities and Social Sciences
RHET 334 - Digital Rhetoric
RHET 400 - Writing and Editing for Publication
RHET 410 - Grant Writing for Community Building

Master of Arts

Teaching English to Speakers of Other Languages (M.A.)

Professors Emeriti: S. El Araby, Y. El-Ezabi, E. F. Perry, P. Stevens
Professor: A. Agameya
Associate Professors: R. Williams (Director, English Language Institute), M. Plumlee
Assistant Professors: L. Fredricks, A. Gebril

The graduate programs in Teaching English to Speakers of Other Languages (TESOL) are designed to enhance knowledge, skills, and effectiveness of teachers, researchers, and administrators in the profession. These programs attract an international student body and combine rigorous academic standards with an appropriate balance between theory and practice.

Admission

Applicants for the Master of Arts degree in TESOL must have teaching experience prior to admission into the program, or may 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.

Courses

Required of all students:
- TESL 500 - English Grammar (3 cr.)
- TESL 501 - Principles of Linguistic Analysis (3 cr.)
- TESL 502 - Assessment in Language Learning (3 cr.)
- TESL 503 - Second Language Acquisition (3 cr.)
- TESL 510 - Methods of TESOL I (3 cr.)
- TESL 511 - Methods of TESOL II (3 cr.)
- TESL 520 - Research Methods in Applied Linguistics (3 cr.)

For thesis writers:

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.

Electives

In choosing electives, students with assistance of their advisors, are to choose at least one course from two of the groups listed below.

1. Education and research:

- TESL 507 - Computer Assisted Language Learning (CALL) (3 cr.)
- TESL 540 - Selected Topics in Applied Linguistics (1, 2, or 3 cr.)
- TESL 570 - Proposal Writing (3 cr.)

2. Linguistics:

- TESL 521 - English Syntax (3 cr.)
- TESL 540 - Selected Topics in Applied Linguistics (1, 2, or 3 cr.)
- TESL 548 - Corpus Linguistics (3 cr.)
- TESL 550 - Language Pragmatics (3 cr.)

3. Cross-linguistic, cross-cultural studies:

- TESL 525 - Language Transfer, Contrastive Analysis, and Error Analysis (3 cr.)
- TESL 540 - Selected Topics in Applied Linguistics (1, 2, or 3 cr.)
- TESL 550 - Language Pragmatics (3 cr.)
- TESL 553 - Sociolinguistics (3 cr.)

Note

In the case of TESL 540 Selected Topics in Applied Linguistics, the course topic must relate to the general category.

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 as a requirement for graduation is optional. The student who chooses to write a thesis must produce a professional paper on some aspect of TESOL/applied linguistics. 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.

**Graduate Diploma**

**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.

The Diploma is awarded to those who successfully complete the following six TESL courses:

- Two three-hour additional courses to be decided upon by the student in consultation with the academic adviser
- TESL 500 - English Grammar (3 cr.)
- TESL 501 - Principles of Linguistic Analysis (3 cr.)
- TESL 503 - Second Language Acquisition (3 cr.)
- TESL 510 - Methods of TESOL I (3 cr.)

A maximum of one appropriate course may be accepted

With departmental approval, as transfer credit toward the Diploma in lieu of the following:

- TESL 501 - Principles of Linguistic Analysis (3 cr.)
- TESL 503 - Second Language Acquisition (3 cr.)
- TESL 510 - Methods of TESOL I (3 cr.)
- TESL 511 - Methods of TESOL II (3 cr.)
  or an acceptable elective

**European Studies**

*Director:* J. Edwards  
*Faculty:* I. Ivekovic, W. Melaney

**Graduate Diploma**

**European Studies (Graduate Diploma)**
This diploma is administered through the Department of History. It offers a broad program of interdisciplinary studies with an emphasis on the current European institutions and policies of Europe. The program of seminars and taught courses is designed as an informative background for those entering professional fields where a working knowledge of Europe will be an advantage. The program takes two semesters to complete.

**Admission**

An applicant is expected to have completed an undergraduate degree with a GPA of 3.00 or equivalent. The language of instruction is English in which students must be thoroughly competent.

Undergraduate students, although not eligible for the program, may with permission of the instructor take courses from the program, excepting those taught by the Law Department.

**European Studies Courses**

Students take a total of six courses. Three courses of three credit hours each are required, of which one is an external seminar. Two of the three required courses are conducted with the participation of representatives of the European Union. Students will in addition select three electives from the courses available for this program.

**Required courses:**

- EUST 506 - Seminar on Practical Diplomacy (Arranged with European embassies and institutions) (3 cr.)
- EUST 508 - Seminar on the European Union (3 cr.)

**Select Either:**

- EUST 504 - European Union Law (3 cr.)
- EUST 513 - The European Systems of Human Rights Protection (3 cr.)

**Electives**

- ECLT 517 - Nineteenth-Century Writers (3 cr.)
- ECLT 542 - Readings in French Literature (3 cr.)
- ECLT 543 - Readings in British Literature (3 cr.)
- HIST 511 - Special Topics in Nineteenth and Twentieth Century European Studies (3 cr.)
  May be taken when content relevant to the Diploma.
- POLS 544 - European Politics (3 cr.)
- POLS 571 - Seminar: Special Topics in International Relations (3 cr.)
  (May be taken when topic concerns Europe).

**Select one of the following**

- EUST 504 - European Union Law (3 cr.)
- LAW 504 - European Union Law (3 cr.)

Or
- EUST 513 - The European Systems of Human Rights Protection (3 cr.)
- LAW 513 - The European System of Human Rights Protection (3 cr.)

Development Studies Committee

Coordinator: H. Rizzo (Sociology)
Coordinating Committee Members: T. Abdel Malek (Economics), A. Beshai (Economics), J. Bremer (Director of Public Policy and Administration Program), I. El Nur (Political Science), S. El-Musa (Political Science), P. Fargues (Director of Forced Migration and Refugee Studies), P. Glavanis (Associate Director of the Center for Learning and Teaching), B. Ibrahim (Director of the John D. Gerhart Center for Philanthropy and Civic Engagement), H. Rashad (Director of the Social Research Center), M. Rieker (Director of the Cynthia Nelson Institute for Gender & Women’s Studies), J. Salevurakis (Economics), H. Sholkamy (Social Research Center), Richard Tutwiler (Director of the Desert Development Center)

Other Courses of Study

Development Studies at AUC (Graduate)

School of Business
School of Humanities and Social Sciences

Development Studies is a rapidly growing area of study concerned with the long-term social, political and economic changes taking place in the Global South. The field is interdisciplinary and multidisciplinary within the social sciences, drawing on the perspectives of anthropology, economics, gender and women’s studies, political science, public policy and administration, and sociology in order to understand the complexities of poverty and inequality, population growth, political economy, globalization, international division of labor, structural adjustment, war and human rights, democratization, civil society and NGOs, social justice, and sustainable and alternative forms of development.

Examining questions of development in the Middle East and Africa, in particular, and the Global South more broadly is an AUC strength. Several departments and research centers at AUC offer students opportunities to pursue advanced degrees and to participate in collaborative applied projects and scholarly research in development studies.

Graduate Programs:

- Economics in International Development (MA and graduate diploma)
- Gender and Women’s Studies (MA and graduate diploma)
- Gender and Development in the Middle East/North Africa Track
- Migration and Refugee Studies (MA and graduate diploma)
- Political Science (MA and graduate diploma)
  Professional Development Specialization
- Public Policy and Administration (MPPA and graduate diploma)
- Sociology-Anthropology (MA)

Research Centers:

- The Cynthia Nelson Institute for Gender & Women’s Studies
Biology is the science that deals with the origin, history, characteristics, and habits of life. The approach in biology education is dynamic in an attempt to keep the basic programs current with the advances being made in the field. At AUC, as at many colleges and universities, there is a growing tendency to merge what had diverged into widely segregated fields: botany and zoology, classical and modern molecular approach, field and laboratory studies. Today, with recent advances in the fields of biomedicine, molecular biology, and genetics and the growing political interests in the environment and biodiversity, the discipline is growing with increasing opportunities in the job market (and for research grants) for well-trained biologists.

Bachelor of Science

Biology (B.S.)

Bachelor of Science

The undergraduate program at AUC offers interested students a liberal education in biological sciences leading to a Bachelor of Science degree giving graduates the broad background necessary in today's job market or preparing them for graduate and professional schools.

Students with a B.Sc. degree in biology are securing positions in the growing fields in industry and in academia. The recent advances in biology have created important new industries in genetic engineering, biomedicine, biotechnology, and pharmacology. Students with ambitions beyond the bachelor level are entering graduate schools (in classical and molecular biology) 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:

Core Curriculum (30-42 credits)

The course selected for the natural science elective may also satisfy a collateral requirement.
Concentration Requirements (46 credits)

- BIOL 104 - The Unity of Life (3 cr. + 1 cr. lab)
- BIOL 105 - Diversity of Life (3 cr. + 1 cr. lab)
- BIOL 204 - Principles of Systematics (3 cr. + 1 cr. lab)
- BIOL 211 - Cell Biology (3 cr. + 1 cr. lab)
- BIOL 214 - General Botany (3 cr. + 1 cr. lab)
- BIOL 215 - Biophysics (4 cr.)
- BIOL 221 - Genetics (3 cr. + 1 cr. lab)
- BIOL 240 - Ecology (3 cr. + 1 cr. lab)
- BIOL 312 - Comparative Anatomy (3 cr. + 1 cr. lab)
- BIOL 315 - Biochemistry (3 cr.)
- BIOL 340 - Quantitative Biology (3 cr. + 1 cr. lab)
- BIOL 495 - Senior Research Thesis (2 cr.)
- BIOL 496 - Seminar in Biology (1 cr.)

Additional Requirements

- **Sixteen** additional credits from 300- and 400-level courses excluding courses listed above.

Collateral Requirements (25 credits)

- CHEM 105 - General Chemistry I (3 cr.)
- CHEM 106 - General Chemistry II (3 cr.)
- CHEM 115L - General Chemistry Laboratory (1 cr.)
- CHEM 116L - General Chemistry Laboratory (1 cr.)
- CHEM 203 - Organic Chemistry I (3 cr.)
- CHEM 306 - Organic Chemistry II (3 cr.)
- CHEM 310L - Organic Chemistry I Laboratory (1 cr.)
- MACT 112 - Statistical Reasoning (3 cr.)
- MACT 131 - Calculus I (0/3)
- PHYS 111 - Classical Mechanics, Sound and Heat (3 cr.)
- PHYS 123L - General Physics Laboratory I (1 cr.)

General electives (3-15 credits)

Minors

**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: BIOL 104 (The Unity of Life), 105 (The Diversity of Life), and three additional 4-credit 200, 300, or 400 level BIOL courses.
Twenty credits are required for a minor in Biology:

Choose one of the following and three additional 4-credit 200, 300, or 400 level BIOL courses.

- BIOL 104 - The Unity of Life (3 cr. + 1 cr. lab)
- BIOL 105 - Diversity of Life (3 cr. + 1 cr. lab)

Environmental Science Minor

_Coordinated by:_ E. Cruz-Rivera (Biology), J. Grubich (Biology), A. Ramadan (Chemistry)

The minor in Environmental Science is an interdisciplinary degree program open to students in any major. The curriculum was designed with enough flexibility to allow students of all majors to enroll in the minor. The elective courses are designed to satisfy an individual's field of interest. Students will participate in interdepartmental seminars and become involved in the study of environmentally related problems at both 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 (18-19 credits):

Concentration Requirements (9-10 credits)

- BIOL 399 - Guided Studies in Environmental Biology (3 cr.)

One of the following Biology courses:

- BIOL 102 - Essentials of Environmental Biology (3 cr.)
- BIOL 302 - Environmental Biology for Engineers (2 cr. + 1 cr. lab)
- BIOL 305 - Environmental Biology (3 cr. + 1 cr. lab)

One of the following Chemistry courses:

- CHEM 104 - Man and the Environment (3 cr.)
- CHEM 205 - Environmental Analytical Chemistry (3 cr.)
- CHEM 311 - Analytical Chemistry II (3 cr.)

Electives (9-10 credits)

- ANTH 370 - Environmental Issues in Egypt (3 cr.)
- BIOL 306 - Environmental Biology of the Red Sea (3 cr. + 1 cr. lab)
- CENG 471 - Environmental and Sanitary Engineering (3 cr.)
- POLS 442 - Environmental Politics (3 cr.)
- SCI 260 - Environmental Geology (3 cr.)
- SCI 302 - Science, Technology and the Environment (3 cr.)

Additional Requirements
Choose one of the following:

- MACT 112 - Statistical Reasoning (3 cr.)
- MACT 412 - Mathematical Modeling (3 cr.)

Notes:

Students must finish their concentration requirements in biology and chemistry before taking BIOL/CHEM 399.

Other Courses of Study

Premedical Track

Coordinator: R. Siam (Biology)

The Biology department is coordinating the premedical track. For details refer to the specific program "Premedical Track". The Biology degree incorporates all premedical courses while leading to a Bachelor of Science in Biology.

The Premedical track is open to all AUC undergraduate students. The track provides basic biological and physical science courses that prepare students for admission into medical schools abroad. Most US and Canadian medical schools require completion of a Bachelor degree that includes the required courses for admission. The liberal art education at AUC provides the well-rounded education required by medical schools.

Premedical students will have to fulfill all requirements for a degree in their major and those of the premedical track. Premedical students are assigned an advisor from the Department of Biology to guide with course requirements for medical school admissions, Medical College Admission Test (MCAT), medical school applications and extracurricular activities.

Requirements:

42-50 credits are required for the premedical track:

- BIOL 104 - The Unity of Life (3 cr. + 1 cr. lab)
- BIOL 211 - Cell Biology (3 cr. + 1 cr. lab)
- BIOL 221 - Genetics (3 cr. + 1 cr. lab)
- CHEM 105 - General Chemistry I (3 cr.)
- CHEM 106 - General Chemistry II (3 cr.)
- CHEM 203 - Organic Chemistry I (3 cr.)
- CHEM 115L - General Chemistry Laboratory (1 cr.)
- CHEM 116L - General Chemistry Laboratory (1 cr.)
- CHEM 203 - Organic Chemistry I Laboratory (1 cr.)
- CHEM 306 - Organic Chemistry II (3 cr.)
- CHEM 310L - Organic Chemistry I Laboratory (1 cr.)
- CHEM 316L - Organic Chemistry II Laboratory (1 cr.)
- MACT 131 - Calculus I (0/3)
- MACT 132 - Calculus II (3 cr.)
- PHYS 111 - Classical Mechanics, Sound and Heat (3 cr.)
- PHYS 112 - Electricity and Magnetism (3 cr.)
- PHYS 123L - General Physics Laboratory I (1 cr.)
- PHYS 124L - General Physics Laboratory II (1 cr.)

Notes:

Students applying for admission into certain medical schools may be required to take additional courses.

Department of Chemistry

Department of Chemistry  
School of Sciences and Engineering

Professor Emeritus: F. Hassan  
Professors: P. Askalani, H. Azzazy, D. Fleita, T. Madkour, J. Ragai (Director of Master of Science in Chemistry)  
Associate Professor: A. Ramadan (Chair), T. Shoeib  
Assistant Professor: N. Demir, M. El Sayed, W. Mamdouh

Bachelor of Science

Chemistry, with specializations in Clinical Chemistry, Industrial Chemistry, and Food Chemistry (B.S.)

The chemistry program covers the five main branches of chemistry, namely organic, biochemistry, inorganic, physical and analytical. In addition students may specialize in clinical analysis or industrial 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 B.Sc. chemistry major is to train students in both the theory and practice of the major branches of chemistry. Our broad chemistry training prepares students to work in such diverse fields as research and development, teaching, quality control and industrial production The specializations enhance the career marketability of chemistry graduates.

A student who intends to major in chemistry must complete Chemistry 105 and 115 with a minimum of a B average, or if declaring the major before the completion of these two courses, should have obtained a minimum of 80% in Thanawia Amma science or equivalent in other certificates.

The Bachelor of Science in Chemistry degree is accredited by both the Canadian Society for Chemistry (CSC) and the Supreme Council of Egyptian Universities.
A total of 131 credits is required for the bachelor’s degree in chemistry:

**Core Curriculum (30-42 credits)**

The science requirements of the core curriculum electives are satisfied by the collateral requirements of the major.

**Concentration Requirements (57 credits)**

- CHEM 105 - General Chemistry I (3 cr.)
- CHEM 106 - General Chemistry II (3 cr.)
- CHEM 115L - General Chemistry Laboratory (1 cr.)
- CHEM 116L - General Chemistry Laboratory (1 cr.)
- CHEM 203 - Organic Chemistry I (3 cr.)
- CHEM 206 - Analytical Chemistry I (2 cr.)
- CHEM 216L - Volumetric and Gravimetric Analysis (2 cr)
- CHEM 301 - Seminar in Science and Technology (1 cr.)
- CHEM 303 - Thermodynamics (3 cr.)
- CHEM 304 - Physical Chemistry I (3 cr.)
- CHEM 306 - Organic Chemistry II (3 cr.)
- CHEM 309 - Inorganic Chemistry I (3 cr.)
- CHEM 310L - Organic Chemistry I Laboratory (1 cr.)
- CHEM 311 - Analytical Chemistry II (3 cr.)
- CHEM 313L - Thermodynamics Laboratory (1 cr.)
- CHEM 314L - Physical Chemistry I Laboratory (1 cr.)
- CHEM 315 - Biochemistry (3 cr.)
- CHEM 316L - Organic Chemistry II Laboratory (1 cr.)
- CHEM 318L - Inorganic Chemistry Laboratory (1 cr.)
- CHEM 402 - Physical Chemistry II (3 cr.)
- CHEM 403 - Introduction to Quantum Mechanics and Spectroscopy (3 cr.)
- CHEM 406 - Organic Chemistry III (3 cr.)
- CHEM 408 - Inorganic Chemistry II (3 cr.)
- CHEM 412L - Physical Chemistry II Laboratory (1 cr.)
- CHEM 416L - Organic Syntheses (2 cr.)
- CHEM 495 - Senior Thesis and Seminar (3 cr.)

**Specialization in Clinical Chemistry (9 credits)**

- CHEM 325 - Clinical Chemistry I (3 cr.)
- CHEM 414 - Selected Topics in Chemistry (1-3 cr.)
- CHEM 425 - Clinical Chemistry II (3 cr.)

**Specialization in Industrial Chemistry (9 credits)**

- CHEM 207 - Chemical Industries (3 cr.)
- CHEM 307 - Production Basics for Chemical Industries (3 cr.)
- CHEM 407 - Food Processing and Preservation (3 cr.)
Specialization in Food Chemistry (9 credits)

- CHEM 220 - Introduction to Food Chemistry (3 cr.)
- CHEM 320 - Food Science and Technology (3 cr.)
- CHEM 407 - Food Processing and Preservation (3 cr.)

Collateral Requirements (29 credits)

- CSCE 106 - Fundamentals of Computer Science (3 cr.)
- MACT 131 - Calculus I (0/3)
- MACT 132 - Calculus II (3 cr.)
- MACT 231 - Calculus III (3 cr.)
- MACT 233 - Differential Equations (3 cr.)
- PHYS 111 - Classical Mechanics, Sound and Heat (3 cr.)
- PHYS 112 - Electricity and Magnetism (3 cr.)
- PHYS 123L - General Physics Laboratory I (1 cr.)
- PHYS 124L - General Physics Laboratory II (1 cr.)
- PHYS 211 - Modern Physics (3 cr.)
- PHYS 214 - Waves and Optics (3 cr.)

Electives (3-15 credits)

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 105 - General Chemistry I (3 cr.)
- CHEM 106 - General Chemistry II (3 cr.)
- CHEM 115L - General Chemistry Laboratory (1 cr.)
- CHEM 116L - General Chemistry Laboratory (1 cr.)
- CHEM 312 - Archaeological Chemistry I (3 cr.)
- CHEM 410 - Archaeological Chemistry II (3 cr.)

And one of the following courses (3 cr.):

- CHEM 103 - Chemistry and Society (3 cr.)
• SCI 240 - Chemistry, Art and Archaeology (3 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 105 - General Chemistry I (3 cr.)
• CHEM 106 - General Chemistry II (3 cr.)
• CHEM 115L - General Chemistry Laboratory (1 cr.)
• CHEM 116L - General Chemistry Laboratory (1 cr.)

Additional Requirements

• 8-10 credits of higher level courses in chemistry to be chosen in consultation with a faculty advisor.

Master of Science

Chemistry, with concentration in Food Chemistry (M.Sc.)

Master of Science in Chemistry

The Master of Science program in Chemistry provides postgraduate education to prepare 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 total of 33 credit hours is required for the Master of Science degree. This consists of 24 credits hours of courses and 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 an 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, 12 credit hours chosen from the specialization courses, and 3 credit hours of electives.

Core Courses (9 credit hours)

To be chosen from the following courses:

- CHEM 501 - Biochemistry (3 cr.)
- CHEM 502 - Organometallics (3 cr.)
- CHEM 503 - Advanced Organic Chemistry (3 cr.)
- CHEM 504 - Methods of Structure Determination (3 cr.)

Food Chemistry Concentration Courses (12 credit hours)

To be chosen from the following courses:

- CHEM 511 - Applied Food Microbiology (3 cr.)
- CHEM 512 - Food Safety Assurance (3 cr.)
- CHEM 513 - Beverage Manufacturing (3 cr.)
- CHEM 514 - Chemical Changes In Food During Processing (3 cr.)
- CHEM 515 - Food Additives (3 cr.)
- CHEM 516 - Food Fermentation (3 cr.)
- CHEM 517 - Sensory Evaluation of Food Products (3 cr.)
- CHEM 518 - Functional Foods and Nutraceuticals (3 cr.)
- CHEM 519 - Practical Approaches to Food Analysis (3 cr.)

Chemistry Electives (3 credit hours)

A minimum of one course is selected as elective. No more than one 400-level course in sciences or engineering, or other related areas, not in the student’s undergraduate major, may be taken for graduate credit subject to advisor approval. Students may also select from the following list of courses:

- CHEM 551 - Selected Topics in Chemistry (3 cr.)
- CHEM 552 - Independent Study in Chemistry (3 cr.)

Thesis (9 credit hours)

Each student must submit a thesis topic that has been approved by a faculty supervisor normally after acquiring 12 credit hours of course work. Since various research topics are addressed in a sequence of two seminar courses, the student must register for the first (CHEM 590) before submitting a thesis topic while the second (CHEM 591) must be taken during the execution of the thesis research. To ensure adequate faculty consultation, two semesters of the graduate thesis course (CHEM 599) are required. After that, the course may be taken for one credit hour each semester until completion of the program requirements.
• CHEM 590 - Graduate Seminar I (2 cr.)
• CHEM 591 - Graduate Seminar II (1 cr.)
• CHEM 599 - Research Guidance and Thesis (3 cr. + 3 cr.)

Department of Computer Science and Engineering

Mission

The term computing refers to a family of disciplines, where Computing Professionals are concerned with the design and analysis of hardware and software to perform new functions or to perform old functions in new ways. The mission of the Department of Computer Science and Engineering is to provide a high quality science and engineering education within a liberal arts context to students from Egypt as well as from other countries. The aim is to produce generations of computing scientists and engineers 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.

Both the Computer Science and Computer Engineering programs at AUC are considered state of the art of their kind; they prepare graduates for what the local and international computing job market needs. Although both programs have major intersections spanning primary areas of computing, the difference between the Computer Science major and the Computer Engineering major is similar to the difference between any Science and Engineering degree. A graduate with a Computer Science degree is expected to conduct theoretical work as well as software development, while a graduate with a Computer Engineering degree should be able to design and implement systems that involve the integration of software and hardware systems. Accordingly, Computer Science focuses more on the ability to innovate new computing solutions, new algorithms for solving problems, new programming languages, new software engineering methodologies, and new underlying theories of the domain, with a good flavor of application development. Computer Engineering on the other hand, like any other engineering degree, focuses more on the ability to innovative economic solutions to ongoing computing problems, with a good flavor of computer architectures, embedded systems, distributed systems, computer networking, and hardware interfacing. Both the Computer Science and the Computer Engineering curricula at AUC are compliant with the reputed IEEE/ACM Computing Curricula Guidelines and Standards. The Computer Science program is a four-year program, while the Computer Engineering program is a five-year program.

Students are educated to acquire an appreciation of their responsibilities to society, and to prepare themselves for successful careers and leadership. The department 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 Science

Computer Engineering (B.S)
Bachelor of Science in Computer Engineering

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.

A total of 162 credits is required for the bachelor of science degree in computer engineering:

Core Curriculum Requirements (30-42 credits)

- The natural science requirement of the Core Curriculum electives is met within the Engineering Core requirements. (4 credits)
- Three credit hours of the Capstone Stage requirements of the Core Curriculum are met by the Senior Project I and Senior Project II courses. (3 credits)
- All computer engineering students are required to take RHET 321. Students exempted from RHET 101 may use RHET 321 to meet the Writing Program (Rhetoric and Composition) core requirement. All others will use the RHET 321 to meet their general elective requirement.

Engineering Core Requirements (48 credits)

- CHEM 105 - General Chemistry I (3 cr.)
- CHEM 115L - General Chemistry Laboratory (1 cr.)
- ENGR 101 - Introduction to Engineering (1 cr.)
- ENGR 115 - Descriptive Geometry and Engineering Drawing (2 cr.)
- ENGR 212 - Engineering Mechanics I (Statics) (3 cr.)
- ENGR 214 - Engineering Mechanics II (Dynamics) (3 cr.)
- ENGR 313 - Engineering Analysis and Computation I (3 cr.)
- ENGR 345 - Engineering Economy (3 cr.)
- ENGR 364 - Fundamentals of Thermofluids (3 cr.)
- MACT 132 - Calculus II (3 cr.)
- MACT 200 - Discrete Mathematics (3 cr.)
- MACT 231 - Calculus III (3 cr.)
- MACT 233 - Differential Equations (3 cr.)
- MACT 240 - Linear Algebra (3 cr.)
- MACT 317 - Probability and Statistics (3 cr.)
- PHYS 111 - Classical Mechanics, Sound and Heat (3 cr.)
- PHYS 112 - Electricity and Magnetism (3 cr.)
- PHYS 123L - General Physics Laboratory I (1 cr.)
- PHYS 124L - General Physics Laboratory II (1 cr.)

Concentration Requirements (63 credits)

- CSCE 106 - Fundamentals of Computer Science (3 cr.)
- CSCE 110 - Programming Fundamentals (3 cr.)
- CSCE 210 - Data Structures and Algorithms (3 cr.)
- CSCE 230 - Digital Design I (3 cr.)
- CSCE 231 - Computer Organization and Assembly Language Programming (3 cr.)
- CSCE 239L - Digital Design I Lab (1 cr.)
- CSCE 253 - Fundamentals of Database Systems (3 cr.)
- CSCE 321 - Analysis and Design of Algorithms (3 cr.)
- CSCE 330 - Computer Architecture (3 cr.)
- CSCE 332 - Fundamental Microelectronics (3 cr.)
- CSCE 337 - Digital Design II (3 cr.)
- CSCE 339L - Computer Architecture Lab (1 cr.)
- CSCE 341 - Software Engineering (3 cr.)
- CSCE 345 - Operating Systems (3 cr.)
- CSCE 363 - Digital Signal Processing (3 cr.)
- CSCE 432 - Embedded Systems (3 cr.)
- CSCE 435 - Wide Area Networks (3 cr.)
- CSCE 438L - Embedded Systems Lab (1 cr.)
- CSCE 439L - Wide Area Networks Lab (1 cr.)
- CSCE 445 - Fundamentals of Distributed Systems (3 cr.)
- CSCE 490 - Industrial Training (1 cr.)
- CSCE 491 - Senior Project I (1 cr.)
- CSCE 492 - Senior Project II (2 cr.)
- PHYS 215 - Introduction to Electronics (3 cr.)
- PHYS 222L - Electronics lab for Computer Scientists & Computer Engineers (1 cr.)
- MGMT 307 - Management Fundamentals (3 cr.)

Concentration Electives (15 credits)

- CSCE 316 - Programming in Java (3 cr.)
- CSCE 317 - Object Oriented Programming (3 cr.)
- CSCE 325 - Concepts of Programming Languages (3 cr.)
- CSCE 422 - Theory of Computing (3 cr.)
- CSCE 427 - Introduction to Artificial Neural Networks (3 cr.)
- CSCE 436L - Local Area Networks Lab (1 cr.)
- CSCE 437 - Local and Metropolitan Area Networks (3 cr.)
- CSCE 441 - Object-Oriented Analysis and Design (3 cr.)
- CSCE 446 - Computer Security (3 cr.)
- CSCE 447 - Compiler Design (3 cr.)
- CSCE 453 - Database Systems (3 cr.)
- CSCE 455 - Computer Graphics (3 cr.)
- CSCE 456 - Design of Web-based Systems (3 cr.)
- CSCE 465 - Artificial Intelligence (3 cr.)
- CSCE 485 - Selected Topics in Computer Science and Engineering (1-3 cr.)
- CSCE 495 - Guided Studies in Computer Science and Engineering (1-3 cr.)
- EENG 413 - Testing of Digital Circuits (3 cr.)
- EENG 494 - Selected topics in Electronics Engineering (3 cr.)

General Electives (0-6 credits)

Computer Science (B.S)

Bachelor of Science in Computer Science

The undergraduate program in Computer Science at AUC is accredited by both the American Accreditation Board for Engineering and Technology (ABET) and the Supreme Council of Egyptian Universities.

Program Objectives
The Computer Science Program prepares graduates who, following graduation, will be able to:

1. Secure competitive positions in multinational and national firms, governmental agencies, and other leading organizations, and/or secure acceptance in high-quality graduate programs,
2. Communicate effectively both orally and in writing,
3. Work effectively in teams,
4. Exhibit ethical and professional behavior.

Program Learning Outcomes
The Computer Science program of AUC enables students to achieve and demonstrate, by the time of graduation:

1. The ability to utilize logic, mathematics, and physical sciences to model and solve computing problems,
2. The ability to think critically, perform scientific analysis and develop solutions for typical computing problems,
3. Proficiency in software design and development, design and analysis of algorithms, theory of programming languages, operating systems, theory of computation and computer architecture,
4. In depth knowledge in advanced and evolving areas in computing,
5. The ability to acquire knowledge and skills independently,
6. The ability to communicate effectively using technical writing and visual and oral presentations,
7. The ability to work within teams and in multi-disciplinary environments,
8. The ability to identify social and ethical impact of computing as well as familiarity with international professional practice standards,
9. An appreciation for literature, arts, and humanities as well as awareness of multicultural context.
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.

A total of 132 credits is required for a bachelor’s degree in computer science:

Core Curriculum (30-42 credits)

- The natural science requirement of the core curriculum electives is met within the Computer Science Core requirements. (4 credits)
- Three credit hours of the Capstone Stage requirements of the Core Curriculum are met by the Senior Project I and Senior Project II courses. (3 credits)

Computer Science Requirements (60 credits):

a.) Concentration Requirements (42 credits)

- CSCE 106 - Fundamentals of Computer Science (3 cr.)
- CSCE 110 - Programming Fundamentals (3 cr.)
- CSCE 210 - Data Structures and Algorithms (3 cr.)
- CSCE 230 - Digital Design I (3 cr.)
- CSCE 231 - Computer Organization and Assembly Language Programming (3 cr.)
- CSCE 239L - Digital Design I Lab (1 cr.)
- CSCE 321 - Analysis and Design of Algorithms (3 cr.)
- CSCE 325 - Concepts of Programming Languages (3 cr.)
- CSCE 330 - Computer Architecture (3 cr.)
- CSCE 339L - Computer Architecture Lab (1 cr.)
- CSCE 341 - Software Engineering (3 cr.)
- CSCE 345 - Operating Systems (3 cr.)
- CSCE 422 - Theory of Computing (3 cr.)
- CSCE 447 - Compiler Design (3 cr.)
- CSCE 490 - Industrial Training (1 cr.)
- CSCE 491 - Senior Project I (1 cr.)
- CSCE 492 - Senior Project II (2 cr.)

b.) Computer Science electives (18 credits)
To be chosen in consultation with the student’s advisor from the following (no more than 9 credits can be chosen among the MACT courses):

- CSCE 253 - Fundamentals of Database Systems (3 cr.)
- CSCE 315 - Programming Language (1-2 cr.)
- CSCE 316 - Programming in Java (3 cr.)
- CSCE 317 - Object Oriented Programming (3 cr.)
- CSCE 333 - Data and Computer Communications (3 cr.)
- CSCE 427 - Introduction to Artificial Neural Networks (3 cr.)
- CSCE 432 - Embedded Systems (3 cr.)
- CSCE 435 - Wide Area Networks (3 cr.)
- CSCE 436L - Local Area Networks Lab (1 cr.)
- CSCE 437 - Local and Metropolitan Area Networks (3 cr.)
- CSCE 438L - Embedded Systems Lab (1 cr.)
- CSCE 439L - Wide Area Networks Lab (1 cr.)
- CSCE 441 - Object-Oriented Analysis and Design (3 cr.)
- CSCE 445 - Fundamentals of Distributed Systems (3 cr.)
- CSCE 446 - Computer Security (3 cr.)
- CSCE 448 - Secure Systems Engineering (3 cr.)
- CSCE 453 - Database Systems (3 cr.)
- CSCE 455 - Computer Graphics (3 cr.)
- CSCE 456 - Design of Web-based Systems (3 cr.)
- CSCE 465 - Artificial Intelligence (3 cr.)
- CSCE 485 - Selected Topics in Computer Science and Engineering (1-3 cr.)
- CSCE 495 - Guided Studies in Computer Science and Engineering (1-3 cr.)
- MACT 304 - Numerical Methods (3 cr.)
- MACT 310 - Operations Research (3 cr.)
- MACT 362 - Formal and Mathematical Logic (3 cr.)
- MACT 403 - Modern Algebra (3 cr.)
- MACT 406 - Stochastic Processes (3 cr.)
- MACT 440 - Graph Theory (3 cr.)

Collateral Requirements (30 credits)

- MACT 132 - Calculus II (3 cr.)
- MACT 200 - Discrete Mathematics (3 cr.)
- MACT 231 - Calculus III (3 cr.)
- MACT 240 - Linear Algebra (3 cr.)
- MACT 317 - Probability and Statistics (3 cr.)
- PHYS 111 - Classical Mechanics, Sound and Heat (3 cr.)
- PHYS 112 - Electricity and Magnetism (3 cr.)
- PHYS 123L - General Physics Laboratory I (1 cr.)
- PHYS 124L - General Physics Laboratory II (1 cr.)
- PHYS 215 - Introduction to Electronics (3 cr.)
- PHYS 222L - Electronics lab for Computer Scientists & Computer Engineers (1 cr.)

And one of the following courses:
• MACT 233 - Differential Equations (3 cr.)
• MACT 304 - Numerical Methods (3 cr.)
• MACT 310 - Operations Research (3 cr.)
• MACT 406 - Stochastic Processes (3 cr.)
• MACT 440 - Graph Theory (3 cr.)

General Electives (3-15 credits)

Minors

Computer Science Minor

A minor in Computer Science provides students from other disciplines with basic knowledge and practice in computing that would enable them to develop simple or advanced applications in their field of study.

A minor in Computer Science is comprised of 15 credits. Students select the sequence of computer science courses, with the help of their advisor, according to their needs and interests. The choice should include at least 9 credits out of the Computer Science concentration requirements and should not include CSCE 315. Students are required to plan their courses such that no more than six Computer Science credits are taken in one semester.

Recommended Options for Minor

Theoretical Aspects in Computer Science:

Recommended for Math major students:

• CSCE 106 - Fundamentals of Computer Science (3 cr.)
• CSCE 110 - Programming Fundamentals (3 cr.)
• CSCE 210 - Data Structures and Algorithms (3 cr.)
• CSCE 321 - Analysis and Design of Algorithms (3 cr.)
• CSCE 422 - Theory of Computing (3 cr.)

Data Base Systems:

Recommended for Business, Economics & Engineering majors students:

• CSCE 106 - Fundamentals of Computer Science (3 cr.)
• CSCE 110 - Programming Fundamentals (3 cr.)
• CSCE 210 - Data Structures and Algorithms (3 cr.)
• CSCE 253 - Fundamentals of Database Systems (3 cr.)
• CSCE 453 - Database Systems (3 cr.)

Computer Systems:

Recommended for Physics, Mechanical & Construction majors students but not permitted for Electronics Engineering major:
Catalog 2012-2013 Extract

- CSCE 106 - Fundamentals of Computer Science (3 cr.)
- CSCE 110 - Programming Fundamentals (3 cr.)
- CSCE 210 - Data Structures and Algorithms (3 cr.)
- CSCE 230 - Digital Design I (3 cr.)
- CSCE 231 - Computer Organization and Assembly Language Programming (3 cr.)

**Embedded Systems:**

Recommended for Electronics Engineering major students only:

- CSCE 106 - Fundamentals of Computer Science (3 cr.)
- CSCE 110 - Programming Fundamentals (3 cr.)
- CSCE 210 - Data Structures and Algorithms (3 cr.)
- CSCE 345 - Operating Systems (3 cr.)

**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)**
Eleven courses (33 credit hours) are required: Two core courses (6 credit hours), and Nine electives (27 credit hours).

Core Courses (6 credit hours)

All candidates must take Two core courses to be chosen from the following four courses:

- CSCE 525 - Algorithms and Complexity Theory (3 cr.)
- CSCE 530 - Advanced Processor Architecture (3 cr.)
- CSCE 545 - Distributed Systems (3 cr.)
- CSCE 565 - Advanced Artificial Intelligence (3 cr.)

Elective Courses (27 credits)

Nine courses to be chosen from a list of 12 courses that includes the 2 courses not taken from the above list and the following 10 courses:

- CSCE 527 - Neural Networks and Genetic Algorithms (3 cr.)
- CSCE 529 - Design and Analysis of Parallel Algorithms (3 cr.)
- CSCE 532 - Parallel Computer Architecture (3 cr.)
- CSCE 535 - High Speed Networks (3 cr.)
- CSCE 541 - Advanced Software Engineering (3 cr.)
- CSCE 543 - Advanced Software Quality (3 cr.)
- CSCE 555 - Computer Graphics and Animation (3 cr.)
- CSCE 563 - Digital Image Processing (3 cr.)
- CSCE 567 - Computer Vision (3 cr.)
- CSCE 585 - Selected Topics in Computer Science (3 cr.)
- CSCE 591 - Capstone Project in Computing (3 cr.)

Master of Science

Computer Science (M.Sc.)

Master of 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.
Courses (24 credit hours)

A minimum of eight courses (24 credit hours) is required: four core courses (12 credit hours), and four electives (12 credit hours).

Core Courses (12 credit hours)

All candidates must take the following four core courses:

- CSCE 525 - Algorithms and Complexity Theory (3 cr.)
- CSCE 530 - Advanced Processor Architecture (3 cr.)
- CSCE 545 - Distributed Systems (3 cr.)
- CSCE 565 - Advanced Artificial Intelligence (3 cr.)

Elective Courses (12 Credit hours)

- CSCE 527 - Neural Networks and Genetic Algorithms (3 cr.)
- CSCE 529 - Design and Analysis of Parallel Algorithms (3 cr.)
- CSCE 532 - Parallel Computer Architecture (3 cr.)
- CSCE 535 - High Speed Networks (3 cr.)
- CSCE 541 - Advanced Software Engineering (3 cr.)
- CSCE 543 - Advanced Software Quality (3 cr.)
- CSCE 555 - Computer Graphics and Animation (3 cr.)
- CSCE 561 - Knowledge Engineering (3 cr.)
- CSCE 563 - Digital Image Processing (3 cr.)
- CSCE 564 - Web Mining (3 cr.)
- CSCE 567 - Computer Vision (3 cr.)
- CSCE 569 - Natural Language Processing and Machine Translation (3 cr.)
- CSCE 585 - Selected Topics in Computer Science (3 cr.)

Thesis (8 Credit hours)

The graduate thesis work is an important and required part of the master's degree program. Each student must submit a thesis topic that has been approved by a faculty supervisor, normally after 12 credit hours. Various research topics are discussed in the seminar courses. The student must register in the first seminar course before submitting a thesis topic and once during the execution of the thesis research. To ensure adequate faculty consultation on the thesis, the student must register for the graduate thesis for at least two semesters.

The Computer Science seminar is a two-semester course (1 credit hour per semester) designed to prepare students for research in Computer Science. The seminar must be taken by all students. The first seminar will help the student select a topic for his/her thesis and must be taken before submitting a thesis topic. In the second seminar, the student will present a report on his/her thesis progress.

*Example of a Program Completion Plan:*

<table>
<thead>
<tr>
<th>Semester</th>
<th>1:</th>
<th>2:</th>
<th>3:</th>
<th>4:</th>
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<tr>
<td>Thesis</td>
<td>+</td>
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</tbody>
</table>

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 500-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 and Architectural Engineering

Department of Construction and Architectural Engineering
School of Sciences and Engineering

Professors: M. Abdel Mooty, M. Abou Zeid (CANG Chair), A. Ezeldin, E. Fahmy (Dean of Sciences & Engineering), M. Haroun (Provost), A. Hassanein, E. Imam (CENG Graduate Program Director), S. Khedr, A. Sherif, E. Smith (ENVE Director), N. Sherif (Associate Chair), H. Sewilam
Research Associate Professor: O. Hosny
Associate Professors: M. Moustafa, K. Nassar, S. Safar
Assistant Professors: S. El Baradei, C. Bauriedel, M. El-Barkouky, A. Waly

The Department of Construction and Architectural Engineering offers two undergraduate degrees: The Bachelor of Science in Construction Engineering and the Bachelor of Science in Architectural Engineering.

Mission

The mission of the Department of Construction and Architectural Engineering is to provide a high quality engineering education within a liberal arts context to students from Egypt as well as from other countries. The aim is to produce generations of construction engineers and 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 Science**

**Architectural Engineering (B.S.)**

**Bachelor of Science in Architectural Engineering**

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 Science in Architectural Engineering Program is to train architects who can lead the architectural profession in Egypt and the Middle-East into the digital age while respecting the 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 is to train 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 Architectural Engineering 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 Architectural Engineering 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.

Students are admitted to the Architectural Engineering Program either upon admission to AUC or after successful completion of criteria courses. High school students with mathematics/science background are accepted depending on their High School grades and the available quota in the program. Undeclared and transfer students are admitted to the program upon completing criteria courses. Students are accepted based on their GPA and on available quota in the department.

Students who are admitted to the program have to demonstrate their visualization, graphic communication and creative potential. They must achieve a minimum grade of B- in each of the three courses listed below before taking any other courses in the major.

ENGR 115 Descriptive Geometry and Engineering Drawing, 2 cr.
AENG 250 "Foundations of 3-Dimensional Design, 3cr
AENG 273 Digital Representation Tools for Architects, 2cr

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 and Architectural Engineering.

A total of 162 credits is required for the Bachelor of Science Degree in Architectural Engineering:

Core Curriculum (31/34-46 credits)

- The natural science requirement of the Core Curriculum electives is met within the Engineering Core requirements. (4 credits)
- Three credit hours of the Capstone Stage requirement of the Core Curriculum is met by the Senior Project I and II courses. (3 credits)

Engineering Core Requirements (26 credits)

- CHEM 105 - General Chemistry I (3 cr.)
- CSCE 106 - Fundamentals of Computer Science (3 cr.)
- ENGR 101 - Introduction to Engineering (1 cr.)
- ENGR 115 - Descriptive Geometry and Engineering Drawing (2 cr.)
- ENGR 212 - Engineering Mechanics I (Statics) (3 cr.)
- ENGR 229 - Strength and Testing of Materials (4 cr.)
- ENGR 345 - Engineering Economy (3 cr.)
- MACT 131 - Calculus I (0/3)
- MACT 132 - Calculus II (3 cr.)
- PHYS 111 - Classical Mechanics, Sound and Heat (3 cr.)
- PHYS 123L - General Physics Laboratory I (1 cr.)

Concentration Requirements (100 credits)

Visual Communication and Basic Design:

- AENG 250 - Foundations of 3-Dimensional Design 3 cr.
- AENG 251 - Introduction to Architectural Design (3 cr.)
- AENG 273 - Digital Representation Tools for Architects (2 cr.)
- ARTV 221 - Technical Drawing for Designers (3 cr.)

Architecture, Urban Planning and Interior Design:

- AENG 268 - Surveying for Architects (1 cr.)
- AENG 351 - Architectural Design Studio I (4 cr.)
- AENG 352 - Architectural Design Studio II (4 cr.)
- AENG 368 - Housing Design and Geographic Information Systems (3 cr.)
- AENG 420 - Design of Interior Spaces (3 cr.)
- AENG 453 - Architectural Design Studio III (4 cr.)
• AENG 454 - Architectural Design Studio IV (4 cr.)
• AENG 455 - Architectural Design Studio V (4 cr.)
• AENG 456 - Architectural Design Studio VI (4 cr.)
• AENG 468 - Urban Design and Landscape Architecture (3 cr.)
• AENG 473 - Digital Design Studio and Workshop (3 cr.)
• AENG 490 - Senior Project I (2 cr.)
• AENG 491 - Senior Project II (5 cr.)

History and Humanities and Allied Design Courses:

• AENG 234 - Human Aspects in Architectural Design (3 cr.)
• ARIC 205 - Islamic Architecture, from the Beginnings to the Present Day (3 cr.)
• ARTV 314 - Modern and Contemporary Architecture (3 cr.)
• EGPT 203 - Introduction to Egyptian Architecture (3 cr.)

Construction Engineering and Management:

• AENG 323 - Construction Materials and Quality Control (3 cr.)
• AENG 326 - Environmental Control Systems and Sustainable Design (3 cr.)
• AENG 426 - Building Service Systems and Building Systems Integration (3 cr.)
• AENG 428 - Detail Design and Finishes in Buildings (3 cr.)
• AENG 429 - Design Development and Construction Documents (3 cr.)
• AENG 441 - Professional Practice, Design Management and Codes (2 cr.)
• AENG 496 - Internship in Construction Projects (0 cr.)
• AENG 497 - Internship in Technical Drawing and Design (1 cr.)
• CENG 302 - Structural Analysis for Architects (3 cr.)
• CENG 305 - Structural Design for Architects I (3 cr.)
• CENG 306 - Structural Design for Architects II (3 cr.)
• CENG 423 - Methods and Equipment for Construction I (3 cr.)
• CENG 441 - Introduction to Construction Management and Cost Estimating (3 cr.)

Concentration Electives (3 credits)

Students should choose one course from the following:

• AENG 494 - Selected Topics in Architectural Engineering (3 cr.)
• ARIC 270-271 - Introduction to Islamic Art and Architecture (3 cr. per semester)
• ARIC 371-372 - Islamic Architecture in Egypt and Syria (3 cr. per semester)
• ARIC 467 - Islamic Architecture in Spain and North Africa (3 cr.)
• CENG 428 - Tall Buildings and Large Span Structures (3 cr.)
• CENG 442 - Construction Project Specifications, Bids, and Contracts (3 cr.)
• CENG 443 - Project Management for Multi-National Environments (3 cr.)
• CENG 446 - Techniques of Planning, Scheduling and Control (3 cr.)
• CENG 447 - Design, Modeling and Simulation of Construction Systems (3 cr.)
• CENG 452 - Structural Systems and Advanced Design (3 cr.)
• CENG 494 - Selected Topics in Construction Engineering (3 cr.)
• EGPT 361 - Art and Architecture of Ancient Egypt I (3 cr.)
• EGPT 362 - Art and Architecture of Ancient Egypt II (3 cr.)
• PHIL 310 - Philosophy and Art (3 cr.)

General Electives (0-3 credits):

Students may take courses of their selection to satisfy total program requirement of 162 credit hours.

Construction Engineering, with concentrations in Construction Materials and Structures, Construction Management and Technology, and Environmental Engineering (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 to: educate students in fundamentals of science and engineering with emphasis on construction engineering applications; introduce students to a broad spectrum of construction engineering topics, with concentration in an area of their choice, to plan for construction operations and to fit in construction organizations; prepare students to cope with and improve on the ever evolving technologies in production, products, and components of the construction industry; train students to communicate effectively, work independently and in teams, and fit in a multi-discipline environment; inspire students to recognize and consider the impact of engineering solutions in a global and societal context with the ability to understand and be sensitive to other cultures; motivate students to engage in life-long learning and develop their ability to pursue graduate studies; develop students who are creative, possess qualities of leadership, and are committed 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) Environmental Engineering. 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 Environmental Engineering concentration better equips students for involvement in civil infrastructure projects, and enables them to contribute to consulting practice in environmental and water resources engineering. To complete a concentration, students must complete two (2) required courses and one elective course in their chosen concentration area, in addition to an elective within the field of construction engineering, and carry out the graduation thesis in their chosen concentration. The concentration shall be indicated in the students’ Diploma.

The Bachelor of Science in Construction Engineering degree is accredited by both the American Accreditation Board for Engineering and Technology (ABET) and the Supreme Council of Egyptian Universities.
Students are admitted to the Construction Engineering Program either upon admission to AUC or after successful completion of criteria courses. High school students with mathematics/science background are accepted depending on their High School grades and the available quota in the Construction Engineering Program. Undeclared and transfer students are admitted to the program upon completing criteria courses in sciences. Students are accepted based on their GPA and on available quota in the department.

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 and Architectural Engineering.

A total of 162 credits is required for the Bachelor of Science Degree in Construction Engineering:

**Core Curriculum (30-42 credits)**

- The natural science requirement of the core curriculum electives is met within the Engineering core requirements. (4 credits)
- Three credit hours of the Capstone Stage requirement of the Core Curriculum is met by the Senior Project I and II courses. (3 credits)

**Engineering Core Requirements (52 credits)**

- CHEM 105 - General Chemistry I (3 cr.)
- CHEM 115L - General Chemistry Laboratory (1 cr.)
- CSCE 106 - Fundamentals of Computer Science (3 cr.)
- ENGR 101 - Introduction to Engineering (1 cr.)
- ENGR 115 - Descriptive Geometry and Engineering Drawing (2 cr.)
- ENGR 212 - Engineering Mechanics I (Statics) (3 cr.)
- ENGR 214 - Engineering Mechanics II (Dynamics) (3 cr.)
- ENGR 229 - Strength and Testing of Materials (4 cr.)
- ENGR 261 - Fundamentals of Fluid Mechanics (3 cr.)
- ENGR 313 - Engineering Analysis and Computation I (3 cr.)
- ENGR 318 - General Electrical Engineering (3 cr.)
- ENGR 345 - Engineering Economy (3 cr.)
- MACT 131 - Calculus I (0/3)
- MACT 132 - Calculus II (3 cr.)
- MACT 231 - Calculus III (3 cr.)
- MACT 233 - Differential Equations (3 cr.)
- MACT 317 - Probability and Statistics (3 cr.)
- PHYS 111 - Classical Mechanics, Sound and Heat (3 cr.)
- PHYS 112 - Electricity and Magnetism (3 cr.)
- PHYS 123L - General Physics Laboratory I (1 cr.)
- PHYS 124L - General Physics Laboratory II (1 cr.)

**Concentration Requirements (62 credits)**

- AENG 321 - Introduction to Architectural Engineering (3 cr.)
- CENG 215 - Drawing for Construction Engineering and Architecture (1 cr.)
- CENG 280 - Construction Surveying (3 cr.)
• CENG 301 - Structural Analysis (4 cr.)
• CENG 307 - Structural Design (4 cr.)
• CENG 311 - Fundamentals of Hydraulic Engineering (3 cr.)
• CENG 323 - Construction Materials and Quality Control I (4 cr.)
• CENG 325 - Mechanical Engineering in Construction (2 cr.)
• CENG 331 - Geology for Engineers (2 cr.)
• CENG 411 - Soil Mechanics (3 cr.)
• CENG 423 - Methods and Equipment for Construction I (3 cr.)
• CENG 424 - Methods and Equipment for Construction II (2 cr.)
• CENG 431 - Transportation Engineering (3 cr.)
• CENG 441 - Introduction to Construction Management and Cost Estimating (3 cr.)
• CENG 442 - Construction Project Specifications, Bids, and Contracts (3 cr.)
• CENG 446 - Techniques of Planning, Scheduling and Control (3 cr.)
• CENG 448 - Financial Management and Accounting for Construction (3 cr.)
• CENG 452 - Structural Systems and Advanced Design (3 cr.)
• CENG 461 - Design and Construction of Foundations and Retaining Structures (3 cr.)
• CENG 471 - Environmental and Sanitary Engineering (3 cr.)
• CENG 490 - Senior Project I (1 cr.)
• CENG 491 - Senior Project II (2 cr.)
• CENG 497 - Practical Training (1 cr.)

Concentration Electives (12 credits):

To complete the requirements of any of the three concentrations, students must complete a set of four courses comprise the following:

• Two concentration core course from the intended area of concentration (Group A) (6 cr.)
• One elective course from a set of courses relevant to the concentration (Group B) (3 cr.)
• One elective course from the elective courses offered by the Department (3 cr.)

Student should also carry out the Senior Graduation Project in their selected concentration subfield.

Construction Materials and Structural Concentrations

Group A:

• CENG 453 - Construction Materials and Quality Control II (3 cr.)
• CENG 454 - Structural Mechanics (3 cr.)

Group B:

• CENG 426 - Steel and Concrete Bridges (3 cr.)
• CENG 427 - Prefabricated, Water and Prestressed Concrete Structures (3 cr.)
• CENG 428 - Tall Buildings and Large Span Structures (3 cr.)
• CENG 462 - Applications in Geotechnical Engineering (3 cr.)
• CENG 479 - Assessment, Protection and Repair of Structures (3 cr.)
• CENG 494 - Selected Topics in Construction Engineering (3 cr.)
Construction Management and Technology

Group A:

- CENG 444 - Risk Management and Bidding Strategies (3 cr.)
- CENG 447 - Design, Modeling and Simulation of Construction Systems (3 cr.)

Group B:

- CENG 443 - Project Management for Multi-National Environments (3 cr.)
- CENG 445 - Resource Management (3 cr.)
- CENG 494 - Selected Topics in Construction Engineering (3 cr.)

Environmental Engineering:

Group A:

- CENG 472 - Design of Water Resources Systems (3 cr.)
- CENG 473 - Unit Operations in Environmental Engineering (3 cr.)

Group B:

- CENG 474 - Computer-aided design of environmental and sanitary systems (3 cr.)
- CENG 475 - Solid and Hazardous Wastes Engineering (3 cr.)
- CENG 494 - Selected Topics in Construction Engineering (3 cr.)

Science Elective (3 credits)

Students should take a science elective course of total 3 credits selected from a set of courses accepted by the department

General Electives (0-6 credits):

Students may take courses of their selection to satisfy program requirement of 162 credit hours.

Dual Degree Option BSc/CENG-MPA

Master's Program in Development Practice (MDP) Option

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 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. Those interested in this option are required
to complete a summer work assignment for Fall practicum 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. The program prepares students for careers in public service 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 MDP option 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. The following course sequence has been developed for the MDP option, but students should consult their advisor in CENG to ensure that all SSE requirements are met:

**SEMESTER IX**

- CENG 424 Methods & Equipment for Construction II
- xxxx xxx Eng. Concentration 1 elective
- CENG 448 Financial Management and Accounting in Construction (MPA credit)
- CENG xxx Elective (1)
- CENG 431 Intro. to Transportation
- CENG 490 Senior Thesis I (Capstone Core Level I )
- CENG 497 Industrial Training (Practicum)

**SEMESTER X**

- xxxx xxx Engineering Concentration 2
- CENG 567 Construction Leadership and Management/Elective 2
- CENG 491 Senior Thesis II (Capstone Core Level II )
- PPAD 506 Essentials of Public Policy and Administration (MPA credit)
- PPAD 500 Research Methods for Public Policy and Administration (MPA credit)
- xxxx xxx Science elective (from MDP list)
- Summer internship – public/NGO management focus and participation in MDP colloquium (MPA credit through 590)

**SEMESTER XI**

- PPAD 590 Practicum (Capstone Level II) (MPA Credit)
- ENGR 516 Engineering for Sustainable Development (MPA Credit)
- PPAD 570 Global Classroom (MPA Credit)
- xxxx xxx Science elective (from MDP list)
- PPAD 598 Thesis Research Seminar (MPA Credit)

**SEMESTER XII**

- PPAD 514 Human Resource Management for Government and Nonprofit Organizations (MPA Credit)
- PPAD 516 Core Concepts and Applications for Social and Environmental Policy (MPA Credit)
- PPAD 517 NGO Management (MPA Credit)
- PPAD 599 Thesis (MPA Credit)

Summer thesis work, if needed, and participation in MDP colloquium

*xxx indicates elective within the respective program*

Lists of MDP-relevant courses will be provided to students in the program prior to registration for each semester, based on offerings available in the appropriate departments.
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. The following requirements must be satisfied for joining and continuing in 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 (ENGR 115, AENG 251 and AENG 273) to continue in the minor.

The Minor requires completion of 17 credit hours. These are:

Basic Architectural Design Requirement (7 cr. hours):

All of the following courses:

- AENG 251 - Introduction to Architectural Design (3 cr.)
- AENG 273 - Digital Representation Tools for Architects (2 cr.)
- ENGR 115 - Descriptive Geometry and Engineering Drawing (2 cr.)

Background Humanities and Fine Arts Elective Requirement (3 cr. hours):

One of the following courses:

- AENG 222 - Architecture: Art or Engineering (3 cr.)
- ARIC 270-271 - Introduction to Islamic Art and Architecture (3 cr. per semester)
- ARTV 222 - Architecture: Art or Engineering (3 cr.)
- ARTV 314 - Modern and Contemporary Architecture (3 cr.)
- EGPT 361 - Art and Architecture of Ancient Egypt I (3 cr.)
- EGPT 362 - Art and Architecture of Ancient Egypt II (3 cr.)

Main Architectural Design Requirement (7 cr. hours)
All of the following courses:

- AENG 351 - Architectural Design Studio I (4 cr.)
- AENG 420 - Design of Interior Spaces (3 cr.)

Notes:

Construction Engineering students may not count the main architectural design courses (AENG 351 & AENG 420) for both the Construction Engineering Major and the Architectural Design Minor.

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

- Detailed knowledge in management, systems, design and materials in construction engineering.
- Extensive knowledge in an area of student interest from one of the fields involved in construction engineering.
- Awareness of the local and global context in which construction engineering is practiced, 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- 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 400-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 and Architectural 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 to provide the graduates of the program with:

- A broad knowledge of modern computational and experimental methods in engineering.
- Extensive knowledge in construction management & systems and in structural engineering & construction materials
- In-depth understanding of the research techniques and data analysis in construction engineering
- 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

A candidate for the master’s program in Construction Engineering must have a B.Sc. degree in civil, construction or architectural engineering. Students who have some deficiency in their undergraduate training but are well-qualified in other respects may be admitted provisionally. The Department of Construction and Architectural Engineering 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 (6 credit hours)

All students select two out of the following four ENGR core courses:

- ENGR 511 - Computational Methods in Engineering (3 cr.)
- ENGR 512 - Experimental Methods in Engineering (3 cr.)
- ENGR 516 - Engineering for a Sustainable Environment (3 cr.)
• ENGR 518 - Engineering Statistics (3 cr.)

II- Concentration Courses (12 credit hours)

Students should select a minimum of four courses from any of the courses of the following subfields in Construction Engineering:

Construction Management and Systems

• CENG 570 - Advanced Construction Management (3 cr.)
• CENG 571 - Advanced Systems Analysis for Construction Engineering (3 cr.)
• CENG 572 - Claims and Disputes in the Construction Industry (3 cr.)
• CENG 574 - Methods and Equipment for Construction (3 cr.)
• CENG 575 - Techniques of Planning, Scheduling and Control (3 cr.)
• CENG 576 - Advanced Systems for Construction (3 cr.)
• CENG 578 - Resource Management for Construction Projects (3 cr.)

Structural Engineering and Construction Materials

• CENG 573 - Advanced Construction and Building Materials (3 cr.)
• CENG 577 - The Finite Element Method in Structural Engineering (3 cr.)
• CENG 579 - Assessment, Protection and Repair of Structures (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 400-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.

A minimum of one course must be selected from the concentration courses in Construction Engineering

• CENG 592 - Advanced Topics in Construction Engineering (3 cr.)

May include:

• Geotechnical Engineering
• Construction Technology Analysis and Development
• Advanced Structural Design and Construction

Thesis
Graduate thesis work is an important and required part of the Construction Engineering Master of Science degree program. Each student must submit a thesis topic that has been approved by a faculty advisor by the end of the first academic year. Various research topics are discussed in ENGR 590 and 591, Graduate Thesis Seminar I and II. Students must register in ENGR 590 before submitting a thesis topic and in ENGR 591 during execution of the thesis research to present their thesis plan. To ensure adequate faculty consultation on the thesis, the student must register for CENG 599, Graduate Thesis, by the completion of 18 credit hours. Students must register in CENG 599 for at least two semesters. The first two registrations in CENG 599 must be for three credit hours, after that CENG 599 is taken for one credit hour each semester until completion of the program requirements.

Department of Electronics Engineering

Department of Electronics Engineering
School of Sciences and Engineering

Professors: H. Amer, Y. Ismail
Associate Professors: S. Abdel Azeem, A. Abou-Auf, M. Anis, A. Darwish (Chair), A. Elezabi, Y. Gadallah
Assistant Professor: K. Seddik

Since the discovery of the electron in 1897, and the invention of the transistor in 1947, Electronics 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 Engineering program at AUC is to provide students with the highest quality education. The Electronics 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. EENG graduates will be prepared for a career in Egypt or abroad.

Bachelor of Science

Electronics Engineering (B.S)

Bachelor of Science

To achieve the mission of Electronics 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 Engineering (that integrate theory and laboratory wherever possible) cover electromagnetics, circuits, electronics, digital design and communications. Courses in electric machinery, classical control, computer systems, the capstone senior thesis and industrial internship are also required. State-of-the-art electronics engineering elective courses provide seniors and advanced undergraduates the opportunity to develop a thrust in advanced electronics, communication systems and computers.
The specific objectives of the program are to prepare graduates to meet the expectations of employers and to pursue advanced study, if desired.

Electronics Engineering accepts high school students with science/mathematics background. Undeclared students may also be accepted to the program when they finish criteria courses set by the department. Admission to the program is supervised by the department and depends on available places and student's performance record.

A total of 162 credits are required for the bachelor’s degree in Electronics Engineering:

**Core Curriculum Requirements (30-42 credits)**

The capstone requirement will be satisfied by EENG 490 and 491 (Senior Project)

**Engineering Core Requirements (57 credits)**

- CHEM 105 - General Chemistry I (3 cr.)
- CHEM 115L - General Chemistry Laboratory (1 cr.)
- CSCE 106 - Fundamentals of Computer Science (3 cr.)
- CSCE 110 - Programming Fundamentals (3 cr.)
- ENGR 101 - Introduction to Engineering (1 cr.)
- ENGR 115 - Descriptive Geometry and Engineering Drawing (2 cr.)
- ENGR 212 - Engineering Mechanics I (Statics) (3 cr.)
- ENGR 214 - Engineering Mechanics II (Dynamics) (3 cr.)
- ENGR 313 - Engineering Analysis and Computation I (3 cr.)
- ENGR 345 - Engineering Economy (3 cr.)
- ENGR 364 - Fundamentals of Thermofluids (3 cr.)
- MACT 131 - Calculus I (0/3)
- MACT 132 - Calculus II (3 cr.)
- MACT 231 - Calculus III (3 cr.)
- MACT 232 - Calculus IV (3 cr.)
- MACT 233 - Differential Equations (3 cr.)
- MACT 317 - Probability and Statistics (3 cr.)
- MGMT 307 - Management Fundamentals (3 cr.)
- PHYS 111 - Classical Mechanics, Sound and Heat (3 cr.)
- PHYS 112 - Electricity and Magnetism (3 cr.)
- PHYS 123L - General Physics Laboratory I (1 cr.)
- PHYS 124L - General Physics Laboratory II (1 cr.)
- PHYS 214 - Waves and Optics (3 cr.)

**Concentration Requirements (54 credits)**

(EENG 490 and 491 are counted within the university core)

- EENG 210 - Digital Logic Design (3 cr.)
- EENG 215 - Circuit Analysis I (3 cr.)
- EENG 216 - Circuit Analysis II (3 cr.)
• EENG 218L - Digital Logic Design Lab (1 cr.)
• EENG 219L - Circuit Analysis Lab (1 cr.)
• EENG 315 - Electronics I: Basic Electronic Devices & Circuits (3 cr.)
• EENG 316 - Electronics II: Analog Circuits (3 cr.)
• EENG 318 - VLSI Design (3 cr.)
• EENG 319L - Electronics Lab (1 cr.)
• EENG 320 - Linear Systems Analysis (3 cr.)
• EENG 321 - Automatic Control (3 cr.)
• EENG 341 - Electromagnetic Theory I (3 cr.)
• EENG 352 - Computer Organization and Assembly Language Programming (3 cr.)
• EENG 360 - Power and Machines (3 cr.)
• EENG 420 - Fundamentals of Communications I (3 cr.)
• EENG 421 - Fundamentals of Communications II (3 cr.)
• EENG 432 - Computer Communication Networks (3 cr.)
• EENG 439L - Communications Lab (1 cr.)
• EENG 442 - Electromagnetic Waves (3 cr.)
• EENG 453 - Microcontroller System Design (3 cr.)
• EENG 459L - Microcontroller System Design Lab (1 cr.)
• EENG 490 - Senior Project I (1 cr.)
• EENG 491 - Senior Project II (2 cr.)
  The credit hours in EENG 490/491 are not counted among the concentration credit hour requirements as they are counted in the core curriculum credit hour requirements
• EENG 497 - Industrial Internship (1 cr.)

Concentration Electives (12 credits)

• EENG 404L - Photonics and Optical Communication Laboratory (1 cr.)
• EENG 410 - Solid-State Devices (3 cr.)
• EENG 413 - Testing of Digital Circuits (3 cr.)
• EENG 414 - High Level Digital ASIC Design Using CAD (3 cr.)
• EENG 415 - Integrated Circuit Fabrication: Materials and Processes (3 cr.)
• EENG 416 - Advanced ASIC Design (3 cr.)
• EENG 433 - Telecommunications Systems (3 cr.)
• EENG 434 - Optical Communication Systems (3 cr.)
• EENG 436 - Mobile Communication Systems (3 cr.)
• EENG 447 - Microwave Systems (3 cr.)
• EENG 455 - Computer Architecture (3 cr.)
• EENG 456 - Digital Control Systems (3 cr.)
• EENG 458L - Computer Architecture Lab (1 cr.)
• EENG 480 - Special Problems in Electronics Engineering (1-3 cr.)
• EENG 494 - Selected topics in Electronics Engineering (3 cr.)

General Electives (0-9 credits)

Master of Engineering
Electronics Engineering (M. Eng.)

The Master of Engineering Degree in Electronics 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.

1. Program Objectives

The objectives of the Master of Engineering Degree in Electronics Engineering are to provide the graduates of the program with:

- Detailed knowledge in product, systems, design and materials in electronics engineering.
- Extensive knowledge in an area of student interest from one of the fields involved in electronics engineering.
- Awareness of the local and global context in which electronics engineering is practiced, 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.

2. Admission

Admission requirements are the same as those for the Master of Science Program.

3. 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 511 - Computational Methods in Engineering (3 cr.)
- ENGR 512 - Experimental Methods in Engineering (3 cr.)
- ENGR 516 - Engineering for a Sustainable Environment (3 cr.)
- ENGR 518 - Engineering Statistics (3 cr.)

Concentration Courses** (30 credit hours)

Candidates must select at least eight courses out of the following EENG course list:

- EENG 510 - Advanced Solid-State Devices (3 cr.)
- EENG 516 - Analog Integrated Circuit Design (3 cr.)
- EENG 517 - Digital Integrated Circuit Design (3 cr.)
- EENG 518 - Advanced Integrated Circuit Design (3 cr.)
- EENG 520 - Advanced Digital Communications (3 cr.)
- EENG 521 - Wireless Communication Systems (3 cr.)
- EENG 522 - Stochastic Processes for Engineers (3 cr.)
- EENG 524 - Enabling Technologies for High Date Rate Communications (3 cr.)
- EENG 525 - Digital Signal Processing (3 cr.)
- EENG 526 - Information Theory and Coding (3 cr.)
- EENG 530 - Advanced Computer Networks (3 cr.)
- EENG 541 - Microwave Circuit Analysis and Design (3 cr.)
- EENG 547 - RF and Microwave Systems (3 cr.)
- EENG 548 - RF Integrated Circuit Design (3 cr.)
- EENG 549 - Antennas Design and Applications (3 cr.)
- EENG 553 - Fault-tolerant Computing and Reliability Modeling (3 cr.)
- EENG 556 - Networked Control Systems Design & Applications (3 cr.)
- EENG 594 - Advanced Topics in Electronics Engineering (3 cr.)

**Note:**

Subject to the approval of the advisor and graduate director the candidate is permitted to take six credit hours towards the following two options:

1. one 400-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 (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 EENG department.

**Electronics Engineering with Concentration in Management of Technology (M. Eng.)**

The Master of Engineering Degree in Electronics Engineering with Concentration in Management of Technology prepares students for higher level professional practice in local and international markets. It is intended for electronics engineers who wish to master the practice in their field of specialty, as well as understanding the notion of technology and innovation as key to wealth creation, competitiveness and sustainable economic and social development. Potential students can come from academia, multinational corporations, government sectors, and owners, managers and employees of private/public sector companies.

**1. Program Objectives**

The objectives of the program are:

- To provide students with solid knowledge in product and systems design in electronics engineering.
• To train students to solve unstructured engineering problems, think critically, function well in a team, and communicate effectively.
• To educate students on high standard of written and oral communication on technical matters.
• To enable students to manage and guide technology-based organization in a changing environment.
• To expose students to methods of integrating technology and business strategies.
• To educate students on methods to develop an organizational structure and necessary functions that permit sustainable success.

2. Admission

Admission requirements are the same as those for the Master of Science in Electronics Engineering program.

3. Courses (33 credit hours)

A minimum of eleven courses (33 credit hours) are required.

The EENG courses are selected from the following categories:

Concentration Courses* (24 credit hours)

Candidates must select at least 7 courses out of the following list of 15 courses:

• EENG 510 - Advanced Solid-State Devices (3 cr.)
• EENG 516 - Analog Integrated Circuit Design (3 cr.)
• EENG 517 - Digital Integrated Circuit Design (3 cr.)
• EENG 518 - Advanced Integrated Circuit Design (3 cr.)
• EENG 520 - Advanced Digital Communications (3 cr.)
• EENG 521 - Wireless Communication Systems (3 cr.)
• EENG 522 - Stochastic Processes for Engineers (3 cr.)
• EENG 524 - Enabling Technologies for High Data Rate Communications (3 cr.)
• EENG 525 - Digital Signal Processing (3 cr.)
• EENG 526 - Information Theory and Coding (3 cr.)
• EENG 530 - Advanced Computer Networks (3 cr.)
• EENG 541 - Microwave Circuit Analysis and Design (3 cr.)
• EENG 547 - RF and Microwave Systems (3 cr.)
• EENG 548 - RF Integrated Circuit Design (3 cr.)
• EENG 549 - Antennas Design and Applications (3 cr.)
• EENG 553 - Fault-tolerant Computing and Reliability Modeling (3 cr.)
• EENG 556 - Networked Control Systems Design & Applications (3 cr.)
• EENG 594 - Advanced Topics in Electronics Engineering (3 cr.)

*Note:

Subject to the approval of the advisor and graduate director the candidate is permitted to take three credit hours from one of the following two options:
1. one 400-level or graduate-level course (3 credit hours) from outside the department and within the School of Sciences and Engineering;
2. Graduate Independent Study (EENG 580) course (1 to 3 credit hours).

MoT Courses (9 credit hours)

Candidates must select 3 courses out of the following list:

- EENG 570 - New Product Design and Development (3 cr.)
- EENG 571 - Technology and Innovation Management (3 cr.)
- EENG 572 - Strategic Management of Innovation (3 cr.)
- EENG 573 - Entrepreneurship and Innovation (3 cr.)

Master of Science

Electronics Engineering (M. Sc.)

A candidate for the master’s program in Electronics Engineering must have a degree in electrical or computer engineering or related discipline. Students who have some deficiency in their undergraduate training but are well-qualified in other respects may be admitted provisionally. The Electronics Engineering Department may prescribe a program of noncredit work to make up for the deficiency.

1. Program Objectives

The objectives of the Master of Science Degree in Electronics Engineering are to provide the graduates of the program with:

- A broad knowledge of modern computational and experimental methods in engineering.
- Extensive knowledge in one of the following specializations: VLSI and nanosystems, communication systems, microwave and RF systems, digital and network systems.
- Deep understanding of the research techniques and data analysis in the area of specialization.
- 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.

2. Admission

A candidate for the master’s program in Electronics 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 Engineering Department may prescribe a program of noncredit work to make up for the deficiency.

3. 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 one out of the following four ENGR core courses:

- ENGR 511 - Computational Methods in Engineering (3 cr.)
- ENGR 512 - Experimental Methods in Engineering (3 cr.)
- ENGR 516 - Engineering for a Sustainable Environment (3 cr.)
- ENGR 518 - Engineering Statistics (3 cr.)

**Concentration Courses** (21 credit hours)

Candidates must select at least five courses out of the following EENG course list:

- EENG 510 - Advanced Solid-State Devices (3 cr.)
- EENG 516 - Analog Integrated Circuit Design (3 cr.)
- EENG 517 - Digital Integrated Circuit Design (3 cr.)
- EENG 518 - Advanced Integrated Circuit Design (3 cr.)
- EENG 520 - Advanced Digital Communications (3 cr.)
- EENG 521 - Wireless Communication Systems (3 cr.)
- EENG 522 - Stochastic Processes for Engineers (3 cr.)
- EENG 524 - Enabling Technologies for High Date Rate Communications (3 cr.)
- EENG 525 - Digital Signal Processing (3 cr.)
- EENG 526 - Information Theory and Coding (3 cr.)
- EENG 530 - Advanced Computer Networks (3 cr.)
- EENG 541 - Microwave Circuit Analysis and Design (3 cr.)
- EENG 547 - RF and Microwave Systems (3 cr.)
- EENG 548 - RF Integrated Circuit Design (3 cr.)
- EENG 549 - Antennas Design and Applications (3 cr.)
- EENG 553 - Fault-tolerant Computing and Reliability Modeling (3 cr.)
- EENG 556 - Networked Control Systems Design & Applications (3 cr.)
- EENG 594 - Advanced Topics in Electronics Engineering (3 cr.)

**Note:**

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:

1. one 400-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 (EENG 580) (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 EENG department.
4. Thesis (9 credit hours)

Graduate thesis work is an important and required part of the Electronics Engineering Master of Science degree program. Each student must submit a thesis topic that has been approved by a faculty advisor by the end of the first academic year. Various research topics are discussed in ENGR 590 (2 credits) and 591 (1 credit), Graduate Thesis Seminar I and II. Students must register in ENGR 590 before submitting a thesis topic and in ENGR 591 during execution of the thesis research to present their thesis plan. To ensure adequate faculty consultation on the thesis, the student must register for EENG 599, Graduate Thesis, by the completion of 18 credit hours. Students must register in EENG 599 for at least two semesters. The first two registrations in EENG 599 must be for three credit hours, after that EENG 599 is taken for one credit hour each semester until completion of the program requirements.

Department of Mathematics and Actuarial Science

Department of Mathematics and Actuarial Science
School of Sciences and Engineering

Distinguished University Professor: A. Hadi (Chair)
Professors: H. Abdel-Malek, M. Hebert (Emeritus), M. Moustafa, A. Schuster
Associate Professors: Z. Amin (Director of Actuarial Science Program), G. DeYoung, W. Lotfallah
Assistant Professors: R. Belhachemi, N. El-Sissi, M. Sadek

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.

The Department of Mathematics and Actuarial Science offers:

1. A Bachelor of Science degree in Mathematics
2. A Bachelor of Science degree in Actuarial Science
3. A Minor in Mathematics
5. A Statistics and Data Analysis Option

Bachelor of Science
Actuarial Science (B.S.)

Bachelor of Science in Actuarial Science

The life of nearly every one 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: http://www.aucegypt.edu/sse/math/majmin/Pages/BachelorofScienceinActuarialScience.aspx 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, business law, accounting, and marketing. Consequently, the Actuarial Science Program cuts across the School of Science and Engineering and the School of Business.

What a major in Actuarial Science offers:
To summarize, 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 companies, actuarial consulting firms, banks and other financial institutions, as well as government agencies like the Egyptian Insurance Supervisory Authority (EISA), 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, business law, accounting, and marketing are essential.
- completing the first five certification examinations jointly offered by the Society of Actuaries and Casualty Actuarial Society, an important step toward actuarial certification and toward obtaining the actuarial license from the Egyptian Insurance Supervisory Authority.

A total of 130 credits is required for the bachelor’s degree in actuarial science. Students may be exempted from the MACT 131 requirement based on high school certificate and score in mathematics or by passing a placement examination. See the Actuarial Science’s website http://www.aucegypt.edu/sse/math/majmin/Pages/BachelorofScienceinActuarialScience.aspx for a sample schedule for completing the requirements for the B.Sc. degree in Actuarial Science.

Core Curriculum (31-43 credits)
Actuarial Science students must take 1 credit hour of Natural Science lab.

Concentration Requirements (60 credits)

- MACT 112 - Statistical Reasoning (3 cr.)
- MACT 131 - Calculus I (0/3)
- MACT 132 - Calculus II (3 cr.)
- MACT 231 - Calculus III (3 cr.)
- MACT 233 - Differential Equations (3 cr.)
• MACT 240 - Linear Algebra (3 cr.)
• MACT 306 - Applied Probability (3 cr.)
• MACT 307 - Statistical Inference (3 cr.)
• MACT 321 - Mathematics of Investment (3 cr.)
• MACT 406 - Stochastic Processes (3 cr.)
• MACT 407 - Insurance Loss Models I (3 cr.)
• MACT 408 - Insurance Loss Models II (3 cr.)
• MACT 412 - Mathematical Modeling (3 cr.)
• MACT 421 - Mathematics of Derivatives Pricing I (3 cr.)
• MACT 422 - Mathematics of Derivatives Pricing II (3 cr.)
• MACT 423 - Life Contingencies I (3 cr.)
• MACT 424 - Life Contingencies II (3 cr.)
• MACT 427 - Applied Regression Methods (3 cr.)
• MACT 428 - Analysis of Time Series Data (3 cr.)
• MACT 429 - Applied Multivariate Analysis (3 cr.)

Collateral Requirements (27 credits)

• ACCT 201 - Financial Accounting (3 cr.)
• CSCE 106 - Fundamentals of Computer Science (3 cr.)
• ECON 201 - Introduction to Macroeconomics (3 cr.)
• ECON 202 - Introduction to Microeconomics (3 cr.)
• ECON 301 - Intermediate Macroeconomic Theory (3 cr.)
• ECON 302 - Intermediate Microeconomic Theory (3 cr.)
• FINC 303 - Business Finance I (3 cr.)
• FINC 404 - Investment Analysis (3 cr.)
• FINC 415 - Portfolio Theory and its Applications (3 cr.)

Electives (0-12 credits)

Courses to be chosen in consultation with the advisor. The following courses are recommended as electives:

• ACCT 202 - Managerial Accounting (3 cr.)
• CSCE 110 - Programming Fundamentals (3 cr.)
• CSCE 210 - Data Structures and Algorithms (3 cr.)
• CSCE 253 - Fundamentals of Database Systems (3 cr.)
• CSCE 453 - Database Systems (3 cr.)
• ECON 303 - Money and Banking (3 cr.)
• ECON 318 - Introduction to Econometrics (3 cr.)
• ECON 403 - International Trade (3 cr.)
• FINC 408 - International Finance (3 cr.)
• MACT 304 - Numerical Methods (3 cr.)
• MACT 409 - Selected Topics in Mathematics (3 cr.)
• MACT 410 - Guided Studies in Mathematics (1-3 cr.)
• MACT 411 - Selected Topics in Actuarial Science (3 cr.)
• MACT 495 - Senior Thesis (3 cr.)
• MACT 497 - Practical Internship (3 cr.)
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- MGMT 307 - Management Fundamentals (3 cr.)
- MGMT 404 - Human Resources Management (3 cr.)
- MKTG 302 - Principles of Marketing (3 cr.)
- MKTG 405 - Marketing Research (3 cr.)
- MOIS 305 - Introduction to Information Systems/Technology (3 cr.)
- MOIS 406 - Management Information Systems and Database Management (3 cr.)
- MOIS 432 - Information & Decision Support Systems (3 cr.)

Mathematics, with an option in Statistics & 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.

More information on Mathematics as a professional activity and on career opportunities is available on the department webpage:

http://www.aucegypt.edu/sse/math/alumni/Pages/default.aspx

A total of 130 credits is required for the bachelor’s degree in mathematics. Students may be exempted from the MACT 131 requirement based on high school certificate and score in mathematics or by passing a placement examination.

Core Curriculum (30-42 credits)

The science requirements of the core curriculum electives are satisfied by the collateral requirements of the major.

Concentration Requirements (42 credits)

- CSCE 106 - Fundamentals of Computer Science (3 cr.)
- MACT 131 - Calculus I (0/3)
- MACT 132 - Calculus II (3 cr.)
- MACT 200 - Discrete Mathematics (3 cr.)
- MACT 231 - Calculus III (3 cr.)
- MACT 232 - Calculus IV (3 cr.)
- MACT 233 - Differential Equations (3 cr.)
- MACT 240 - Linear Algebra (3 cr.)
- MACT 307 - Statistical Inference (3 cr.)
- MACT 304 - Numerical Methods (3 cr.)
- MACT 306 - Applied Probability (3 cr.)
- MACT 401 - Complex-Function Theory (3 cr.)
- MACT 403 - Modern Algebra (3 cr.)
- MACT 431 - Real Analysis I (3 cr.)

Concentration Electives (21 credits)
To be chosen from the upper level MACT courses in consultation with the advisor. Students majoring in another Science or Engineering program may transfer up to 12 approved credits from their program toward the completion of these 21 credits if double majoring in Mathematics. See the Mathematics and Actuarial Science Department for details.

Collateral Requirements (14 to 16 Credits)

To be chosen among the following:

- BIOL 104 - The Unity of Life (3 cr. + 1 cr. lab)
- BIOL 105 - Diversity of Life (3 cr. + 1 cr. lab)
- CHEM 105 - General Chemistry I (3 cr.)
- CHEM 106 - General Chemistry II (3 cr.)
- CHEM 115L - General Chemistry Laboratory (1 cr.)
- CHEM 116L - General Chemistry Laboratory (1 cr.)
- CSCE 110 - Programming Fundamentals (3 cr.)
- CSCE 210 - Data Structures and Algorithms (3 cr.)
- PHYS 111 - Classical Mechanics, Sound and Heat (3 cr.)
- PHYS 112 - Electricity and Magnetism (3 cr.)
- PHYS 123L - General Physics Laboratory I (1 cr.)
- PHYS 124L - General Physics Laboratory II (1 cr.)
- SCI 105 - Science and Technology of Ancient Egypt (3 cr.)

Electives (9 to 23 credits)

Courses to be chosen in consultation with the adviser, excluding MACT 100, MACT 101.

Statistics and Data Analysis Option

Within the bachelor degree in Mathematics, students may choose the Statistics and Data Analysis Option by taking the following courses:

The 21 credits of concentration electives must include:

- MACT 427 - Applied Regression Methods (3 cr.)
- MACT 429 - Applied Multivariate Analysis (3 cr.)

and a minimum of 9 credits selected from the following:

- MACT 308 - Linear Programming (3 cr.)
- MACT 310 - Operations Research (3 cr.)
- MACT 406 - Stochastic Processes (3 cr.)
- MACT 409 - Selected Topics in Mathematics (3 cr.)
- MACT 410 - Guided Studies in Mathematics (1-3 cr.)
- MACT 412 - Mathematical Modeling (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.

Requirements (15 credits):

- MACT 112 - Statistical Reasoning (3 cr.)
- MACT 427 - Applied Regression Methods (3 cr.)

and either

- MACT 306 - Applied Probability (3 cr.)
- MACT 307 - Statistical Inference (3 cr.)

or

- MACT 317 - Probability and Statistics (3 cr.)

In addition to 3-6 credits from:

- MACT 406 - Stochastic Processes (3 cr.)
- MACT 429 - Applied Multivariate Analysis (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):

For students majoring in the Science & Engineering School:

- MACT 233 - Differential Equations (3 cr.)
- MACT 240 - Linear Algebra (3 cr.)
- 3 courses among:
- MACT 232 - Calculus IV (3 cr.)

For students majoring in Economics:
- MACT 112 - Statistical Reasoning (3 cr.)
- MACT 240 - Linear Algebra (3 cr.)
- ECON 316 - Mathematics for Economists II (3 cr.)
  and 2 courses among: 300-400 level MACT courses and
- ECON 416 - Mathematical Economics (3 cr.)

For all the other students:

- MACT 112 - Statistical Reasoning (3 cr.)
- MACT 131 - Calculus I (0/3)
  and any 3 MACT courses (excluding MACT 100 and MACT 101)

**Department of Mechanical Engineering**

**Department of Mechanical Engineering**
**School of Sciences and Engineering**

*Professors:* A. Abdel Hamid (sabbatical), H. Elayat, A. Elimam, M. Fouad, M. Farag (Director of Engineering Services), S. El-Haggar (Chair), M. Habib, L. Gaafar, A. Nassef, H. Salem, A. Serag-Eldin, M. Younan, A. Esawi

*Associate Professor:* M. Arafa

*Assistant Professors:* L. El-Gabry, M. Fawzy, M. Kamel, M. El-Morsi

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: [www.aucegypt.edu/sse/meng/Pages/default.aspx](http://www.aucegypt.edu/sse/meng/Pages/default.aspx)

**Bachelor of Science**

**Mechanical Engineering, with concentrations in Design, Industrial, Materials and Manufacturing, Mechatronics, and Power (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 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 power 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 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 microprocessor as well as manufacturing techniques.

The program is accredited by both the Accreditation Board for Engineering and Technology (ABET) and the Supreme Council of Egyptian Universities.

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.

A student who intends to major in Mechanical Engineering must submit a Major declaration form upon completion of 45 credit hours. A student should declare his/her concentration(s) after completing 80 credit hours and before completing 120 credit hours.

A total of 162 credits is required for the bachelor’s degree in mechanical engineering:

**Core Curriculum (30-42 credits)**

The science requirement of the core curriculum electives is met within the engineering core requirements. The category 1: Research and Practical Experience (3 credit hours) of the core requirement is covered by MENG 490 (1 credit hour), and MENG 491 (2 credit hours).

**Engineering Core Requirements (52 credits)**

- CHEM 105 - General Chemistry I (3 cr.)
- CHEM 115L - General Chemistry Laboratory (1 cr.)
- CSCE 106 - Fundamentals of Computer Science (3 cr.)
- ENGR 101 - Introduction to Engineering (1 cr.)
- ENGR 115 - Descriptive Geometry and Engineering Drawing (2 cr.)
- ENGR 212 - Engineering Mechanics I (Statics) (3 cr.)
- ENGR 214 - Engineering Mechanics II (Dynamics) (3 cr.)
- ENGR 229 - Strength and Testing of Materials (4 cr.)
- ENGR 261 - Fundamentals of Fluid Mechanics (3 cr.)
- ENGR 313 - Engineering Analysis and Computation I (3 cr.)
- ENGR 318 - General Electrical Engineering (3 cr.)
- ENGR 345 - Engineering Economy (3 cr.)
- MACT 131 - Calculus I (0/3)
- MACT 132 - Calculus II (3 cr.)
- MACT 231 - Calculus III (3 cr.)
- MACT 233 - Differential Equations (3 cr.)
- MACT 317 - Probability and Statistics (3 cr.)
- PHYS 111 - Classical Mechanics, Sound and Heat (3 cr.)
- PHYS 112 - Electricity and Magnetism (3 cr.)
• PHYS 123L - General Physics Laboratory I (1 cr.)
• PHYS 124L - General Physics Laboratory II (1 cr.)

Concentration Requirements (53 credits)

• MENG 215 - Mechanical Engineering Drawing (1 cr.)
• MENG 327 - Engineering Materials (3 cr.)
• MENG 399 - Fundamentals of Manufacturing Processes (3 cr.)
• MENG 342 - Quality and Process Control (3 cr.)
• MENG 346 - Engineering and Project Management (3 cr.)
• MENG 355 - Mechanics of Materials (3 cr.)
• MENG 356 - Mechanical Design I (3 cr.)
• MENG 361 - Fundamentals of Thermodynamics (3 cr.)
• MENG 362 - Applied Fluid Mechanics (3 cr.)
• MENG 365 - Applied Thermodynamics (3 cr.)
• MENG 372 - Mechanical Systems (3 cr.)
• MENG 375 - System Dynamics (3 cr.)
• MENG 428 - Selection of Materials and Processes for Design (3 cr.)
• MENG 457 - Mechanical Design II (3 cr.)
• MENG 466 - Heat Transfer (4 cr.)
• MENG 490 - Senior Project I (1 cr.)
• MENG 491 - Senior Project II (2 cr.)
• MENG 497 - Industrial Training (1 cr.)
• PHYS 215 - Introduction to Electronics (3 cr.)
• PHYS 221L - Electronics Laboratory I (2 cr.)

Concentration Electives (21 credit hours)

Courses must be selected from at least two of the five available concentrations of courses. A minimum of twelve credits must be taken from one concentration as follows:

Design Concentration:

A minimum of nine credits from courses in group A of the Design concentration and the remaining three credits from courses in either group of the concentration.

Group A:

• MENG 451 - Computer-Aided Design and Prototyping (3 cr.)
• MENG 453 - Finite Element Method and Applications in Design (3 cr.)
• MENG 455 - Design of Engineering Systems (3 cr.)
• MENG 475 - Applied Vibration Measurements, Analysis and Control (3 cr.)
• MENG 476 - Automatic Control Systems (3 cr.)

Group B:
- MENG 413 - Design of Renewable Energy Systems (3 cr.)
- MENG 427 - Failure of Mechanical Components (3 cr.)
- MENG 477 - Robotics: Design, Analysis and Control (3 cr.)
- MENG 458 - Integrated Design (3 cr.)
- MENG 494 - Selected Topics in Design (3 cr.)

Industrial Concentration:

Students are required to complete the six credits from group A courses of the Industrial concentration and six credits from its group B courses.

Group A:

- MENG 341 - Engineering Operations Research (3 cr.)
- MENG 445 - Production and Inventory Control (3 cr.)

Group B:

- MENG 344 - Work Analysis and Design (3 cr.)
- MENG 441 - Decision Support in Engineering Systems (3 cr.)
- MENG 442 - Quality and Reliability Engineering (3 cr.)
- MENG 443 - Systems Simulation (3 cr.)
- MENG 447 - Manufacturing System Automation (3 cr.)
- MENG 448 - Facilities Planning (3 cr.)
- MENG 449 - Maintenance Management Systems (3 cr.)

Materials and Manufacturing Concentration:

A minimum of six credits from group A courses of the Material and Manufacturing concentration and six from its group B courses.

Group A:

- MENG 421 - Ceramics and Composites (3 cr.)
- MENG 425 - Polymers and Composites (3 cr.)
- MENG 426 - Metals, Alloys and Composites (3 cr.)
- MENG 429 - Nanostructured Materials (3 cr.)

Group B:

- MENG 427 - Failure of Mechanical Components (3 cr.)
- MENG 432 - Materials, Processing, and Design (3 cr.)
- MENG 436 - Selected Topics in Materials and Manufacturing (3 cr.)
- MENG 439 - Advanced Manufacturing Processes (3 cr.)

Mechatronics Concentration:
Students are required to complete the nine credits from the courses in group A of the Mechatronics concentration and the remaining three credits from courses in group B.

Group A:

- MENG 476 - Automatic Control Systems (3 cr.)
- MENG 478 - Microcontrollers and Mechatronics systems (3 cr.)
- MENG 479 - Integrated Design of Electromechanical Systems (3 cr.)

Group B:

- EENG 456 - Digital Control Systems (3 cr.)
- MENG 439 - Advanced Manufacturing Processes (3 cr.)
- MENG 447 - Manufacturing System Automation (3 cr.)
- MENG 455 - Design of Engineering Systems (3 cr.)
- MENG 477 - Robotics: Design, Analysis and Control (3 cr.)

Power Concentration

Students are required to complete the nine credits from the courses in group A of the Power concentration and the remaining three credits from courses in group B.

Group A:

- MENG 411 - Turbo-Machinery (3 cr.)
- MENG 412 - Power Plant Technology (3 cr.)
- MENG 413 - Design of Renewable Energy Systems (3 cr.)

Group B:

- MENG 415 - Internal Combustion Engines (3 cr.)
- MENG 416 - Design of Mechanical Systems in Building (3 cr.)
- MENG 417 - Refrigeration and Air-conditioning (3 cr.)
- MENG 455 - Design of Engineering Systems (3 cr.)

Notes:

In addition, a minimum of six credits must be taken from another area of concentration.

Pending approval of department and relevance of topic, only one of the concentration electives may be substituted for by a MENG 492 course.

Students opting for more than one concentration will take a minimum of twenty four credits, such that the minimum requirements of each area of concentration are satisfied. Common courses may be double-counted.

General Electives (0-9 credits)
Minors

Mechatronics

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 477 - Robotics: Design, Analysis and Control (3 cr.)
- MENG 479 - Integrated Design of Electromechanical Systems (3 cr.)

Minor electives: a minimum of 3 credit-hour must be selected from the minor electives

- MENG 375 - System Dynamics (3 cr.)
- MENG 476 - Automatic Control Systems (3 cr.)
- MENG 478 - Microcontrollers and Mechatronics systems (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 EENG

- EENG 321 - Automatic Control (3 cr.)
- EENG 453 - Microcontroller System Design (3 cr.)

For Students from CSCE

- CSCE 427 - Introduction to Artificial Neural Networks (3 cr.)
For students from PHYS

- PHYS 315 - Modern Sensors (3 cr.)
- PHYS 318 - Instrumentation Systems and Control (3 cr.)

For students from PENG

- PENG 471 - Reservoir Simulation and Modeling (3 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- Engineering and Mechanical Engineering core (21 credits)

Students must complete 21 credits in graduate mechanical engineering courses.

II- Elective Courses (9 credit hours)
Students may elect to take three courses (9 credits). A minimum of two courses must be taken from offerings in mechanical engineering/engineering disciplines (including ENGR). No more than one 400-level course, not in the student’s undergraduate major may be taken for graduate credit, subject to approval of the advisor and department chair.

III- Capstone project (3 credits)

Students are required to attend the library and writing modules of ENGR 590 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

Mechanical Engineering, with specializations in Design, Industrial Engineering, Materials & Manufacturing Engineering, Mechatronics, and Power (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 provide the graduates of the program with:

- A broad knowledge of modern computational and experimental methods in engineering.
- Extensive knowledge in one of the following specializations: design, industrial engineering, materials and manufacturing or power and mechatronics.
- Deep understanding of the research techniques and data analysis in the area of specialization.
- 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

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- Engineering Core Courses (Minimum 3 credit hours)

All students select at least one out of the following four ENGR core courses:

- ENGR 511 - Computational Methods in Engineering (3 cr.)
- ENGR 512 - Experimental Methods in Engineering (3 cr.)
- ENGR 516 - Engineering for a Sustainable Environment (3 cr.)
- ENGR 518 - Engineering Statistics (3 cr.)

II- Mechanical Engineering Core Courses (Minimum 6 credit hours)

Students should select a minimum of two courses from one of the following mechanical engineering courses:

- MENG 517 - Engineering Systems Analysis and Design (3 cr.)
- MENG 522 - Materials in Design and Manufacturing (3 cr.)
- MENG 529 - Failure Analysis and Prevention (3 cr.)
- MENG 542 - Total Quality Management (3 cr.)
- MENG 560 - Applied Control, Vibration and Instrumentations (3 cr.)
- MENG 660 - Sustainability of Thermal Systems (3 cr.)

III- Technical Elective Core Courses (Minimum 9 credit hours in a given area)

Students should select a minimum of three courses from the following elective courses:

- MENG 521 - Advanced Topics in Mechanical Behavior of Engineering Materials (3 cr.)
- MENG 523 - Physical Metallurgy (3 cr.)
- MENG 526 - Computer Methods in Materials Engineering (3 cr.)
- MENG 527 - Composite Materials: Mechanics, Manufacturing, and Design (3 cr.)
- MENG 528 - Advanced Testing and Characterization Techniques (3 cr.)
- MENG 541 - Integrated Manufacturing Systems (3 cr.)
- MENG 543 - Systems Modeling and Optimization (3 cr.)
- MENG 545 - Production Systems Design (3 cr.)
- MENG 548 - Facilities Planning and Design (3 cr.)
- MENG 553 - Advanced Computer Aided Design (3 cr.)
- MENG 554 - Advanced Stress Analysis in Design and Manufacturing (3 cr.)
- MENG 555 - Analysis and Design of Dynamic Systems (3 cr.)
- MENG 557 - Engineering Design Methodologies (3 cr.)
- MENG 558 - Applied Finite Element Analysis for Engineers (3 cr.)
- MENG 561 - Robotics: Kinematics, Dynamics and Control (3 cr.)
- MENG 562 - Embedded Real Time Systems (3 cr.)
- MENG 563 - Modern Control Design (3 cr.)
- MENG 564 - Autonomous Robotics: Modeling, Navigation and Control (3 cr.)
- MENG 573 - Cogeneration and Energy Storage (3 cr.)
- MENG 575 - CFD and Turbulence Modeling (3 cr.)

IV- General Elective Courses (Maximum 6 credit hours)
The courses are selected from a set of graduate courses in all engineering disciplines, physical sciences, social sciences, management and other related graduate or 400-level courses subject to advisor and chair’s approval.

**Thesis**

Graduate thesis work is an important and required part of the Mechanical Engineering Master of Science degree program. Each student must submit a thesis topic that has been approved by a faculty advisor by the end of the first academic year. Various research topics are discussed in ENGR 590 and 591, Graduate Thesis Seminar I and II. Students must register in ENGR 590 before submitting a thesis topic and in ENGR 591 during execution of the thesis research to present their thesis plan. To ensure adequate faculty consultation on the thesis, the student must register for MENG 599, Graduate Thesis, by the completion of 18 credit hours. Students must register in MENG 599 continuously and for at least two semesters. The first two registrations in MENG 599 must be for three credit hours, after that MENG 599 is taken for one credit hour each semester until completion of the program requirements.

**Department of Petroleum and Energy Engineering**

**Department of Petroleum & Energy Engineering**
**School of Sciences and Engineering**

*Professor:* M. Nasrallah (Founding Chair and Schlumberger Endowed Chair)

*Professor of Practice:* T. El Kewidy

*Associate Professor:* A. Noah

*Assistant Professors:* M. Hassan, A. Salem

Petroleum and Energy Engineering department offers a B.Sc. in Petroleum Engineering and a concentration in Energy Resources. 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 curriculum has been approved by the Ministry of Higher Education, it is designed to meet the accreditation requirements for both the Supreme Council of Egyptian Universities, and the US Accreditation Board for Engineering and Technology (ABET).

**Bachelor of Science**

**Petroleum Engineering, with concentration in Energy Resources (B.S.)**
Bachelor of Science

The program provides high quality education for regional and international students with the capability of managing diversified operations in the petroleum, gas and energy related professions. Graduates are expected to satisfy the demanding market needs and will be able to compete for positions worldwide in one of the highest paying engineering professions. In addition to fostering creative thinking and providing motivation for an ongoing learning experience, the program is intended to develop the capabilities of students to work independently, adapt in multinational environment and acquire leadership qualities.

Students will be admitted to the program either through the AUC admissions office (gate admissions), after satisfying the general admission requirements and grade requirements in mathematics and sciences as declared by the department, or as undeclared and transfer students based on their performance record after successful completion of the criteria courses. Students are advised to consult with the department to ensure that admission criteria have been successfully met. A total of 162 credits must be successfully completed to be awarded a Bachelor of Science in Petroleum Engineering.

In addition to the B.Sc. degree in Petroleum Engineering, students will be granted a concentration in Energy Resources after completion of 9 credits from the courses listed under concentration electives.

Core curriculum requirements (30-42 credits)

Three credit hours of the capstone requirements will be satisfied by PENG 490 and 491 senior theses.

Engineering core requirements (48 credits)

- CHEM 105 - General Chemistry I (3 cr.)
- CHEM 115L - General Chemistry Laboratory (1 cr.)
- CHEM 203 - Organic Chemistry I (3 cr.)
- CSCE 106 - Fundamentals of Computer Science (3 cr.)
- ENGR 101 - Introduction to Engineering (1 cr.)
- ENGR 115 - Descriptive Geometry and Engineering Drawing (2 cr.)
- ENGR 212 - Engineering Mechanics I (Statics) (3 cr.)
- ENGR 214 - Engineering Mechanics II (Dynamics) (3 cr.)
- ENGR 261 - Fundamentals of Fluid Mechanics (3 cr.)
- ENGR 313 - Engineering Analysis and Computation I (3 cr.)
- ENGR 345 - Engineering Economy (3 cr.)
- MACT 131 - Calculus I (0/3)
- MACT 132 - Calculus II (3 cr.)
- MACT 231 - Calculus III (3 cr.)
- MACT 233 - Differential Equations (3 cr.)
- MACT 317 - Probability and Statistics (3 cr.)
- PHYS 111 - Classical Mechanics, Sound and Heat (3 cr.)
- PHYS 112 - Electricity and Magnetism (3 cr.)
- PHYS 123L - General Physics Laboratory I (1 cr.)
- PHYS 124L - General Physics Laboratory II (1 cr.)
Concentration requirements (75 credits)

- PENG 200 - Introduction to Petroleum Geology (2 cr.)
- PENG 218 - Electrical Engineering (2 cr.)
- PENG 219 - Fundamentals of Surveying (1 cr.)
- PENG 227 - Materials Engineering (3cr.)
- PENG 301 - Petroleum Geology and Exploration (3cr.)
- PENG 302 - Fluid and Rock Properties (3 cr.)
- PENG 303 - Fluid and Rock Lab (1 cr.)
- PENG 311 - Drilling Engineering I (3 cr.)
- PENG 313 - Drilling Engineering I Lab (1 cr.)
- PENG 320 - Well Logging (2cr. + 1cr.)
- PENG 322 - Oil and Gas Production (2cr. + 1cr. lab)
- PENG 331 - Reservoir Engineering and Recovery (3 cr.)
- PENG 332 - Well Completion and Workover (3 cr.)
- PENG 333 - Reservoir Simulation and Well Testing (3 cr.)
- PENG 334 - Reservoir Simulation and Well Testing lab (1 cr.)
- PENG 351 - Natural Gas Engineering (3 cr.)
- PENG 361 - Thermodynamics (3cr.)
- PENG 363 - Heat Transfer (3cr.)
- PENG 373 - Principles of Energy Engineering (3 cr.)
- PENG 374 - Corrosion and Oxidation Protection (3cr.)
- PENG 375 - Hydrogen and Fuel cells (3 cr.)
- PENG 411 - Drilling Engineering II (3 cr.)
- PENG 412 - Enhanced Oil Recovery (3 cr.)
- PENG 451 - Petroleum and Gas Transmission and Storage (3 cr.)
- PENG 461 - Reservoir Economics, Management, & Risk Analysis (3 cr.)
- PENG 462 - Renewable and Alternative Energy (3 cr.)
- PENG 471 - Reservoir Simulation and Modeling (3cr.)
- PENG 490 - Senior Project I (1cr.)
- PENG 491 - Senior Project II (2cr.)
- PENG 497 - Industrial Training (1cr.)

Concentration Electives (6 credits)

- PENG 463 - Energy conversion and materials (3 cr.)
- PENG 470 - Environmental Protection & Chemical Pollution (3 cr.)
- PENG 472 - Ground Water Hydrology and Contamination (3cr.)
- PENG 474 - Energy and the Environment (3 cr.)
- PENG 475 - Greenhouse Technology and Emission Reduction (3cr.)
- PENG 476 - Principles of Nuclear Engineering (3 cr.)
- PENG 494 - Selected Topics in Petroleum and Energy Engineering (3cr.)

Concentration in Energy Resources (9 credits)
A minimum of 9 credit hours from the following courses that are also listed under concentration electives must be completed.

- PENG 463 - Energy conversion and materials (3 cr.)
- PENG 470 - Environmental Protection & Chemical Pollution (3 cr.)
- PENG 474 - Energy and the Environment (3 cr.)
- PENG 475 - Greenhouse Technology and Emission Reduction (3cr.)
- PENG 476 - Principles of Nuclear Engineering (3 cr.)
- PENG 494 - Selected Topics in Petroleum and Energy Engineering (3cr.)

**Prerequisites:**

Completion of PENG courses 218, 227, 329, 361, 363, 375, 462, and 463.

**Department of Physics**

Department of Physics  
School of Sciences and Engineering

*Professors*: S. Arafah, H. Omar (Chair), S. El-Sheikh (Associate Chair), A. Shaarawi (Dean of Graduate Studies), S. Sedky (Founding Provost, Zuweil Academy)  
*Associate Professors*: A. El Fiqi (Vice President for Student Affairs), E. Abdel-Rahman (Associate Dean of Graduate Studies and Director of Science & Technology Research Center), E. Soliman (Graduate Director)  

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 and 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 an option in Instrumentation (B.S.)

**Bachelor of Science**
The undergraduate program in physics is designed to give students a thorough but flexible training in the fundamental aspects of classical and modern physics. Lecture material is reinforced and complemented by closely integrated laboratory work. The varied course offerings provide several options from which students may choose according to their interests and abilities.

A student who intends to major in physics must complete successfully PHYS 111, PHYS 123 L, PHYS 112, PHYS 124 L, MACT 131 and MACT 132 with a minimum GPA of 2.5 in these courses. To change from any other major to physics the student should have completed the above courses, in addition to an overall and concentration GPA's not less than 2.5.

A total of 132 credit hours is required for the bachelor’s degree in physics distributed as follows:

**Core Curriculum (30-42 credits)**

The science requirement of the core curriculum electives is met within the physics concentration requirements.

**Concentration Requirements (46 credits)**

- PHYS 111 - Classical Mechanics, Sound and Heat (3 cr.)
- PHYS 112 - Electricity and Magnetism (3 cr.)
- PHYS 123L - General Physics Laboratory I (1 cr.)
- PHYS 124L - General Physics Laboratory II (1 cr.)
- PHYS 204L - Optics Laboratory (1 cr.)
- PHYS 211 - Modern Physics (3 cr.)
- PHYS 212 - Quantum Mechanics I (3 cr.)
- PHYS 214 - Waves and Optics (3 cr.)
- PHYS 215 - Introduction to Electronics (3 cr.)
- PHYS 221L - Electronics Laboratory I (2 cr.)
- PHYS 279 - Computational Methods in Physics (2 cr. + 1 cr.)
- PHYS 311 - Thermodynamics and Statistical Mechanics (3 cr.)
- PHYS 312 - Theoretical Mechanics (3 cr.)
- PHYS 316 - Electromagnetic Theory (3 cr.)
- PHYS 321L - Nuclear Physics Lab (1 cr.)
- PHYS 322L - Solid-State Physics Lab (2 cr.)
- PHYS 323L - Semiconductor Technology Lab (2 cr.)
- PHYS 325 - Introduction to Solid-State Physics (3 cr.)
- PHYS 421 - Quantum Mechanics II (3 cr.)

**Concentration electives (18 credits):**

To be taken from the 300 or 400 level courses in physics and mathematics. 500-level courses may be used towards the B.Sc. degree, upon the approval of the academic advisor.

**General Electives (0-12 credits)**

**Collateral Requirements (23 credits)**
- CHEM 105 - General Chemistry I (3 cr.)
- CHEM 106 - General Chemistry II (3 cr.)
- CHEM 115L - General Chemistry Laboratory (1 cr.)
- CHEM 116L - General Chemistry Laboratory (1 cr.)
- CSCE 106 - Fundamentals of Computer Science (3 cr.)
- MACT 131 - Calculus I (0/3)
- MACT 132 - Calculus II (3 cr.)
- MACT 231 - Calculus III (3 cr.)
- MACT 232 - Calculus IV (3 cr.)
- MACT 233 - Differential Equations (3 cr.)

Thesis Requirement (3 credits)

- PHYS 401 - Senior Thesis and Seminar (3 cr.)

Notes:

In special cases, and with advisor's approval, another 400-level course may be substituted for the Senior Thesis and Seminar.

Instrumentation option (21 - 27 credits)

Students may choose the instrumentation option within the bachelor's degree program by following the required sequence of courses listed below. While retaining the fundamentals of the conventional degree in physics, this option prepares students to meet the needs of an expanding and increasingly vital area of sciences and engineering.

The required courses for the Instrumentation option are:

- PHYS 305L - Modern Sensors Laboratory (1 cr.)
- PHYS 307L - Electronics Laboratory II (1 cr.)
- PHYS 309L - Digital Logic Design Laboratory (1 cr.)
- PHYS 315 - Modern Sensors (3 cr.)
- PHYS 319 - Digital Logic Design (3 cr.)
- PHYS 327 - Operational Amplifiers and Applications (3 cr.)
- PHYS 407L - Process Instrumentation and Digital Control Laboratory (1 cr.)
- PHYS 417 - Process Instrumentation (3 cr.)

And 5-11 credits selected from the following:

- CSCE 231 - Computer Organization and Assembly Language Programming (3 cr.)
- PHYS 314 - Optical Systems and Instruments (3 cr.)
- PHYS 318 - Instrumentation Systems and Control (3 cr.)
- PHYS 333 - Introduction to Applied Geophysics (3 cr.)
- PHYS 404L - Photonics and Optical Communication Laboratory (1 cr.)
- PHYS 409L - Computerized Instrumentation Laboratory (1 cr.)
- PHYS 413 - Nuclear Physics (3 cr.)
• PHYS 414 - Photonics (3 cr.)
• PHYS 415 - Selected Topics in Physics (3 cr.)
• PHYS 416 - Experimental Methods in Undergraduate Research (3 cr.)
• PHYS 426 - Industrial Physics (3 cr.)
• PHYS 427 - Analytical Techniques in Instrumentation (3 cr; 2 cr. lecture, 1 cr. lab)
• PHYS 429 - Computerized Instrumentation (3 cr.)

Concentration Electives (0-6 credits)

Minors

Electronics Minor

*Professors: A. Shaarawi (Dean of Graduate Studies), F. Assabghy, S. Sedky (Associate Dean of Graduate Studies and Director of Science & Technology Research Center)*

*Associate Professor: E. Soliman*

The aim of the minor in electronics is to provide students majoring in chemistry, mechanical engineering, computer science, and mathematics 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.

Requirements 17 credit hours of electronics minor should cover:

• PHYS 215 - Introduction to Electronics (3 cr.)
• PHYS 321L - Electronics Laboratory I (2 cr.)
• PHYS 309L - Digital Logic Design Laboratory (1 cr.)
• PHYS 319 - Digital Logic Design (3 cr.)

A minimum of 8 credits selected from the following:

• CSCE 330 - Computer Architecture (3 cr.)
• CSCE 339L - Computer Architecture Lab (1 cr.)
• EENG 321 - Automatic Control (3 cr.)
• EENG 413 - Testing of Digital Circuits (3 cr.)
• PHYS 305L - Modern Sensors Laboratory (1 cr.)
• PHYS 307L - Electronics Laboratory II (1 cr.)
• PHYS 315 - Modern Sensors (3 cr.)
• PHYS 318 - Instrumentation Systems and Control (3 cr.)
• PHYS 323L - Semiconductor Technology Lab (2 cr.)
• PHYS 327 - Operational Amplifiers and Applications (3 cr.)
• PHYS 404L - Photonics and Optical Communication Laboratory (1 cr.)
• PHYS 407L - Process Instrumentation and Digital Control Laboratory (1 cr.)
• PHYS 409L - Computerized Instrumentation Laboratory (1 cr.)
• PHYS 414 - Photonics (3 cr.)
• PHYS 415 - Selected Topics in Physics (3 cr.)
• PENG 476 - Principles of Nuclear Engineering (3 cr.)
- PHYS 429 - Computerized Instrumentation (3 cr.)

**Physics Minor**

The minor in physics is designed to provide students majoring in science, computer science or engineering with the opportunity of complementing their major disciplines with a series of courses designed to provide in-depth appreciation of physics.

**Requirements (17 credits)**

- PHYS 204L - Optics Laboratory (1 cr.)
- PHYS 211 - Modern Physics (3 cr.)
- PHYS 212 - Quantum Mechanics I (3 cr.)
- PHYS 214 - Waves and Optics (3 cr.)

And a minimum of 7 credits from the following:

- PHYS 311 - Thermodynamics and Statistical Mechanics (3 cr.)
- PHYS 312 - Theoretical Mechanics (3 cr.)
- PHYS 316 - Electromagnetic Theory (3 cr.)
- PHYS 321L - Nuclear Physics Lab (1 cr.)
- PHYS 322L - Solid-State Physics Lab (2 cr.)
- PHYS 325 - Introduction to Solid-State Physics (3 cr.)
- PHYS 413 - Nuclear Physics (3 cr.)
- PHYS 421 - Quantum Mechanics II (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 32 credit hours is required for the Master of Science degree. This consists of 24 credit hours of courses and 8 credit hours of thesis work.

**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 12 credit hours of core courses, 3-6 credit hours of core elective courses, and 6-9 credit hours of Physics electives.

Core Courses (12 credit hours)

- PHYS 501 - Mathematical Physics (3 cr.)
- PHYS 502 - Classical Electrodynamics (3 cr.)
- PHYS 504 - Classical Mechanics (3 cr.)
- PHYS 506 - Advanced Quantum Mechanics (3 cr.)

Core Elective Courses (3-6 credit hours)

Choice of courses with consultation of advisor.

- PHYS 507 - Computational Physics (3 cr.)
- PHYS 508 - Advanced Experimental Techniques (3 cr.)
- PHYS 509 - Advanced Thermodynamics and Statistical Mechanics (3 cr.)

Physics Electives (6-9 credit hours)

A maximum of 3 credit hours of the physics electives can be taken from graduate level courses in other related areas subject to the advisors' approval.

- PHYS 510 - Introduction To Solids (3 cr.)
- PHYS 512 - Electronic Transport in Semiconductor (3 cr.)
- PHYS 513 - Theory of Solids (3 cr.)
- PHYS 549 - Passive Microwave Circuits (3 cr.)
- PHYS 556 - MEMS/NEMS Technology and Devices (3 cr.)
- PHYS 561 - Independent Studies (1-3 cr.)
- PHYS 562 - Selected topics in Physics (3 cr.)

Thesis (8 credit hours)

Each student must submit a thesis topic that has been approved by a faculty supervisor, normally after acquiring 12 credit hours of course work. Since various research topics are addressed in a sequence of two seminar courses, the student must register for the first before submitting a thesis topic while the second must be taken during the execution of the thesis research. To ensure adequate faculty consultation, two semesters of the graduate thesis course are required.

- PHYS 590 - Graduate Seminar I (1 cr.)
- PHYS 591 - Graduate Seminar II (1 cr.)
- PHYS 599 - Research Guidance and Thesis (3 cr. + 3 cr.)

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 500-level physics courses. No more than two 400-level courses, not previously taken, may be considered for credit. Successfully completed 500-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.

Biotechnology Program

Professors: H. Azzazy (CHEM), H. El-Dorry (BIOL), A. Shaarawi (PHYS and Dean of Graduate Studies), S. Zada (BIOL)
Associate professors: H. Salem (MENG), R. Siam (BIOL and Program Director)
Assistant professors: A. Amleh (BIOL), W. Fouad (BIOL), J. Grubich (BIOL), A. Moustafa (BIOL), A. Rafea (CSCE), E. Cruz-Rivera (BIOL)

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 total 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 Objectives

The objectives of the Master of Science in Biotechnology are:

1. To introduce students to a combination of fundamentals and frontline applications in the field of biotechnology.
2. To introduce students to regulatory affairs, intellectual property issues, and ethics related to different aspects of biotechnology.
3. To introduce students to principles and requirements of bio-entrepreneurship.
4. To provide the students with a deep understanding of the research techniques and data analysis in the area of specialization.
5. To train students to solve biotechnology-related problems, think critically, function well in a team, and communicate effectively.
6. To train students at a high standard of written and oral communication skills on technical matters.
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. 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 sciences or engineering, 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 12 credit hours of core courses and 12 credit hours of electives.

Core Courses (12 credit hours)

To be chosen from the following courses:

- BIOT 501 - Biochemistry (3 cr.)
- BIOT 502 - Cell and Molecular Biology (3 cr.)
- BIOT 503 - Biotechnology (3 cr.)
- BIOT 504 - Experimental Biotechnology (3 cr.)
- BIOT 505 - Basics of Bioentrepreneurship (3 cr.)

Biotechnology Electives (12 credit hours)

Student may select from the following list of courses:

- BIOT 511 - Bioengineering (3 cr.)
- BIOT 521 - Fundamentals of Bioinformatics (3 cr.)
- BIOT 531 - Molecular Diagnosis (3 cr.)
- BIOT 533 - Pharmacogenomics and Pharmacogenetics (3 cr.)
- BIOT 541 - Molecular Genetics (3 cr.)
- BIOT 543 - Microbial Biotechnology (3 cr.)
- BIOT 551 - Selected Topics in Biotechnology (3 cr.)

Notes:

Students may also take a maximum of one 400-level course in sciences or engineering, or other related areas subject to their advisor’s approval.

Thesis (9 credit hours)

Each student must submit a thesis topic that has been approved by a faculty supervisor normally after acquiring 12 credit hours of course work. Since various research topics are addressed in a sequence of two seminar courses, the student must register for the first (BIOT590) before submitting a thesis topic while the second (BIOT591) must be taken during the execution of the thesis research. To ensure adequate faculty consultation, two semesters of the graduate thesis course (BIOT599) are required. After that, the course may be taken for one credit hour each semester until completion of the program requirements.
Doctorate of Philosophy (Ph.D.) Program

Doctorate of Philosophy (Ph.D.)

Applied Sciences, with specializations in Biotechnology, Computer Science 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 will be administered by the Doctoral Program Steering Committee which has a representation of one faculty from the various departments in the School of Sciences and Engineering.

This program offers a Ph.D. degree in Applied Sciences with specializations in:

- Nanotechnology,
- Biotechnology,
- Chemistry,
- or Computer Science.

Admission Requirements

- M.Sc. in an Engineering or Science discipline
- Demonstrated proficiency in English language as determined by AUC graduate admissions
- Obtain an acceptable score in the Graduate Record Exam (GRE)

Program Objectives

The mission of the Ph.D. program in Applied Sciences and Engineering is to provide in-depth training to students in the natural sciences, modern engineering, and computer science and in the conduct of original research leading to a doctoral dissertation.

The primary goal of the program is to provide students with an opportunity to contribute to the advancement of knowledge in the field of applied sciences and engineering. The program is aimed at providing students with the opportunity to develop their professional knowledge and expertise to a high caliber and to qualify for leadership
positions in teaching, in research, in administration and management and in policy analysis and program development. The program caters to demands of industry and research institutes and places a strong emphasis on original thinking, professional behavior and ethical conduct. The objectives of the program are for students to acquire

1. A broad analytic understanding of advanced experimental, theoretical and computational methods in the applied sciences and engineering
2. Substantive knowledge of some field or area of practice (e.g., nanotechnology, biotechnology, computer science, environmental engineering, etc.).
3. Competence to conduct independent, empirical research that extends the knowledge base of the field of interest.
4. Ability to generate new ideas, convince others that their ideas are worth pursuing, do the necessary research to demonstrate that their ideas are viable, and communicate the results of their research in the public domain.

Program Outcomes

Upon completing the degree requirements for the Ph.D. Program in Applied Sciences and Engineering graduating students should have the ability to:

1. Pursue a career in academia in teaching and/or research.
2. Pursue a career in industrial research and development (R&D).
3. Identify well-defined science and/or engineering problems of importance to the profession or the community, as well as generate new ideas and approaches to resolve such problems.
4. Apply advanced experimental, analytical and computational techniques to solve complex science problems.
5. Convince others that their ideas are worth pursuing and explore funding opportunities for their research.
6. Initiate scientific collaborations schemes that advance their research endeavors.
7. Successfully communicate their results to constituencies of various technical backgrounds and fields of specialty.
8. Make significant contributions to their field of specialization and profession through their own continued research, writing, teaching, and practice.
9. Implement the code of ethics within the study and work environments.

Doctoral of Philosophy Degree Requirements:

Doctoral qualification decisions are made by the Doctoral Program Steering Committee. Students going through this program are expected to successfully complete the following requirements:

1. Pass the required course work with a GPA 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. Students who change their major track from that used for their master’s degree to a new track for their Ph.D. degree may have to take more than thirty-six (36) hours to fulfill the course requirements. Because of the interdisciplinary nature of the program and in order to ensure sufficient breadth of study, doctoral students must include in the program of study at least one graduate course for a minimum of 3 hours of credit in areas outside one’s main track. In addition the student must complete 3 credit hours of Seminar courses and register for thirty-three (33) credit hours of Dissertation research work. Courses for each track will be listed at the 500 and 600 levels in addition to remedial courses to be taken at the 400 level whenever deemed necessary.

The Academic Advisor and the Research Advising Committee:

The academic advisor is determined by the major track of the student, and is particularly important for assistance in the preliminary course planning of a student’s Ph.D. program. Each major track has at least one faculty member advisor to be identified by the Doctoral Program Steering Committee (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 Advising Committee, which consists of the Chair of the Committee (Dissertation Advisor) and two other members. This committee will play 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 a faculty member willing to serve as the Chair of the Research Advising Committee and to choose in consultation with her/him the other members. In most cases the Chair of the Committee will eventually become the dissertation advisor.

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 Advising Committee. The final Plan of Study will be drafted in consultation with the Research Advising Committee. A final up-to-date copy must be submitted before the student applies for Candidacy.

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 track. It is the student’s responsibility to make sure that all requirements are met. Any departure from the requirements must be requested by written petition to be approved by the Doctoral Program Steering Committee.

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. At least twelve (12) weeks prior to the examination, the student must submit a request indicating her/his intention to take the examination. The Ph.D. Qualifying Examination will be administered by an Examining Committee consisting of the Research Advising Committee in addition to two other examiners to be identified by the Doctoral Program Steering Committee. Following the examination, the Examining Committee will submit an evaluation of the student’s performance to the Doctoral Program Steering Committee.

The Doctoral Candidacy and the Thesis Proposal Presentation:
To proceed towards the Ph.D. Candidacy the student has to write a thesis research proposal under the guidance of the Dissertation Advisor and will give a Thesis Proposal Presentation in front of the Research Advising Committee. Upon the acceptance of the proposal by the Research Advising Committee, the student makes an oral presentation of the thesis 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 Doctoral Program Steering Committee. In case the student does not present an acceptable proposal, the student must take immediate steps to refine the proposal in consultation with the chair and other committee members. The Thesis Proposal Presentation requirement is completed when the Research Advising Committee chair reports a successful proposal presentation to the Office of the Registrar.

Following acceptance of the thesis proposal, the Dissertation Defense Committee is finalized. This usually consists of the three members of the Research Advising Committee in addition to two external examiners. The student should submit a written request to the Doctoral Program Steering Committee to approve the proposed Dissertation Defense Committee. The membership of this Committee is communicated to the SSE Dean and the Dean of Graduate Studies for approval.

The Dissertation and Its Defense --- Final Oral Defense:

Upon completion, the dissertation must receive a written evaluation from each member of the Dissertation Defense Committee and must be defended orally in an open examination before the committee. Following the successful Final Oral Defense, the student must consult with the dissertation advisor(s) about any changes required by the committee, and must make these changes before final submission of the thesis to the Dean of Graduate Studies.

Course and Research Requirements

Minimum number of credit hours beyond the B.Sc. degree: 72

Dissertation hours 33 (BIOT 699, NANO 699, CSCE 699)
Seminar hours 3
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 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 hours of credit to be counted towards the Ph.D. degree

Case 2: M.Sc. in a different Applied Science discipline
A candidate may receive up to 12 hours of credit to be counted towards the Ph.D. degree

A plan of study will be developed under guidance of the academic advisor of the student at the time of admission and may be modified later on by her/his Research Advising Committee. Courses are to be selected from the following:

I- Engineering and Applied Sciences core

Admission Case 1: at least 3 credits (1 course)
Admission Case 2: at least 6 credits (2 courses)
II- Applied Sciences Specialization courses

Dependant on the admission status the student may take the following number of credit hours from the listed of courses. At least one course should be a 600-level course

- Admission Case 1: at least 6 credit hours (2 courses)
- Admission Case 2: at least 12 credit hours (4 courses)

All master’s 500-level courses offered by the following graduate programs: Biotechnology (BIOT), Chemistry (CHEM), Computer Science (CSCE), Nanotechnology (NANO) and Physics (PHYS). In addition, the students should take at least one 600-level course from the following list:

- BIOT 511 - Bioengineering (3 cr.)
- BIOT 543 - Microbial Biotechnology (3 cr.)
- BIOT 601 - Current Topics in Biotechnology (3 cr.)
- BIOT 602 - Reading and Conference Course (3 cr.)
- BIOT 620 - Computational Genomics and Transcripptomics (3 cr.)
- CHEM 603 - Bioseparation Processes for Food and Pharmaceutical Industries (3 cr.)
- CHEM 615 - Principles and Applications of Mass Spectrometry (3 cr.)
- CSCE 642 - Mobile and Pervasive Computing (3 cr.)
- CSCE 692 - Advanced Selected Topics in Computer Science (3 cr.)
- EENG 661 - Nanoscale CMOS (3 cr.)
- NANO 621 - Nanophotonics (3 cr.)
- NANO 630 - Biomaterials (3 cr.)
- NANO 642 - Nanocatalysis (3 cr.)
- NANO 505 - Nanochemistry (3 cr.)
- NANO 640 - Nanoporous Materials (3 cr.)
- PHYS 602 - Classical Electrodynamics II (3 cr.)
- PHYS 641 - Integrated Photonics (3 cr.)
- PHYS 642 - Computational Electromagnetics (3 cr.)
- PHYS 662 - Advanced Selected Topics in Physics (3 cr.)

III- Interdisciplinary Course Requirement

To ensure sufficient breadth of study, students must include in their program of study at least one graduate course for a minimum of 3 hours of credit in areas outside their specialization.

IV- Dissertation (Minimum of 36 credit hours)

Dissertation work includes completion of:

- Graduate Thesis Seminar I, 2 cr. (According to discipline student should select: BIOT, CHEM, CSCE, ENGR, NANO, PHYS or RCSS 590)
- Graduate Advanced Research Seminar (PHDS 691), 1 cr.

Research Guidance Dissertation, a minimum of 33 cr. (BIOT 699, CSCE 699, or NANO 699)

To achieve the Ph.D. Candidacy the student has to write a thesis research proposal under the guidance of the Dissertation Advisor and will give a Thesis Proposal Presentation in front of the Research Advising Committee. Upon the acceptance of the proposal by the Research Advising Committee, the student makes an oral presentation of the thesis research proposal, including relevant background material. The Research Advising Committee will report their recommendation to the Doctoral Program Steering Committee. In case the student does not present an acceptable proposal, the student must take immediate steps to refine the proposal in consultation with the chair and other committee members. The Thesis Proposal Presentation requirement is completed when the Research Advising Committee chair reports a successful proposal presentation to the Office of the Registrar.

Following acceptance of the thesis proposal, the Dissertation Defense Committee is formed from the three members of the Research Advising Committee in addition to two external examiners. The student should submit a written request to the Doctoral Program Steering Committee to approve the proposed Dissertation Defense Committee. The membership of this Committee is communicated to the SSE Dean and the Dean of Graduate Studies for approval.

Upon completion, the dissertation must receive a written evaluation from each member of the Dissertation Defense Committee and must be defended orally in an open examination before the committee. Following the successful Final Oral Defense, the student must consult with the dissertation advisor(s) about any changes required by the committee, and must make these changes before final submission of the thesis to the Dean of Graduate Studies.

Engineering, with specializations in Construction Engineering, Electronics Engineering, Environmental Engineering and Mechanical Engineering (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 will be administered by the Doctoral Program Steering Committee which has a representation of one faculty from the various departments in the School of Sciences and Engineering.

This program offers a Ph.D. degree Engineering with specializations in:

- Mechanical Engineering,
- Construction Engineering,
- Electronics Engineering,
- Robotics, Control and Smart Systems,
- or Environmental Engineering.

**Admission Requirements**

- M.Sc. in an Engineering discipline
- Demonstrated proficiency in English language as determined by AUC graduate admissions
- Obtain an acceptable score in the Graduate Record Exam (GRE)

**Program Objectives**

The mission of the Ph.D. program in Applied Sciences and Engineering is to provide in-depth training to students in the natural sciences, modern engineering, and computer science and in the conduct of original research leading to a doctoral dissertation.

The primary goal of the program is to provide students with an opportunity to contribute to the advancement of knowledge in the field of applied sciences and engineering. The program is aimed at providing students with the opportunity to develop their professional knowledge and expertise to a high caliber and to qualify for leadership positions in teaching, in research, in administration and management and in policy analysis and program development. The program caters to demands of industry and research institutes and places a strong emphasis on original thinking, professional behavior and ethical conduct. The objectives of the program are for students to acquire

1. A broad analytic understanding of advanced experimental, theoretical and computational methods in the applied sciences and engineering
2. Substantive knowledge of some field or area of practice (e.g., electronics engineering, environmental engineering, etc.).
3. Competence to conduct independent, empirical research that extends the knowledge base of the field of interest.
4. Ability to generate new ideas, convince others that their ideas are worth pursuing, do the necessary research to demonstrate that their ideas are viable, and communicate the results of their research in the public domain.

**Program Outcomes**

Upon completing the degree requirements for the Ph.D. Program in Applied Sciences and Engineering graduating students should have the ability to:

1. Pursue a career in academia in teaching and/or research.
2. Pursue a career in industrial research and development (R&D).
3. Identify well-defined science and/or engineering problems of importance to the profession or the community, as well as generate new ideas and approaches to resolve such problems.
4. Apply advanced experimental, analytical and computational techniques to solve complex science and/or engineering problems.
5. Convince others that their ideas are worth pursuing and explore funding opportunities for their research.
6. Initiate scientific collaborations schemes that advance their research endeavors.
7. Successfully communicate their results to constituencies of various technical backgrounds and fields of specialty.
8. Make significant contributions to their field of specialization and profession through their own continued research, writing, teaching, and practice.
9. Implement the code of ethics within the study and work environments.

Doctoral of Philosophy Degree Requirements:

Doctoral qualification decisions are made by the Doctoral Program Steering Committee. Students going through this program are expected to successfully complete the following requirements:

1. **Pass the required course work with a GPA 3.0 or higher:** This insures 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. Students who change their major track from that used for their master’s degree to a new track for their Ph.D. degree may have to take more than thirty-six (36) hours to fulfill the course requirements. Because of the interdisciplinary nature of the program and in order to ensure sufficient breadth of study, doctoral students must include in the program of study at least one graduate course for a minimum of 3 hours of credit in areas outside one’s main track. In addition the student must complete 3 credit hours of Seminar courses and register for thirty-three (33) credit hours of Dissertation research work. Courses for each track will be listed at the 500 and 600 levels in addition to remedial courses to be taken at the 400 level whenever deemed necessary.

The Academic Advisor and the Research Advising Committee:

The academic advisor is determined by the major track of the student, and is particularly important for assistance in the preliminary course planning of a student’s Ph.D. program. Each major track has at least one faculty member advisor to be identified by the Doctoral Program Steering Committee (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 Advising Committee, which consists of the Chair of the Committee (Dissertation Advisor) and two other members. This committee will play 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 a faculty member willing to serve as the Chair of the Research Advising Committee and to choose in
consultation with her/him the other members. In most cases the Chair of the Committee will eventually become the dissertation advisor.

**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 Advising Committee. The final Plan of Study will be drafted in consultation with the Research Advising Committee. A final up-to-date copy must be submitted before the student applies for Candidacy.

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 track. It is the student’s responsibility to make sure that all requirements are met. Any departure from the requirements must be requested by written petition to be approved by the Doctoral Program Steering Committee.

**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. At least twelve (12) weeks prior to the examination, the student must submit a request indicating her/his intention to take the examination. The Ph.D. Qualifying Examination will be administered by an Examining Committee consisting of the Research Advising Committee in addition to two other examiners to be identified by the Doctoral Program Steering Committee. Following the examination, the Examining Committee will submit an evaluation of the student’s performance to the Doctoral Program Steering Committee.

**The Doctoral Candidacy and the Thesis Proposal Presentation:**

To proceed towards the Ph.D. Candidacy the student has to write a thesis research proposal under the guidance of the Dissertation Advisor and will give a Thesis Proposal Presentation in front of the Research Advising Committee. Upon the acceptance of the proposal by the Research Advising Committee, the student makes an oral presentation of the thesis 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 Doctoral Program Steering Committee. In case the student does not present an acceptable proposal, the student must take immediate steps to refine the proposal in consultation with the chair and other committee members. The Thesis Proposal Presentation requirement is completed when the Research Advising Committee chair reports a successful proposal presentation to the Office of the Registrar.

Following acceptance of the thesis proposal, the Dissertation Defense Committee is finalized. This usually consists of the three members of the Research Advising Committee in addition to two external examiners. The student should submit a written request to the Doctoral Program Steering Committee to approve the proposed Dissertation Defense Committee. The membership of this Committee is communicated to the SSE Dean and the Dean of Graduate Studies for approval.

**The Dissertation and Its Defense --- Final Oral Defense:**

Upon completion, the dissertation must receive a written evaluation from each member of the Dissertation Defense Committee and must be defended orally in an open examination before the committee. Following the successful Final
Oral Defense, the student must consult with the dissertation advisor(s) about any changes required by the committee, and must make these changes before final submission of the thesis to the Dean of Graduate Studies.

**Course and Research Requirements**

Minimum number of credit hours beyond the B.Sc. degree: 72

Dissertation hours 33 (CENG 699, EENG 699, ENVE 699, MENG 699)

Seminar hours 3

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 of the student at the time of admission.

Case 1: M.Sc. in the same Engineering discipline

A candidate may receive up to 24 hours of credit to be counted towards the Ph.D. degree

Case 2: M.Sc. in a different Engineering discipline

A candidate may receive up to 12 hours of credit to be counted towards the Ph.D. degree

A plan of study will be developed under guidance of the academic advisor of the student at the time of admission and may be modified later on by her/his Research Advising Committee. Courses are to be selected from the following:

**I- Engineering and Applied Sciences core**

Admission Case 1: at least 3 credits (1 course)

Admission Case 2: at least 6 credits (2 courses)

- BIOT 521 - Fundamentals of Bioinformatics (3 cr.)
- CSCE 527 - Neural Networks and Genetic Algorithms (3 cr.)
- CSCE 561 - Knowledge Engineering (3 cr.)
- CSCE 565 - Advanced Artificial Intelligence (3 cr.)
- CSCE 664 - Advanced Data Mining (3 cr.)
- EENG 522 - Stochastic Processes for Engineers (3 cr.)
- ENGR 511 - Computational Methods in Engineering (3 cr.)
- ENGR 512 - Experimental Methods in Engineering (3 cr.)
- ENGR 518 - Engineering Statistics (3 cr.)
- ENVE 562 - Unit Operations in Environmental Engineering (3 cr.)
- NANO 502 - Simulation and Modeling for Nanoscale Materials and Systems (3 cr.)
- NANO 503 - Advanced Testing and Characterization Techniques (3 cr.)
- NANO 504 - Fabrication of Nanomaterials For Films And Devices (3 cr.)
- MACT 604 - Advanced Numerical Methods (3 cr.)
- MACT 605 - Advanced Probability with Engineering Applications (3 cr.)
- MENG 543 - Systems Modeling and Optimization (3 cr.)
- MENG 681 - Stochastic Simulation (3 cr.)
- PHYS 502 - Classical Electrodynamics (3 cr.)
- RCSS 504 - Applied Estimation (3 cr.)
- RCSS 541 - Smart Systems and Computational Intelligence (3 cr.)

II- Engineering Specialization courses

Dependant on the admission status the student may take the following number of credit hours from the listed of courses. At least one course should be a 600-level course.

Admission Case 1: at least 6 credit hours (2 courses)

Admission Case 2: at least 12 credit hours (4 courses)

All Masters 500-level courses offered by the following graduate programs: Construction Engineering (CENG), Environmental Engineering (ENVE), Electronics Engineering (EENG), Mechanical Engineering (MENG) and Nanotechnology (NANO). In addition the students should take at least one 600-level course from the following list:

- EENG 622 - Advanced Topics in Wireless Communications (3 cr.)
- EENG 661 - Nanoscale CMOS (3 cr.)
- ENVE 662 - Advanced Treatment Processes (3 cr.)
- ENVE 680 - Independent Study in Environmental Engineering (3 cr. Max.)
- ENVE 692 - Advanced Selected Topics in Environmental Engineering (3 cr.)
- CENG 611 - Structural Stability (3 cr.)
- CENG 612 - Structural Dynamics (3 cr.)
- CENG 613 - Earthquake Engineering and Seismic Design (3 cr.)
- CENG 631 - Specialty Materials for Construction (3 cr.)
- CENG 632 - Highways Pavement Systems and Design (3 cr.)
- CENG 679 - Preserving, Repair and Sustainability of Structures (3 cr.)
- CENG 680 - Independent Study in Structural and Material Engineering (3 cr. max.)
- CENG 692 - Advanced Selected Topics in Structural and Material Engineering (3 cr.)
- MENG 615 - Continuum Mechanics (3 cr.)
- MENG 620 - Nonlinear and Adaptive Control (3 cr.)
- MENG 660 - Sustainability of Thermal Systems (3 cr.)
- MENG 670 - Advanced Transport Phenomena (3 cr.)
- NANO 621 - Nanophotonics (3 cr.)
- NANO 642 - Nanocatalysis (3 cr.)
- RCSS 692 - Advanced Selected Topics in Robotics, Control and Smart Systems (RCSS) (3 cr.)

* Environmental Engineering students can also register for online graduate course offerings through a cooperative program between AUC’s Department of Construction and Architectural Engineering and Iowa State University’s Department of Civil, Construction and Environmental Engineering. Sample courses are as follows:

- CE 521: Environmental Biotechnology
- CE 522: Water Pollution Control Processes
- CE 569: Environmental Geotechnology
- CE 571: Surface Water Hydrology
III- Interdisciplinary Course Requirement

To ensure sufficient breadth of study, students must include in their program of study at least one graduate course for a minimum of 3 hours of credit in areas outside their specialization.

- PHDS/PHDE 601 - Systems and Computational Biology (3 cr.)

IV- Dissertation (Minimum of 36 credit hours)

Dissertation work includes completion of:

- Graduate Thesis Seminar I, 2 cr. (According to discipline student should select: BIOT, CHEM, CSCE, ENGR, NANO or RCSS 590)
- Graduate Advanced Research Seminar (PHDE 691), 1 cr.
- Research Guidance Dissertation, a minimum of 33 cr. (CENG 699, EENG 699, ENVE 699, or MENG 699)

To achieve the Ph.D. Candidacy the student has to write a thesis research proposal under the guidance of the Dissertation Advisor and will give a Thesis Proposal Presentation in front of the Research Advising Committee. Upon the acceptance of the proposal by the Research Advising Committee, the student makes an oral presentation of the thesis research proposal, including relevant background material. The Research Advising Committee will report their recommendation to the Doctoral Program Steering Committee. In case the student does not present an acceptable proposal, the student must take immediate steps to refine the proposal in consultation with the chair and other committee members. The Thesis Proposal Presentation requirement is completed when the Research Advising Committee chair reports a successful proposal presentation to the Office of the Registrar.

Following acceptance of the thesis proposal, the Dissertation Defense Committee is formed from the three members of the Research Advising Committee in addition to two external examiners. The student should submit a written request to the Doctoral Program Steering Committee to approve the proposed Dissertation Defense Committee. The membership of this Committee is communicated to the SSE Dean and the Dean of Graduate Studies for approval.

Upon completion, the dissertation must receive a written evaluation from each member of the Dissertation Defense Committee and must be defended orally in an open examination before the committee. Following the successful Final Oral Defense, the student must consult with the dissertation advisor(s) about any changes required by the committee, and must make these changes before final submission of the thesis to the Dean of Graduate Studies.

Environmental Engineering Program

Director: E. Smith
Steering Committee: S. El-Baradei, S. El-Haggar, E. Imam, A. Shaarawi (Associate Dean for Graduate Studies & Research), E. Smith

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 provide the graduates of the program with:

- Extensive knowledge in fundamental environmental engineering science, the interactions of pollutants in water, air, and subsurface environments, and the design of treatment / pollutant remediation systems.

- In-depth knowledge in an area of student interest deriving from one of the areas of environmental engineering noted above, including applications in environmental hydraulics, solid and hazardous waste engineering, and management of environmental control systems.

- Awareness of the local and global context in which environmental engineering is practiced, including economic and business practices, societal needs, and considerations of public health, safety, culture and ethics.

- An ability to solve unstructured engineering problems of social significance, think critically, and function well in a team.

- A high and ethical 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 33 credit hours as follows:

I- Engineering core (6 credits)

- ENGR 516 - Engineering for a Sustainable Environment (3 cr.)

One course (3 cr.) is selected out of

- ENGR 511 - Computational Methods in Engineering (3 cr.)
- ENGR 512 - Experimental Methods in Engineering (3 cr.)
- ENGR 518 - Engineering Statistics (3 cr.)

II- Environmental Engineering core (15 credits)

- ENVE 561 - Water Quality Control (3 cr.)
- ENVE 562 - Unit Operations in Environmental Engineering (3 cr.)
- ENVE 564 - Air Pollution Control Engineering (3 cr.)
- ENVE 566 - Solid and Hazardous Wastes Engineering (3 cr.)
- ENVE 567 - Environmental Chemistry (3 cr.)
- ENVE 569 - 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 400-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 provide the graduates of the program with:

- A broad knowledge of modern computational and experimental methods in engineering.
- Extensive knowledge in fundamental environmental engineering science, the interactions of pollutants in water, air, and subsurface environments, and the design of treatment/pollutant remediation systems.
- In-depth understanding of the research methods and data analysis in one of the areas of environmental engineering noted above.
- An ability to solve unstructured engineering problems of social significance, think critically, and function well in a team.
- A high and ethical standard of written and oral communication on technical matters.

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 (6 credit hours)

All students select two out of the following four ENGR core courses:
• ENGR 511 - Computational Methods in Engineering (3 cr.)
• ENGR 512 - Experimental Methods in Engineering (3 cr.)
• ENGR 516 - Engineering for a Sustainable Environment (3 cr.)
• ENGR 518 - Engineering Statistics (3 cr.)

II- Concentration Courses (12 credit hours)

Students should select a minimum of four courses from the following environmental engineering courses:

• ENVE 561 - Water Quality Control (3 cr.)
• ENVE 562 - Unit Operations in Environmental Engineering (3 cr.)
• ENVE 564 - Air Pollution Control Engineering (3 cr.)
• ENVE 566 - Solid and Hazardous Wastes Engineering (3 cr.)
• ENVE 567 - Environmental Chemistry (3 cr.)
• ENVE 569 - Groundwater Hydrology and Contamination (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 director’s approval. No more than one 400-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.

Thesis

Graduate thesis work is an important and required part of the environmental engineering master’s degree program. Each student must submit a thesis topic that has been approved by a faculty advisor by the end of the first academic year. Various research topics are discussed in ENGR 590, Graduate Thesis Seminar. Students must complete ENGR 590 before registering for thesis credits. To ensure adequate faculty consultation on the thesis, the student must register for ENVE 599, Research Guidance Thesis, by the completion of 18 credit hours. Students must register in ENVE 599 continuously and for at least two semesters. Each of the first two registrations in ENVE 599 must be for three credit hours, after that ENVE 599 is taken for one credit hour each semester until completion of the program requirements.

Nanotechnology Program

Director: Hanadi Salem (MENG)
Steering Committee: Adham Ramadan (CHEM Chair), Amr Shaarawi (PHYS and Dean of Graduate Studies), Edward Smith (ENVE program director), Hassan Azzazy (CHEM), Rania Siam (BIOT program director), Magdi Nasrallah (PENG Chair), Mohab Anis (EENG), Osman Hosny (CENG), Wael Mamdouh (NANO/CHEM), Sherif Sedky (PHYS, Associate Dean for Graduate Studies and Research, and YJSTRC director)

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 total 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:

The Masters of Science in Nanotechnology graduates scientists and engineers who:

1. Have the knowledge of the enabling technologies and the key aspects relevant to application in nanotechnology
2. Foster a strong culture of interdisciplinary research and development at AUC, Egypt and the region
3. Engage in advanced academic and research careers
4. Excel in an interdisciplinary environment both as individuals and within a team
5. Seize and develop commercial opportunities in the fast-advancing nanotechnology field locally and globally.

Admissions

A bachelor’s degree in sciences or engineering, with minimum GPA of 3.0 out of 4.0 is required for admissions into the nanotechnology master’s program. Admission is also subject to the general university requirements for graduate program. 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.

Courses (24 credit hours):

The program of study is planned with the faculty advisor, and should include a minimum of 9 hours of core courses and a minimum of 12 credit hours of electives:

I. Core Courses (at least 9 credit hours)
II. Nanotechnology Elective courses (at least 12 credit hours)

A minimum of 12 credit hours are required from this list of courses.

Students may also take a maximum of one 400-level courses in Sciences and Engineering, or other related areas subject to their advisor’s approval.

- NANO 521 - MEMS/NEMS Technology and Devices (3 cr.)
- NANO 522 - Electronic Transport in Semiconductors (3 cr.)
- NANO 531 - Nanomaterials, Synthesis, Processing and Applications (3 cr.)
- NANO 532 - Nanocomposite Science and Technology (3 cr.)
- NANO 533 - Materials for Energy Conversion and Storage (3 cr.)
- NANO 541 - The Chemistry of Nanostructures (3 cr.)
- NANO 542 - Nanoelectrochemistry (3 cr.)
- NANO 551 - Nanotechnology Applications in Construction Materials (3 cr.)
- NANO 552 - Nanotechnology in Studying Damage and Failure in Structures (3 cr.)
- NANO 561 - Advanced Solid-State Devices (3 cr.)
- NANO 562 - Advanced Integrated Circuit Design (3 cr.)
- NANO 571 - Bionanotechnology (3 cr.)
- NANO 592 - Selected Topics in Nanotechnology (3 cr.)

Thesis (9 credit hours)

Each student must submit a thesis topic that has been approved by a faculty supervisor by the end of the first academic year. Various research topics are discussed in NANO 590 and 591, Graduate Thesis Seminar I and II, respectively. Students must register for Graduate Thesis Seminar I (NANO 590) before submitting a thesis topic while Graduate Thesis Seminar II (NANO 591) should be taken during the execution of the thesis research work. To insure adequate faculty consultation on the thesis, the student must register for the Research Thesis Guidance course (NANO 599) by the completion of 18 credit hours. The NANO 599 course must be registered over two consecutive semesters after which the course may be registered for one credit hour each semester until completion of the program requirement.

- NANO 590 - Graduate Thesis Seminars I (2 cr.)
- NANO 591 - Graduate Thesis Seminar II (1 cr.)
- NANO 599 - Research Guidance Thesis (3 cr.)

Robotics, Control and Smart Systems Program

Director: M. Habib (MENG)
Steering Committee: Sh. Sedky (Associate Dean for Graduate Studies and Research and Director of YJSTRC), M. Nasrallah (PENG), A. Elezabi (EENG), A. Rafea (CSCE).
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 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 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. Demonstrate competitive professional advancement, and engage in advanced academic and research in areas of their interest within industry, research centers, and academia both in local and global environment.

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 501 - Robotics: Kinematics, Dynamics and Control (3 cr.)
- RCSS 502 - Embedded Real Time Systems (3 cr.)
- RCSS 503 - Modern Control Design (3 cr.)
- RCSS 504 - Applied Estimation (3 cr.)

II. Group II (18 credit hours)

A minimum of 18 credit hours are required from this list of courses:

- RCSS 521 - Intelligent and Autonomous Robotic Systems (3 cr.)
- RCSS 522 - Mechatronics Innovations and Experimental Robotics (3 cr.)
- RCSS 523 - Bioinspired Robotics and Multi Robotic Systems (3 cr.)
- RCSS 524 - Robotics and Intelligent Automated Manufacturing (3 cr.)
- RCSS 531 - Teleoperation, Haptic Systems and Collaborative Control (3 cr.)
- RCSS 532 - Robust and Optimal Control (3 cr.)
- RCSS 533 - Nonlinear and Adaptive Control (3 cr.)
- RCSS 534 - Networked Control Systems: Design and Applications (3 cr.)
- RCSS 541 - Smart Systems and Computational Intelligence (3 cr.)
- RCSS 542 - MEMS/NEMS Technology and Devices (3 cr.)
- RCSS 543 - Image Analysis and Computer Vision (3 cr.)
- RCSS 544 - Sensors, Perception and Smart Systems (3 cr.)
- RCSS 545 - Advanced Artificial Intelligence (3 cr.)
- RCSS 592 - Selected Topics in RCSS (3 cr.)

III. Group III (3 credit hours)

- RCSS 593 - 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 400-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 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 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. Have broad knowledge in both the theoretical and the practical skills of RCSS interdisciplinary field.
2. Integrate fundamental and advanced knowledge to solve complex interdisciplinary problems in RCSS field,
3. Undertake interdisciplinary research, find new knowledge, analyze and document results, apply and communicate the results reflecting knowledge depth of the research in RCSS field,
4. Work independently as well as collaboratively within interdisciplinary teams and be prepared to be team leaders,
5. Demonstrate competitive professional advancement, pursue higher graduate degrees and engage in advanced academic and research in areas of their interest within industry, research centers, and academia both in local and global environment.

**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 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 501 - Robotics: Kinematics, Dynamics and Control (3 cr.)
- RCSS 502 - Embedded Real Time Systems (3 cr.)
- RCSS 503 - Modern Control Design (3 cr.)
- RCSS 504 - Applied Estimation (3 cr.)

II. Group II (12 credit hours)

A minimum of 12 credit hours are required from this list of courses:

- RCSS 521 - Intelligent and Autonomous Robotic Systems (3 cr.)
- RCSS 522 - Mechatronics Innovations and Experimental Robotics (3 cr.)
- RCSS 523 - Bioinspired Robotics and Multi Robotic Systems (3 cr.)
- RCSS 524 - Robotics and Intelligent Automated Manufacturing (3 cr.)
- RCSS 531 - Teleoperation, Haptic Systems and Collaborative Control (3 cr.)
- RCSS 532 - Robust and Optimal Control (3 cr.)
- RCSS 533 - Nonlinear and Adaptive Control (3 cr.)
- RCSS 534 - Networked Control Systems: Design and Applications (3 cr.)
- RCSS 541 - Smart Systems and Computational Intelligence (3 cr.)
- RCSS 542 - MEMS/NEMS Technology and Devices (3 cr.)
- RCSS 543 - Image Analysis and Computer Vision (3 cr.)
- RCSS 544 - Sensors, Perception and Smart Systems (3 cr.)
- RCSS 545 - Advanced Artificial Intelligence (3 cr.)
- RCSS 592 - 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 400-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 an important part of the requirements for the Master of Science degree program in RCSS. Each student must submit a thesis topic that has been approved by a faculty advisor by the end of the first academic year. Various research topics are discussed in RCSS 590 and 591, Graduate Thesis Seminar I and II. Students must register in RCSS 590 before submitting a thesis topic and in RCSS 591 during execution of the thesis research to present their thesis plan. To ensure adequate faculty consultation on the thesis, the student must register for RCSS 599, Graduate Thesis, by the completion of 18 credit hours. Students must register in RCSS 599 continuously and for at least two semesters. The first two registrations in RCSS 599 must be for three credit hours, after that RCSS 599 is taken for one credit hour each semester until completion of the thesis requirements.

- RCSS 590 - Graduate Thesis Seminar I (2 cr.)
- RCSS 591 - Graduate Thesis Seminar II (1 cr.)
- RCSS 599 - Research Guidance Thesis (3 cr.)
Engineering Steering Committee for ENGR Graduate Courses

Professors: A. Abdel Hamid (Sabbatical), M. Abdel-Mooty, M. Abou-Zeid (CENG Chair), H. Amer, H. Elayat, A. Elimam, A. Esawi, A. Ezzeldin, E. Fahmy, M. Farag (Director of Engineering Services), M. Fouad, L. Gaafar, M. Habib, S. El-Haggar (MENG Chair), M. Haroun (Provost), A. Hassanein, E. Imam (Director of Graduate Program), S. Khedr, A. Nassef, M. Nasrallah (PENG Chair), H. Salem (Director of Nanotechnology Graduate Program), A. Serag El-Din, A. Sherif, N. Sherif (Associate Chair), E. Smith (Director of Environmental Program), M. Younan (Associate Dean for Undergraduate Studies).

Associate Professors: S. Abdel-Azeem, A. Abou Auf, A. Ahmed, M. Anis, M. Arafa, A. Darwish (EENG Chair), A. Elezabi (Director of Graduate Program), T. El-Kweidy, M. Mostafa, K. Nassar, S. Safar, A. Zanon.


Research Professor: O. Hosny

The Engineering core and seminar courses are administered by a steering committee represented by the different Engineering departments. All admitted graduate students pursuing their master degrees in the different Engineering departments (CENG, EENG, ENVE & MENG) are required to select from those ENGR core courses which provide students with research fundamentals and methodology. The seminar courses (ENGR 590 & 591) are also a requirement of the thesis and research component that have to be fulfilled by all graduate students.

Refer to respective departments for information on graduate programs and degrees offered.

Engineering Steering Committee for ENGR Undergraduate Courses

Professors: A. Abdel Hamid (Sabbatical), M. Abdel-Mooty, M. Abou-Zeid (CENG Chair), H. Amer, H. Elayat, A. Elimam, A. Esawi, A. Ezzeldin, E. Fahmy, M. Farag (Director of Engineering Services), M. Fouad, L. Gaafar, M. Habib, S. El-Haggar (MENG Chair), M. Haroun (Provost), A. Hassanein, E. Imam (Director of Graduate Program), S. Khedr, A. Nassef, M. Nasrallah (PENG Chair), H. Salem (Director of Nanotechnology Graduate Program), A. Serag El-Din, A. Sherif, N. Sherif (Associate Chair), E. Smith (Director of Environmental Program), M. Younan (Associate Dean for Undergraduate Studies).

Associate Professors: S. Abdel-Azeem, A. Abou Auf, A. Ahmed, M. Anis, M. Arafa, A. Darwish (EENG Chair), A. Elezabi (Director of Graduate Program), T. El-Kweidy, M. Mostafa, K. Nassar, S. Safar, A. Zanon.


Research Professor: O. Hosny

All engineering students are required to take a set of common engineering courses (ENGR). The objective of these courses is to introduce the fundamentals of engineering science, and prepare the students for the more specialized courses. The common engineering courses are administered by Undergraduate Engineering Steering Committee (UESC) and taught by faculty from the Departments of Construction and Architectural Engineering, Electronics Engineering, Mechanical Engineering and Petroleum and Energy Engineering.

Refer to the respective department for the required ENGR courses.

Undergraduate Admissions
Click on any of the following links for information:

- Admission Policy and Procedures
- Academic Preparation
- English Language Proficiency
- The Admission Decision
- Admission to an Undergraduate Degree Program
- Transfer Admissions
- Transfer Credit Award
- Transfer Credit After Matriculation
- Readmission
- Study Abroad/Non-Degree Admissions
- Change of Status from Non-Degree to Degree
- Auditors
- The Arabic Language Institute
- 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 on a rolling basis. AUC cannot determine the admissibility of candidates with incomplete applications.

The university and the Egyptian Ministry of Education require that all students entering AUC undergraduate program complete a minimum of twelve years of primary and secondary education prior to enrollment in university courses. Applicants must provide proof, in the form of a first-year primary certificate or Idadia Certificate followed by three years of study as proof that they have completed at least twelve years of education.

All undergraduate degree-seeking admission applicants are required to submit official secondary school academic transcripts, mark sheets, and/or certificates. Applicants who have attempted post-secondary studies must also submit official academic transcripts, mark sheets, and/or 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 recent Academic IELTS, TOEFL and/or SAT results, or completed college-level English coursework. Non-Egyptian applicants and/or their sponsors must provide official evidence indicating that a minimum of $17,000 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 that satisfy one or more of the following criteria qualify for exemption:

- Satisfactory scores on appropriate standardized tests including the SAT, the ACT and College Board Advanced Placement tests
- Successful completion of one or more non-remedial academic writing course in a post secondary institution whose English language admission requirements are the same as those of AUC
- Successful completion of English-medium secondary school coursework and examinations that qualify for advanced placement including the International Baccalaureate Diploma Program
- Recent Academic IELTS or TOEFL scores are required of an applicant who does not attend an English Language university or who has attended less than three semesters at a university where the language of instruction is English

Students in the following programs are exempt 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 must submit recent official test results from the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (Academic IELTS). 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 on the TOEFL or Academic IELTS. AUC may offer applicants that do not qualify for the Rhetoric and Composition the opportunity to enroll in AUC’s Intensive English Program (IEP) or Academic English for Freshmen (ENGL 100). ENGL 100 is the University’s bridge course between the IEP and the Rhetoric and Composition. IEP students must complete the program within one calendar year (two semesters and the summer session).

All students who have been admitted into ENGL 100 must satisfactorily complete the course work within a time period not to exceed two full semesters and a summer session. Students taking ENGL 100 in summer may not enroll in any academic courses.

**The Admission Decision**

The most important criterion for admission to AUC is demonstrated sustained academic achievement. 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 program, 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

Admission applicants must submit all required application materials to be considered for admission. The current Undergraduate Admission Application booklet lists the specific documents that applicants must submit to complete the application. The information is also available on the World Wide Web at: www.aucegypt.edu/admissions

Minimum requirements for first-year applicants: AUC’s minimum requirements for first-year 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 both the first sitting and the final sitting of the Thanawiya Amma. Applicants must earn at least 70 percent on the final sitting to be considered for admission.
- Thanawiya Amma from Arab countries - Arts, or Science (General Secondary School Certificate). Submit the results of both the first and the final sitting of the Thanawiya Amma. Applicants must earn at least 75 percent on the final sitting to be considered for admission.
- British Certificate: Submit eight GCE/GCSE/IGCSE subjects. Applicants who have completed Advanced/Advanced Supplementary level subjects and have earned excellent grades are given preference. Grades ‘A to C’ are accepted at the Ordinary and Advanced Supplementary levels. Grade ‘D’ is accepted at the Advanced level only. Subjects completed at the Advanced and Advanced Supplementary level are not double counted. 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 with at least a 2.0 (on a four-point scale) grade point average in academic courses. The estimated SAT-I composite cut-off score for Fall 2011 and spring 2012 is 1350 or comparable ACT scores. Students are encouraged to complete a well balanced university preparatory program that includes:
  - Three years of mathematics including algebra, geometry and trigonometry.
  - Two years of a second modern language.
  - Two years of a laboratory science.
  - Three years of social sciences.
  - One year of fine arts course work and training.
  - A program of physical and health education

Applicants who have attended an accredited high school for less than three semesters must also submit official results in SAT-II in two subjects with a total score of 1100 and a minimum score of 500 on each subject.

Applicants who have taken Advanced Placement (AP) courses and exams (results issued by the College Board) may be granted transfer credit.

- International Baccalaureate. Complete the International Baccalaureate Diploma program.
- Zeugnis der Allgemeinen Hochschulreife (German Secondary Certificate). Complete Gymnasium or high school and submit Abitur results. The academic average is a minimum of four.
Catalog 2012-2013 Extract

- Baccalaureate de l’Enseignement Secondaire (French Secondary School series L, S or ES). Complete the French Baccalaureate with an academic average of at least passable.
- Canadian certificates.
- Other Programs and Certificates - complete a rigorous university preparatory secondary education program.

Medical Examination

A recent medical report stating that the student is physically and mentally capable of doing university work should be submitted with the application.

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 will be 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. 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 credit 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. 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. Studies completed more than five years prior to matriculation into the university are not transferable. 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:

- **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.

- **The College Board Advanced Placement (AP) Examinations.**
  The University grants transfer credits for academic subjects with scores of four or five (out of five).

- **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).

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

- **British Certificates (GCE Advanced Level)**
  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, AO, 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. Selected applicants must submit recent TOEFL or Academic IELTS results with their readmission application.

<table>
<thead>
<tr>
<th>English Level at Time of Withdrawal</th>
<th>Lapse of Time</th>
<th>TOEFL Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Successfully completed RHET 201</td>
<td>Less than 24 months</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>More than 24 months</td>
<td>Yes</td>
</tr>
<tr>
<td>Enrolled in ENGL 100, or RHET 101,</td>
<td>Less than 6 months</td>
<td>No</td>
</tr>
<tr>
<td>102 or 201</td>
<td>Between 6-12 months</td>
<td>Optional</td>
</tr>
<tr>
<td>Enrolled in IEP</td>
<td>Less than 6 months</td>
<td>No</td>
</tr>
<tr>
<td>Enrolled in IEP, ENGL 100, or RHET 101, 102 or 201</td>
<td>More than 12 months</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**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. Such students pay regular AUC fees in U.S. dollars.

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 to AUC’s New York office. The current Study Abroad/Non-Degree Application Booklet lists application deadlines and the specific documents that applicants must submit to complete their application. The information is also 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 file 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 Arabic Language Institute

The Arabic Language Institute is one of the most respected Arabic language study programs in the world. The Institute 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 Institute’s world-class faculty teaches classes in Modern Standard Arabic, Classical Arabic, and Egyptian Colloquial Arabic at the elementary, intermediate, and advanced levels. The Institute’s programs culminate in certificates of achievement recognized around the world.

Arabic Language Institute applicants submit completed application forms, as well as other materials specified in the current Undergraduate Admission Application booklet. The information is also available on the internet at: www.aucegypt.edu/huss/ali/Pages/default.aspx

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 101 or ALNG 111.

First-Year Experience Program

First-Year Experience Program (FYE)

A mandatory program providing a common vision for all entrants and engaging them in guided activities and experiences, the significance of which they can reflect upon and learn to appreciate. Students will also read and sign the code of academic integrity during the program.

Goals

This program aims to familiarize students with knowledge of the purposes and expectations of higher education, AUC culture and services, student rights and responsibilities, academic, personal and social competencies necessary for college success; equip them with the skills to become self-reliant in the use of university information resources, and in
identifying relevant service offices when needed; and promote the values of respect and appreciation for the institution, other members of the AUC community, and the learning experience.

Participants

Undergraduate Egyptian and international degree-seeking students, including ELI students, who have been admitted to AUC will take part in the FYE program. Transfer students, international non-degree seeking students and graduate students do not form part of this program.

Facilitators and Student Leaders

Classes are administered by a faculty member who is assisted by a student leader. Student leaders organize social events to help freshmen integrate and make new friends.

Structure

The FYE is designed as a thematic-based experiential learning program that includes seminars, interactive sessions, and an evening Convocation. Each of the program days covers a theme that highlights a key value or area of knowledge prioritized in the university mission statement.

Attendance

First year students are required to attend all days of this program. Students who miss FYE will not be permitted to register for their courses.

The Core Curriculum

Click on any of the following links for information:

- Goals and Objectives
- General Description

I. Primary Level: 16-28 credit hours
II. Secondary Level: 12 credit hours
III. Capstone Level: 6 credit hours

Goals and Objectives

“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 co-operative endeavor. It is the competence to think, analyze and understand independently.” — Former AUC President Thomas Bartlett
The primary aim of AUC’s Core Curriculum is to ensure that all students, regardless of major, receive a strong grounding in the traditional liberal arts and sciences. The Core Curriculum is a body of courses designed to provide a broad liberal arts base for students. It aims to develop basic academic and intellectual traits while enhancing students’ writing skills, as well as their ability to reason and construct a logical argument. It strives to familiarize students with a diverse body of knowledge and intellectual tradition, and helps them understand themselves, in addition to their culture, society and place in the world. It encourages them to address the patterns of rational thought and argumentation that underpin the world’s great intellectual traditions, and introduces them to the ways in which science seeks to comprehend the natural world. In sum, the Core Curriculum lies at the heart of AUC’s commitment to the liberal arts. It is, first and foremost, an education in the fundamentals of learning itself.

**General Description**

The Core Curriculum is a body of 10 to 15 courses (30 to 46 credit hours) that all students are required to complete, regardless of major. It is divided into three components.

The Primary Level consists of a set of English and Arabic language requirements (3 to 15 credit hours) and four arts and science courses (13 credit hours). They are designed for AUC freshman and most will complete them during their first three semesters. The four courses include Scientific Thinking, Philosophical Thinking (all students must take both), a natural science course and a freshman requirement in the humanities or social sciences. All students majoring in the fields of science and engineering (except actuarial science) are exempted from the general science elective. In addition, students who demonstrate the appropriate competence may be exempted from up to six credit hours of Arabic language and up to six credit hours of English writing courses.

The Secondary Level consists of four requirements in the social sciences and humanities (12 credit hours) including one course in the general humanities and social sciences; one that deals with world history, culture, society, politics and economics; and two that deal with the history culture, society, politics and economics of the Arab world. Most students will complete one of these four requirements in each semester of their junior and senior years.

The Capstone Level consists of two requirements that students are intended to meet in their senior year or beyond. The goal is to ensure that students meeting the requirements in their senior or fifth year take courses that are designed for seniors, challenge them to the highest level of their ability and prepare them for life after graduation.

**Restrictions**

No course which a student employs to meet a requirement of the Core Curriculum in the secondary level may also be used to meet any of the requirements — including concentration requirements, specialization requirements, collateral requirements, major core requirements, concentration electives, and general electives — of that student’s major. Similarly, no course that a student employs to meet any of the requirements of a major may be used to meet any of the requirements of the Core Curriculum except in the core capstone level. In other words, one course may not be double-counted for both Core Curriculum and major credit in the core capstone level. Moreover, a student may employ a course that meets any of the requirements of the Core Curriculum to meet the requirements of a minor.

**I. Primary Level: 16-28 credit hours**
Category 1: English Composition and Communication (3-9 credit hours)

**Rhetoric and Composition**

Students must fulfill this requirement in one of the following options:

A. RHET 101 - Approaches to Critical Writing  
   RHET 102 - Effective Argument  
   RHET 201 - Research Writing

Or

B. RHET 102 - Effective Argument  
   RHET 201 - Research Writing  
   **Any RHET 300 or 400 level course**  
   (310, 320, 321, 322, 323, 325, 330, 332, 334, 340, 341, 342, 345, 380, 399, 400, 410, 450, 480, 490)

Or

C. RHET 201 - Research Writing  
   **Any RHET 300 or 400 level course**  
   (310, 320, 321, 322, 323, 325, 330, 332, 334, 340, 341, 342, 345, 380, 399, 400, 410, 450, 480, 490)

Or

D. **Any RHET 300 or 400 level course**  
   (310, 320, 321, 322, 323, 325, 330, 332, 334, 340, 341, 342, 345, 380, 399, 400, 410, 450, 480, 490)

*RHET courses taken as core curriculum electives at the secondary and capstone levels may NOT be double-counted for RHET requirements in the primary level.

**Junior level

Category 2: Arabic Language (0-6 credit hours)

All newly admitted students, except those who have passed the thanawiya amma exam or its equivalent, will take an Arabic placement exam. Based on the exam results, students may be required to take up to two modern standard Arabic courses.

ALNG 101, 102, or 103; ALNG 201, 202 or 203

Category 3: Information Literacy

LALT 101 (non-credit)
Category 4: Fundamental Intellectual Skills Requirement (6 credit hours)

- PHIL 220 - Philosophical Thinking (core curriculum requirement)
- SCI 120 - Scientific Thinking

Category 5: Natural Sciences or Quantitative Thinking (3 credit hours plus 1 lab credit)

*Restriction: Students majoring in any of the fields of the School of Sciences and Engineering are exempted from the natural science requirements. Actuarial science students should take a lab.*

(Choose one course with lab)

- BIOL 102 & SCI 150L - Essentials of Environmental Biology
- BIOL 103 - Introductory Biology
- BIOL 104 - The Unity of Life
- BIOL 105 - Diversity of Life
- CHEM 103 & SCI 150L - Chemistry and Society (for students with no chemistry background)
- CHEM 104 & SCI 150L - Man and the Environment
- CHEM 105 & SCI 150L - General Chemistry I
- PHYS 100 & SCI 150L - Physics for Poets (for students with no physics background)
- PHYS 199 & SCI 150L - Selected Topic for Core Curriculum
- SCI 105 & SCI 150L - Science and Technology of Ancient Egypt
- SCI 109 & SCI 150L - Exploration of the Universe
- SCI 240 & SCI 150L - Chemistry, Art and Archaeology
- SCI 250 & SCI 251L - Introduction to Geology
- MACT 112 & SCI 150L - Statistical Reasoning
- MACT 199 & SCI 150L - Selected Topic for Core Curriculum

Category 6: Humanities or Social Sciences (3 credit hours)

(Choose one course from the two sub categories: humanities or social sciences)

Subcategory 1: Humanities Option

- AMST 199 - Selected Topics for Core Curriculum
- ARIC 100 - Arabs and Muslims Encountering the Other
- ARIC 101 - Children's Literature and Cultural Representations
- ARIC 199 - Selected Topic for Core Curriculum
- ARTV 199 - Selected Topic for Core Curriculum
- CREL 135 - Dimensions of the Sacred: Exploring Religious Experience
- ECLT 123 - Experiencing Creativity: Texts and Images
Subcategory 2: Social Science Options

If students choose a course in the social sciences in the primary level, they must choose a humanities course in the secondary level and vice versa.

- ANTH 199 - Selected Topic for Core Curriculum
- CORE 199 - Selected Topic for Core Curriculum
- ECON 199 - Selected Topic for Core Curriculum
- EGPT 199 - Selected Topic for the Core Curriculum
- POLS 101 - Introduction to Political Science
- POLS 199 - Selected Topic in Political Science
- SOC 199 - Selected Topic for Core Curriculum

Most students will complete these requirements in their first three semesters.

II. Secondary Level: 12 credit hours

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

Sub-Category 1: Humanities Options
Every student must choose and complete one course from the following sub-category lists. The requirement should be completed by the end of the student’s sixth semester. If students choose to meet the primary level Humanities/Social Science requirement by taking a Humanities course, they must choose from the list of Social Science options below to meet this requirement. If students choose to meet the Primary level Humanities/Social Science requirement by taking a Social Science course, they must choose a course from the Humanities options below to meet this requirement.

- ARIC 206 - Art and Architecture of the City of Cairo
- ARIC 270-271 - Introduction to Islamic Art and Architecture
- ARIC 305 - Arabic Literature and Gender
- ARIC 306 - Arabic Literature and Film
- ARIC 307 - The Writer and the State
- ARIC 320 - Introduction to Sufism
- ARIC 335 - An Introduction to Islam
- ARIC 336 - Studies in Ibn Khaldun
- ARIC 337 - Shi'i Muslims in History
- ARTV 213 - Introduction to Visual Cultures
- ARTV 222 - Architecture: Art or Engineering
- ARTV 299 - Selected Topic for Core Curriculum
- ARTV 314 - Modern and Contemporary Architecture
- ARTV 315 - Art Theory
- ARTV 370 - Selected Topics in Art
- CREL 299 - Selected Topics for Core Curriculum
- ECLT 200 - Introduction to Literature
- ECLT 201 - Survey of British Literature
- ECLT 202 - Global Literature in English
- ECLT 299 - Selected Topic for Core Curriculum
- FILM 220 - Introduction to Film
- FILM 299 - Selected Topic for Core Curriculum
- HIST 203 - Western Civilization from Antiquity to Medieval Europe
- HIST 204 - Europe from the Middle Ages to the Enlightenment (1337-1789)
- HIST 205 - Europe in the Age of Revolution and Reform (1789-1914)
- HIST 211 - History In The Making
- HIST 212 - The Quest for the Historical Jesus
- HIST 299 - Selected Topics for Core Curriculum
- HIST 307 - The Middle Ages, the Renaissance and the Reformation
- HIST 308 - Europe in the Age of Reason
- MUSC 220 - Introduction to Music
- MUSC 240 - Western Music Theory I
- MUSC 299 - Selected Topic for Core Curriculum
- PHIL 221 - Informal Logic
- PHIL 224 - Self and Society
- PHIL 226 - Philosophy of Religion
- PHIL 230 - Introduction to Ethics
- PHIL 299 - Selected Topic for Core Curriculum
- PHIL 344 - Literature and Philosophy
- RHET 225 - Public Speaking
- RHET 299 - Selected Topics
• RHET 310 - Effective Rhetoric: Discourse and Power
• RHET 323 - Changing Words, Changing Worlds
• RHET 325 - The Rhetoric of Argument in the Humanities and Social Sciences
• RHET 340 - Life Narratives: Reading as Writers
• RHET 345 - The Writer's Workshop
• RHET 380 - Poetry Writing
• RHET 399 - Selected Topics
• THTR 203 - The Art of the Theatre
• THTR 230 - Play Analysis
• THTR 299 - Selected Topic for Core Curriculum
• THTR 350 - Survey of Dramatic Literature
• THTR 351 - History of The Theatre
• THTR 360 - Playwriting I
• THTR 361 - Playwriting II
• SEMR 200 - Core Seminar
• SEMR 299 - Selected Topics in the Humanities
• SEMR 300 - Core Honors Seminar
• SEMR 310 - Cross-Cultural Perceptions and Representations

Sub-Category 2: Social Sciences Options

• ANTH 202 - Cultural Anthropology
• ANTH 299 - Selected Topic for Core Curriculum
• ARIC 323 - Marriage and the Family in the Medieval and Early Modern Middle East
• ARIC 325 - On The Fringes of Society: Marginals in History
• CORE 299 - Selected Topic for Core Curriculum
• ECON 201 - Introduction to Macroeconomics
• ECON 202 - Introduction to Microeconomics
• EGPT 202 - Ancient Egypt
• EGPT 299 - Selected Topic for Core Curriculum
• LING 252 - Introduction to Linguistics
• LING 268 - Principles and Practice of Teaching English
• PPAD 299 - Selected Topics for the Core Curriculum
• PPAD 308 - Management in Government
• PHIL 234 - Philosophy of the Social Sciences
• PHIL 242 - Philosophical Anthropology
• PSYC 201 - Introduction to Psychology
• PSYC 299 - Selected Topics in Psychology
• RHET 320 - Business Communication
• RHET 321 - Technical Communication
• RHET 322 - Writing in the Social Sciences
• RHET 330 - Writing and Cognition
• RHET 332 - Presentation and Persuasion in Business
• RHET 334 - Digital Rhetoric
• SOC 201 - Introduction to Sociology
• SOC 240 - Introduction to Community Development
• SOC 299 - Selected Topic for Core Curriculum
Category 2: Arab World Studies (6 credit hours)

Every student must choose and complete two courses from the following list. This requirement should be completed by the end of the student’s sixth semester.

- ANTH 210 - Arab Society
- ANTH 312 - Peoples and Cultures of the Middle East and North Africa
- ANTH 390 - Selected People and Culture Areas
- ARIC 201 - Introduction to Classical Arabic Literature
- ARIC 202 - Introduction to Modern Arabic Literature
- ARIC 203 - Classical Arabic Literature in Translation
- ARIC 204 - Modern Arabic Literature in Translation
- ARIC 205 - Islamic Architecture, from the Beginnings to the Present Day
- ARIC 246 - Survey of Arab History
- ARIC 299 - Selected Topic for Core Curriculum
- ARIC 305 - Arabic Literature and Gender
- ARIC 306 - Arabic Literature and Film
- ARIC 307 - The Writer and the State
- ARIC 308 - Colloquial and Folk Literature
- ARIC 309 - Selected Themes and Topics in Arabic Literature
- ARIC 310 - Selected Themes and Topics in Arabic Literature in Translation
- ARIC 314 - The Arabic Novel
- ARIC 315 - Arabic Drama
- ARIC 316 - The Arabic Short Story
- ARIC 321 - Social and Cultural History of the Middle East, 600-1800 A.D.
- ARIC 322 - Land, Trade and Power: a History of Economic Relations in the Middle East, 600-1800 A.D.
- ARIC 324 - Non-Muslim Communities in the Muslim World
- ARIC 343 - Birth of Muslim Community and Rise of the Arab Caliphates
- ARIC 344 - Caliphs and Sultans in the Age of Crusades and Mongols
- ARIC 345 - Gunpowder Empires: Ottomans, Safavids and Mughols
- ARIC 355 - State and Society in the Middle East, 1699-1914
- ARIC 357 - Selected topic in Middle East History
- CREL 299 - Selected Topics for Core Curriculum
- ECON 215 - Economic History of the Modern Middle East
- FILM 320 - Cinema in Egypt and the Arab World
- HIST 247 - The Making of the Modern Arab World
- HIST 299 - Selected Topics for Core Curriculum
- HIST 330 - Urban Landscapes in the Modern Middle East/North Africa
- HIST 331 - History of Palestine/Israel
- HIST 333 - Zionism and Modern Judaism
- MUSC 342 - Music in the Arab Tradition
- SOC 203 - Social Problems of the Middle East
- SOC 206 - Arab Family Structure and Dynamics
- SOC 240 - Introduction to Community Development
Category 3: International/World Studies (3 credit hours)

Every student must choose and complete one course from the following list. The requirement should be completed by the end of the student’s sixth semester.

- AMST 299 - Selected Topics for Core Curriculum
- ANTH 302 - Kin and Family in a Global World
- ANTH 320 - States, Capital and Rural Lives
- ANTH 352 - Language in Culture
- ANTH 360 - Gender, Power and Social Change
- ANTH 372 - Applied Anthropology
- ANTH 382 - Peoples and Cultures of Sub-Saharan Africa ANTH 382 - Peoples and Cultures of Sub-Saharan Africa
- ANTH 384 - Peoples and Cultures of Latin America ANTH 384 - Peoples and Cultures of Latin America
- ANTH 386 - Peoples and Cultures of Asia ANTH 386 - Peoples and Cultures of Asia
- ANTH 390 - Selected People and Culture Areas ANTH 390 - Selected People and Culture Areas
- ARIC 299 - Selected Topic for Core Curriculum
- ARIC 345 - Gunpowder Empires: Ottomans, Safavids and Mughols
- CREL 210 - Religions of the World
- CREL 220 - Hinduism and Buddhism in India
- CREL 230 - Pilgrimage Traditions in the World's Religions
- CREL 299 - Selected Topics for Core Curriculum
- CREL 320 - Masters, Saints, and Saviors: Sacred Biography in the World's Religions
- ECLT 209 - Introduction to American Studies
- ECLT 299 - Selected Topic for Core Curriculum
- ECLT 301 - Medieval Literature
- ECLT 302 - Literature of the Renaissance
- ECLT 332 - World Literature
- ECLT 333 - African Literature
- ECLT 346 - Third World Literature
- ECLT 347 - Selected Topics
- ECLT 353 - Modern Drama
- ECON 224 - Economic History
- FILM 370 - Selected Topics in Film
- HIST 201 - History of American Civilization to the Nineteenth Century
- HIST 202 - History of Modern American Civilization
- HIST 206 - Europe in International Politics in the Twentieth Century
- HIST 207 - World History
- HIST 225 - East Asian History
- HIST 299 - Selected Topics for Core Curriculum
- HIST 309 - History of American Political Thought
- HIST 320 - Big History
- LING 200 - Languages of the World
- MUSC 225 - World Music
- MUSC 240 - Western Music Theory I
- MUSC 255 - The Songs of America
• MUSC 360 - Music in the Western Tradition
• PHIL 238 - World Philosophy
• PHIL 319 - Development and Responsibility
• PHIL 356 - American Philosophy
• POLS 299 - Selected Topics for Core Curriculum
• RHET 341 - Travel Writing
• SEMR 310 - Cross-Cultural Perceptions and Representations
• SOC 303 - Social Movements
• SOC 304 - Development Agencies
• SOC 306 - Sociology of Literature
• SOC 321 - The Urban Experience
• SOC 322 - Rural Sociology
• SOC 323 - Fundamentals of Population Studies
• SOC 332 - Social Constructions of Difference: Race, Ethnicity, and Class

SOC 370 - Environmental Issues in Egypt

III. Capstone Level: (6 credit hours)

The requirements may be met by selecting two courses from a variety of options, including Senior Project or Thesis, Senior Seminar, Senior Internship, Study Abroad, Community Engagement, Honors Seminar, Interdisciplinary Senior Seminar or a 400 level course counting toward a double major. All pre-requisites apply.*

• ACCT 403 - Contemporary Issues in Accounting *
• AENG 490 - Senior Project I *
• ANTH 422 - Religion in a Global World *
• ANTH 440-441 - Practicum in Community Development*
• ANTH 460 - Development Studies Seminar *
• ANTH 495 - Senior Seminar *
• ARTV 470 - Senior Project (B) *
• BIOL 495 - Senior Research Thesis */ BIOL 496 - Seminar in Biology *
• CENG 490 - Senior Project I */ CENG 491 - Senior Project II *
• CHEM 495 - Senior Thesis and Seminar *
• CORE 499 - Selected Topic for Core Curriculum
• CSCE 491 - Senior Project I */CSCE 492 - Senior Project II *
• ECLT 409 - Greek Classics in Translation
• ECLT 410 - Classics of the Ancient World
• ECLT 411 - History of Literary Criticism
• ECLT 412 - Modern Literary Criticism
• ECLT 447 - Capstone Seminar: Selected Topics
• ECON 308 - Labor Economics *
• ECON 411 - Seminar: Special Topics in Economics *
• ECON 415 - Seminar on Economic Development in the Middle East *
• EENG 490 - Senior Project I */ EENG 491 - Senior Project II *
• EGPT 440 - Ancient Egyptian Religion and Ethics **
• EGPT 499 - Selected Topics in Egyptology **
• ENGR 494 - Entrepreneurial Development and Innovation
• ENTR 413 - Entrepreneurship and Innovation *
• FILM 450 - Senior Film Project *
• FILM 470 - Advanced Seminar in Film Study and Research
• HIST 401 - Selected Topics in the History of the United States
• HIST 412 - Selected Topics in Modern Egyptian History
• HIST 415 - The Marriage Crisis and the Middle East
• HIST 425 - Food in World History **
• HIST 435 - Social and Political History of Modern Cairo
• HIST 454 - Modern Movements in Islam
• HIST 462 - Selected Topics in the History of the Modern Middle East
• JRMC 420 - Media Management *
• JRMC 425 - Integrated Marketing Communication Campaigns Capstone *
• JRMC 480 - Multimedia Reporting Capstone *
• JRMC 482 - Media Convergence Capstone *
• MACT 495 - Senior Thesis *
• MACT 497 - Practical Internship *
• MENG 490 - Senior Project I * / MENG 491 - Senior Project II *
• MGMT 480 - Business Planning and Strategy *
• MKTG 480 - Marketing Strategy *
• MUSC 492 - Capstone Final Recital
• PENG 490 - Senior Project I * / PENG 491 - Senior Project II *
• PHIL 410 - Advanced Seminar in Aesthetics **
• PHIL 418 - Philosophical Masterpieces *
• PHIL 420 - Philosophical Figures *
• PHYS 401 - Senior Thesis and Seminar *
• POLS 400 - Honors Seminar: Political Theory and Current Issues in World Affairs *
• POLS 430 - Seminar: Special Topics in Political Science *
• PPAD 490 - Practicum *
• PSYC 430 - Advanced community psychology: Applied research and service *
• PSYC 442 - Clinical Psychology *
• RHET 342 - Writing Children's Literature *
• RHET 400 - Writing and Editing for Publication *
• RHET 410 - Grant Writing for Community Building *
• RHET 450 - Imagining the Book *
• RHET 480 - Research and Writing Internship *
• RHET 490 - Advanced Scientific and Technical Writing *
• SEMR 300 - Core Honors Seminar
• SEMR 310 - Cross-Cultural Perceptions and Representations
• SEMR 310/02 The Arab Spring: Perceptions and Reflections from the Arab World
• SEMR 310/03 South-South Dialogue: Perceptions and Reflections from the Global South
• THTR 490 - Senior Thesis *
• THTR 495 - Senior Honors Project **

* All prerequisites apply
** by instructors permission

To see SEMR courses description, please click here.
Academic Support Services

Academic Support Services

- The Libraries and Learning Technologies
- The Writing Center
- Information Technology
- Office International Programs
- Summer and Winter Sessions
- Career Advising and Placement Services
- AUC Press
- Office of Equal Opportunity and Affirmative Action

Libraries and Learning Technologies

Dean: S. El Sawy
Assistant Dean: S. Sobeih

AUC Libraries and Learning Technologies consist of the Libraries (Main Library, and the Rare Books and Special Collections Library) and the Center for Learning and Teaching.

Main Library

Associate Dean for Main Library: D. Nelson
Senior Librarians: A. Appelton, L. Eid, H. El Ridi, M. Houlihan, R. Johnston, J. Spencer, and H. Yaghmour
Librarians Emeritae: L. Moftah, A. Nosseir, L. Tweddle

The mission of the AUC Library is to support the instructional and research needs of the AUC community. The Library provides the academic community with one of the largest English language research collections in Egypt, offering online access to over 150 database titles, 71,856 e-books, and about 51,000 full-text journals. Off-campus access is available for AUC faculty, staff and students. The Main Library holds 429,342 print volumes (books and periodicals), access to 59,877 serials in print or digital formats, and 3,360 media items, all with 3M RFID stock control tags. The online catalog is Innovative Interfaces Millennium. All stations in the Learning Commons provide a collaborative, technology-rich environment where library users have the tools and support to access, manage and produce information. It is maintained by the support services of LLT units and other campus service providers. There are computer stations on all floors as well as over 170 public PCs and 45 wireless enabled laptops available for internal use. The Library is a member of OCLC and RLG SHARES Program, which along with the use of ILLiad software, enables rapid document delivery from abroad. A required one-hour Information Literacy (LALT) course instructs AUC freshmen in the essentials of how to research, locate, and critically evaluate information. Additional instruction is offered in all disciplines to students, faculty, staff and visitors in the Library Instruction Labs.

AUC Libraries are accessible online at: http://library.aucegypt.edu/
Rare Books & Special Collections Library & University Archives

Director and Associate Dean for the RBSCL & Archives: P. Croom
University Archivist and Director of Records Management Program: S. Urgola
Digital Collections Archivist: Carolyn F. Runyon
Assistant Director for RBSCL Services: D. Abdel Razek

The Rare Books and Special Collections Library at the American University in Cairo supports research and teaching in the arts, culture, and society of Egypt and the Middle East. The library documents ancient, medieval, and modern Egypt and the wider region, with particular strengths in Egyptology, Islamic Art and Architecture, and travel literature, the focus of extensive rare and contemporary book collections.

The library also collects archival and manuscript collections reflecting modern Egyptian social, cultural, and intellectual life. These materials relate to subject areas such as modern Egyptian and regional architecture, the arts (including cinema, photography, and other visual media), social and women’s history, and religion and Coptic studies. The library also houses AUC’s University Archives, which maintains records relating to the university’s history dating to the early twentieth century.

The library’s holdings encompass a variety of formats, including books, periodicals, theses, archives and manuscripts, photographs and slides, maps, architectural drawings and plans, memorabilia and artifacts, and audio-visual media. Written materials are primarily in English, but languages such as French, German, and Arabic are also represented.

The Rare Books and Special Collections Library is available online at:
http://lib.aucegypt.edu/screens/rbscl.html

Center for Learning and Teaching

Director and Associate Dean for Learning Technologies: A. Ellozy
Associate Director & Director of Learning Commons: P. Glavanis

The mission of the Center for Learning and Teaching (CLT) is to promote excellence in teaching and to facilitate the effective application of technology to the teaching/learning process. The Center keeps a spotlight on teaching through a variety of programs, services, workshops and lectures, including the Faculty Development Institutes, a bi-weekly newsletter, instructional design consultations, formative assessment activities, classroom action research and the Student Technology Assistant program which provides one-to-one training and support for faculty who want to use diverse instructional technologies. CLT is also a strong advocate of academic integrity on campus and contributes to its enhancement by administering the plagiarism detection software Turnitin.com as well as conducting dedicated workshops for both faculty and students.

Center for Learning and Teaching is available online at:
http://www.aucegypt.edu/academic/clt/

The Writing Center: The Write Place

Our mission is to help graduate and undergraduate students improve their communication abilities by providing services for writing, presenting, and critical thinking in all disciplines. Our student services include individual conferences, the Online Writing Lab (OWL), online writing, research, and interdisciplinary resources, weekly writing workshops, special graduate hours, and research and writing open lab. We also assist faculty from all disciplines in the effective use of writing in their courses through the Writing Specialist program.
Information Technology

The University I.T. organization is headed by the Chief Technology Officer and reports to the Vice President for Planning and Administration. The CTO office includes Network Storage Solutions, IT Security, and IT Planning and Administration. The three central computing organizations – Administrative Computing Services, University Network Services, and Telecommunications – also report to the CTO.

Administrative Computing Services

The mission of the Administrative Computing Services unit (AdCS) is to maintain AUC’s critical administrative applications. Services provided by AdCS include application development, technical resource management, and the design and implementation of computer literacy and training programs for all staff.

AdCS has installed and currently supports over sixty software products, resulting in a set of automated information resources utilized in every major administrative area. These include: the enterprise resource-management system (SAP), the student information system (SIS-PLUS), the fund-raising and alumni-relations system (FUNDAL), the document-management system (Documentum), and office-automation applications. A host of front-end web-enabled interfaces interacts with these systems to provide on-line e-service access to students, faculty, staff, and administration.

University Network Services

The University Network Services unit (UNS) is responsible for planning, designing, developing, operating and managing the campus-wide data communications network. The campus network is based on a gigabit backbone with 4,700 switched 10/100 Mbps ports distributed throughout all campus buildings and satellite locations in Maadi, Zamalek, Heliopolis, and the Cairo Center building, supplemented by pervasive wireless network coverage inside and outside campus buildings. The network infrastructure is built to accommodate up to 7,000 ports. UNS actively monitors and manages the network, provides e-mail services for about 10,000 mailboxes, and is the first point of contact for the AUC community for network access needs, queries, and problems.

Telecommunications

The Telecommunications Office provides university faculty, students, and staff with high quality services in voice communications. Committed to guarantee a superior level of service to the university while planning for the future in a cost-effective manner, the Telecommunications Office is responsible for the procurement, installation, and maintenance of all telecommunications services and equipment at all university locations.

Office of International Programs

Associate Provost: A. Lesch
The International Programs Office (IPO) is responsible for the academic components of all international programs offered by AUC.

**International Agreements:**

IPO negotiates, reviews and maintains administrative oversight over agreements with international universities, in coordination with the Schools and the Provost. All Memoranda of Understanding and faculty and student mobility agreements are processed through IPO. However, agreements on research cooperation are processed through the Office of Sponsored Programs.

**Exchange and Study Abroad for AUC Students:**

IPO offers AUC students a wide variety of study abroad opportunities for a semester or an academic year in the United States, Canada, Europe, Asia and the Middle East. International study is an enriching experience that is valuable for students’ personal and intellectual growth and for their career prospects. In exchange programs, students pay the regular AUC tuition and fees, rather than the tuition and fees of the host university. In a Direct Enrollment Program (also called a Study Abroad program), students pay the tuition and fees of the host university. Under both arrangements, students cover the cost of transportation, housing, meals, and other living expenses. Academic credits transfer back to AUC under both arrangements.

AUC currently has 55 exchange partners, half of which are in the United States. These include the University of California system, George Washington University, Pennsylvania State University, Virginia Tech, and Wellesley College in the United States; Concordia and Simon Fraser universities in Canada; St. Andrews and East London universities in Great Britain; Bocconi, Lund, Sciences Po, and Free University of Berlin in continental Europe; Bogazici University, The American University of Beirut, and Carnegie Mellon/Qatar in the Middle East; and Kansai Gaidai and Akita universities in Japan.

IPO facilitates arrangements for AUC students who want to study abroad in the summer on a Direct Enrollment/Study Abroad basis. These opportunities include University of California (Berkeley) and academic programs in England, France, Greece, Italy, and Turkey.

**Special Academic Programs for Groups from Foreign Universities:**

IPO arranges academic programs for incoming groups from overseas universities, on a fee-for-service basis. These programs, tailored to suit the needs of the particular university, last one day, two-three weeks or as long as seven weeks, and are held during the academic year, the winter term, or the summer semester. AUC professors often lecture to these groups and, when feasible, the students stay in the AUC dormitories. AUC partners have included St. Olaf College, Seton Hall University’s Law School, University of Zurich’s Law Faculty, University of Delaware, Grand Valley State University, Bentley University, and Princeton University.

**Academic Advising for Incoming Study Abroad Students:**

IPO handles the academic advising and registering for Incoming Study Abroad Students (ISABs), both those coming on exchange and those coming on a direct-enrollment basis. Students enrolled at public universities in the US pay the out-of-state tuition rate of their home university if that rate is lower than AUC’s tuition. Applications for study abroad at AUC are processed by the New York Office.

Undergraduate ISABs can enroll in Arabic language classes and in regular undergraduate courses, usually at the 300-400 level. Graduate-level ISABs enroll in masters’ level courses. As AUC is a US-accredited university, students transfer credits earned at AUC to their home institutions. ISABs come from as many as a hundred colleges and universities in the United States, Canada, Europe, and Asia.
**Academic Advising for International Transfer Students:**

IPO handles the academic advising and registering for international transfer students in consultation with the Registrar, Core Curriculum office, and the students’ disciplinary major.

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**Summer and Winter Sessions**

*Associate Provost for Academic Administration: S. Sayess*

A large number of students from Egypt and from more than thirty other countries normally attend AUC’s summer session. While the majority are pursuing degrees at AUC during the academic year, many students who are not regularly enrolled at AUC join the summer session from the second week of June through the third week of July to pursue studies of their own interest. Moreover, the university offers few accelerated courses during summer sessions. Summer A to begin second week of June and Summer B to begin first week of July; each session lasts for three weeks.

Students can choose from a wide range of courses which are usually offered during the AUC summer session. Besides those courses that are usually oversubscribed during the academic year, every effort is made to offer courses of special interest to international students, such as Islamic art and architecture, Egyptology, Arab society, and Middle East-oriented courses in history, economics, and management.

Intensive courses at all levels in modern standard Arabic and in Egyptian colloquial Arabic are also offered during the summer session by AUC’s Arabic Language Institute. This brings to the AUC campus more students from the United States and other countries to share with Egyptian students a truly international educational experience.

The winter session provides additional opportunities to students from the University and outside to take intensive courses for academic credit. The winter session courses are normally offered during the first three weeks of January.

Extracurricular activities are planned for the students and faculty, including trips and cultural events, such as performances of Arabic music and art shows. An informal athletic program offers basketball, volleyball, tennis, soccer, and table tennis. Seminars and special lectures by distinguished visitors are also an occasional part of the summer and winter sessions.

Housing, board, medical, and other university services are provided on the same basis as during the academic year.

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**Career Advising and Placement Services**

*Executive Director: M. Guindi*

*Director, Recruitment Services: M. Fakhry*

The office of Career Advising and Placement Services (CAPS) is committed to provide quality service to students, alumni and employers in the areas of career planning and employment through a centralized comprehensive program.

CAPS educates students and alumni for life-long career planning. Assistance is provided in identifying career objectives, designing and implementing job search strategies, as well as exploring experiential learning, employment, and post-graduate opportunities.
The office fosters collaborative relationships with faculty, employers and the professional community at large to enhance a mutually beneficial relationship between our constituents.

CAPS supports employers' endeavors, primarily in Egypt and the Middle East, in recruiting potential candidates for employment.

CAPS maintains equal opportunity compliance and follows affirmative action principles in conducting its services.

Career Advising

The program is designed to support the career planning endeavors of AUC students and alumni in individual and group settings through the following services:

- **Individual Career Advising:** Career advisors are available to counsel students and alumni on career related matters. Advisors assist in identifying different career options and support students in making occupational choices that are compatible with their skills and interests. Peer Career Advisors provide assistance in the areas of resume writing and interviewing.

- **Self-Assessment:** Students are encouraged to develop a better understanding of their personality types, interests, skills, and values to help them take well-informed career decisions. The self-assessment process is enhanced by the use of specialized inventories, such as The Myers Briggs Type Indicator (MBTI) and the Strong Interest Inventory (SII); both instruments are administered and interpreted by qualified professionals.

- **Career Development Workshops**
  Each semester, CAPS conducts a series of workshops which are designed to provide students with the job search skills required for marketing their qualifications to employers. Topics covered include career planning, high impact resumes, job search strategies, power interviewing and your path to graduate study.

Career Exploration Preparation

To land satisfactory employment, students are encouraged to research their occupational interests, career options, and employers' information; in addition to acquiring hands-on experience that complements their academic background.

- **Career Resources Library:** To support students' career planning endeavors, CAPS career library hosts a wide variety of general career-related resources and corporate-specific recruiting materials.

- **Career Mart:** In the spring, AUC hosts an annual CareerMart, which allows students to meet with professionals from a variety of disciplines in an informal setting and explore various career fields and relevant career opportunities.

- **Job Shadowing Program:** CAPS helps students explore their career as early as their freshman year. Job Shadowing allows students to shadow a business professional in their field of interest for one or two days to see what a daily routine of that career is really like.

- **Internship Program:** CAPS organizes an internship program through which AUC students gain valuable work experience during the winter break or summer vacation. Students apply to the announced internships.

- **Career Conference:** The office organizes an annual career conference for junior and senior students to facilitate their transition to the world of work. The conference allows the students to network with corporate professionals and equips them with the necessary tools for their career planning and job search process.

Recruitment Services

Throughout the year, the office provides an interactive communication channel between AUC graduating students/alumni and employers seeking qualified job candidates. The program includes:
• **Employment Fairs:** Twice a year, AUC hosts local, national and multinational employers in an informal one-day recruiting event in order to promote a productive exchange of career information between employers' representatives and AUC students and alumni seeking professional employment. Details on participating companies and available vacancies are published in an Employment Fair booklet.

• **Vacancy Announcements:** The office publishes a weekly e-jobs bulletin that communicates current employment opportunities to seniors and alumni subscribers via e-mail. Hard copies are posted weekly on CAPS bulletin boards.

• **Resume Referral Service:** The office maintains a resume data bank for alumni engaged in the job search process. The data bank is utilized to refer to the employer the resumes of interested applicants whose qualifications match the company's requests.

• **On-Campus Corporate Visits:** To facilitate the interaction between students and employers, CAPS coordinates on-campus company recruiting visits which include corporate presentations, case study seminars and interviews.

For further information on CAPS programs and dates of career-related events, refer to CAPS website: www.caps.aucegypt.edu

The American University in Cairo Press

*Director: M. Linz*

Established in 1960 and reorganized in 1984, the AUC Press has become the region’s foremost English-language publishing house. Its goals and purposes reflect and support AUC’s mission in education, research, and cultural exchange through professional publishing and bookselling services.

*Publishing Programs*

AUC’s publishing house is rapidly expanding its programs of high quality scholarly, literary, and general interest publications on Egypt and the Middle East, publishing some 100 new books each year and maintaining a backlist of around 1500 titles for worldwide distribution. The Press is the primary English-language publisher and the worldwide agent of Nobel Laureate Naguib Mahfouz, and presents the annual Naguib Mahfouz Medal for Literature to support modern Arabic literature in translation. A Fund for Scholarly Books and Translations of Arabic Literature was established in 2000.

*Bookselling Services*

The six AUC Bookstores (located on the New Cairo Campus, on the Downtown Campus, and in Zamalek) supply the university’s textbooks and provide Cairo’s English-language community with AUC Press books and with a wide variety of other books on Egypt and the Middle East, as well as modern fiction and general nonfiction, guides, and gift books.

Office of Equal Opportunity and Affirmative Action

*Director: S. Selim*
Equal Opportunity & Affirmative Action of the AUC (EOAA) is the embodiment of the American University in Cairo's commitment to the value of equality and an environment free of harassment and discrimination.

The EOAA helps facilitate the development of students who respect the rights of others, diversity, and multiculturalism. Through training, joint events and activities, we provide students with the life-skills that effectively help establish their future identities, and assist them in their contribution to attitude changes in Egypt. EOAA helps prepare the students for challenging careers in national and multinational organizations that operate in a dynamic, diverse and multicultural global village.

Accomplishing the above, EOAA holds regular training sessions, seminars and symposiums on a variety of topics such as: integrating the disabled or the challenged, cultural sensitivity training, managing diversity, women's issues, saying no to harassment including sexual harassment, what discrimination does to people, the societal integration of the aged and many more. EOAA also hosts several cultural oriented events that emphasize diversity and equality. Activities furthermore aim to link students to different entities working in these fields. Over and above that, EOAA has its own publication called Linkage (which is also available online) and a multimedia library that includes books, journals, videos about gender, diversity, equality, equal opportunity laws and practice.

EOAA also has a preventive and prescriptive role, helping prevent harassment and discrimination at AUC as well as promote awareness of these issues outside the premises to the larger community.

The office advises, counsels and educates all AUCians (students, faculty and staff) about their legal rights and responsibilities. When and if harassment or discrimination takes place, EOAA mediates or investigates such incidents, and takes measures to ensure that such incidents do not recur.

EOAA is the custodian of the University Policy on Equal Opportunity and Affirmative Action and its Policy on Sexual Harassment that are applicable to all AUCians (students, faculty and staff).

For more information, visit our website:
http://affirmative.aucegypt.edu

Undergraduate Academic Requirements & Regulations

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.
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 University 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 University 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).

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:

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 300 and 400 levels; with a stipulation that no more than 15 transfer credits in 300-400 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 300-400 level courses in programs offered by the School of Business.
2. A maximum of 15 transfer credit hours in the 300-400 level courses in programs offered by the School of Sciences and Engineering.
3. A maximum of 15 transfer credit hours in the 300-400 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 300-400 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 300-400 level courses towards concentration requirements.

Graduation

To be awarded the Bachelor of Arts degree, students must complete a minimum of 120 credit hours (126 in Business Administration and 127 in Accounting) 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. The following rules apply:

Acceptance in 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.

Students must complete all the requirements for both majors. Only in cases where requirements in both majors designate the same specific course(s) can the same course(s) be counted for both majors.

Students must have a faculty adviser in each major. The advisers and student must meet together and plan the student's academic program. Both advisers must sign the student's registration forms.
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.

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 departments.

**Minors**

In addition to major subjects leading to a degree, students may select one or two minor fields of specialization. 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. Students are encouraged to enter minors which 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, taking into consideration 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. A course or courses specifically required in the major and the minor may count towards both the major and the minor. Course(s) which are not specifically required in the major and the minor, will not count towards both the major and the minor.

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.

**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 contained in bulletins issued by the Office of the University Registrar or on the Registrar's Web site. Those seeking to enroll after the scheduled registration period cannot be guaranteed acceptance. If permitted to register they will be charged a late registration fee.

**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 contained in the bulletin issued by the Office of the University Registrar.

- Another course may not 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 not drop 100-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 bulletin issued by the Office of the University 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). The current system of “WP” and “WF” is eliminated.

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.

Students will receive a grade of "F" if they stop attending classes without officially dropping the course.

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.

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.

Declaration of Major

Declaring intended Program during admission:

Students are required to indicate their preferred “Intended Program” during admission. Those who are not accepted to the program of their choice will be admitted as “Undeclared students”.

Selection to degree program is based on:

- Secondary school performance (students who indicate their intended program during Admission).
- Academic requirements set by the department.
- Available places.

Declaring intended Program for "Undeclared" students at the end of their Freshman Year:
Students may choose to declare their major before the beginning of their third semester to have the opportunity to experience a variety of disciplines and courses, and be exposed to a wide range of academic choices.

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**

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, unless by university action.

Students who change their major anytime during their course of study until the beginning of their junior year are required to complete their degree work within the 18 credit hours over the normal major requirements.

Students who change their major at the end of their junior year or during their senior year by university action may be allowed to take courses beyond the normal maximum limits. Any adjustment in the limit will be based on the recommendation of the new major department to the appropriate school committee.

**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 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 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 400-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 University Registrar. The grade may not be changed on the student record.

The following grading system is used at the American University in Cairo:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Points</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4.0</td>
<td>Excellent</td>
</tr>
<tr>
<td>A-</td>
<td>3.7</td>
<td></td>
</tr>
<tr>
<td>B+</td>
<td>3.3</td>
<td>Very good</td>
</tr>
<tr>
<td>B</td>
<td>3.0</td>
<td></td>
</tr>
<tr>
<td>B-</td>
<td>2.7</td>
<td>Good</td>
</tr>
<tr>
<td>C+</td>
<td>2.3</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>2.0</td>
<td>Passing</td>
</tr>
<tr>
<td>C-</td>
<td>1.7</td>
<td></td>
</tr>
<tr>
<td>D+</td>
<td>1.3</td>
<td>Conditionally passing</td>
</tr>
<tr>
<td>D</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>0.0</td>
<td>Failing</td>
</tr>
</tbody>
</table>

Grades not included in the Grade Point Average:

- **P** Pass*
- **F** Fail
- **I** Incomplete
- **S** Satisfactory
- **U** Unsatisfactory
W  Withdrew
WP  Withdrew-Passing
WF  Withdrew-Failing
AU  Audit
IP  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.

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:

<table>
<thead>
<tr>
<th>Course ID</th>
<th>Grade</th>
<th>Credit Hrs</th>
<th>QualityPoints</th>
</tr>
</thead>
<tbody>
<tr>
<td>RHET 101</td>
<td>C</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>CHEM 105</td>
<td>D</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 115L</td>
<td>C+</td>
<td>1</td>
<td>2.3</td>
</tr>
<tr>
<td>MACT 131</td>
<td>F</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>PHYS 111</td>
<td>A-</td>
<td>3</td>
<td>11.1</td>
</tr>
<tr>
<td>PHYS 123L</td>
<td>B+</td>
<td>1</td>
<td>3.3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Current AHRS</th>
<th>EHRS</th>
<th>QHRS</th>
<th>QPTS</th>
<th>GPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>11</td>
<td>14</td>
<td>25.7</td>
<td>1.83</td>
</tr>
</tbody>
</table>

**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", "S", "U", "I", and "W" 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 University 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 "F", 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 the process of education at AUC. Students benefit from the lectures and discussions with their teachers and fellow students. If they fail to attend class, they fail to take advantage of an educational opportunity. For this reason students are expected to attend class regularly; there is no system of permitted absences. The instructor in each class determines the effect of absences on a student's grade in that class. General guidelines followed at AUC include:

a. Any absence may affect the student's grade.
   b. Instructors need not give substitute assignments or examinations to students who miss class.
   c. In the event a student misses more than three weeks of classes during a semester for any reason, or the equivalent of three weeks in the summer session, an instructor may:

   - Give a grade of "F" for the course;
   - Ask the student to drop the course if the absences occur before the last date for dropping classes; and/or
   - If two of the three weeks of absences are caused by proven illness or other emergency, the student may be granted a grade of "I", for incomplete work, and allowed to finish the coursework by the end of the first month in the following semester.

A doctor's certification of a serious illness may be brought to the attention of the university physician, who will inform the Office of Student Affairs. The OSA staff will then contact the student's instructors to inform them of the expected length of class absence.

**Repeating Courses Under the Course Repeat Policy**
All students pursuing an undergraduate degree may repeat a course one time for the purpose of improving a grade. This policy is limited to a maximum of five courses during the entire undergraduate career of a student, and to courses taken at AUC within the previous two years. All course repeats must be done at AUC. The course being retaken must be the same course first taken, unless that course is no longer offered at AUC, or during the two-year period. In such a case, only the department that offered the same course may substitute another course with approval of the major department.

A student cannot have the privilege of repeating a course under this policy if the grade is received for reasons of academic dishonesty.

If a student repeats a course, the credit from the first attempt will not be applied to meeting the AUC graduation requirements. No student will be permitted to repeat more than five courses under this policy.

Students are advised that repeating courses under this policy does not result in the removal of the original record or grade from their transcripts. The second grade is recorded and computed in the grade point average and the earlier grade is disregarded in calculation of the grade point average. The course repeat form is available on the Registrar Web Page: http://student.aucegypt.edu The completed form must be filled online and submitted by no later than the eighth week of the term in which the course is being repeated.

Students who have already repeated 12 units prior to Spring 1995 have used up their course repeat option. Their transcripts will not be altered retroactively.

**Retaking Courses Outside of the Course Repeat Policy**

A student who has exhausted the "Course Repeat Policy" privileges or who has received a grade for reasons of academic dishonesty may still retake a course in which "D+", "D" or "F" was earned. No additional course credit will be applied to meeting AUC graduation requirements, but both grades for that course will be calculated in the Grade Point Average.

**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 100 will be placed on warning.
In the above cases, a letter is sent to the student, to his home address, 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 100 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. A letter is sent to the student, to his home address, 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 teams, clubs, plays, and university competitions. They may not be nominated for the Student Union.

**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 100 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 100 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 Office of the University Registrar or on the Registrar web page http://student.aucegypt.edu
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 University Registrar by the start of the final examination period of the semester immediately preceding the requested leave. The Office of the University 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. However, the deadlines for payment of the term bill and the penalties for late payment apply in such cases.

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 University 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 University Registrar - forms are available at the Office of the University Registrar and on the Registrar web page http://student.aucegypt.edu

Withdrawal grades will be recorded for each course, grades are either WP, meaning that the student was doing satisfactory work at the time of withdrawal, or WF, meaning that the student was not doing satisfactory work at the time of withdrawal. 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 ALU (Arabic Language Unit) 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.

Graduate Admissions

Click on any of the following links for information:

Graduate Admissions
Non-degree Admissions
Other Admissions

Graduate Admissions

A graduate applicant must complete an application for admission, including all requested documents/credentials such as transcripts, personal statement, experience, medical certificates, etc. A file for each applicant is prepared by the Office of Graduate Admission to ensure that the applicant meets the minimum university requirements as described by the university catalog. The file is then sent to the appropriate department for recommendation. After examining the file, the department forwards it with recommendation to the dean of the school, who will send the file with decision to the Office of the Dean of Graduate Studies for review. A letter is sent out to the applicant giving the type of admission, advising and registration dates, and payment of tuition. The files of those applicants who enroll at AUC are sent to the Office of the Registrar by the second week of the term for which they enroll.

The Enrollment Services together with the Dean of Graduate Studies prepares and prints the Graduate Application Form to be distributed through its outreach efforts.

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 the department.

Qualifications for graduate programs

Applicants for graduate study must have an acceptable Bachelor of Arts or Bachelor of Science degree with an academic record at a level sufficient to qualify for full or provisional admission as described under “Categories of Admission” below. Additional criteria such as the following may also be considered when evaluating a candidate for admission to the graduate program:

1. Performance as non-degree student showing evidence they are prepared for graduate level courses.
2. Test scores (GRE, GMAT, etc.).
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 TAFL applicants

Qualifications for Ph.D. Degree programs

Applicants must have an acceptable Bachelor of Science degree and Masters Degree with an academic record at a level sufficient to qualify for admissions. In addition to the criteria mentioned above for MA and MS degrees the following may also be considered when evaluating a candidate for admission to the PhD program:

1. Academic performance showing evidence they are prepared for PhD level courses.
2. GRE test scores that suggest potential.
3. Thesis Abstract
4. Research interest and objectives
5. Evidence of academic English proficiency prior to enrollment.

English Language Proficiency

An applicant must demonstrate knowledge of adequate English language for graduate studies. For full admission to the University, a graduate applicant must attain the required score on the Test of English as a Foreign Language (International TOEFL with TWE), (iBT) or the International English Language Testing System (Academic IELTS) examination. An applicant who does not attain the minimum test score required for full admissions, but who is otherwise qualified for admission is placed in an English Language Institute (ELI) course for further language study.

Exemptions from English Test

The University does not exempt applicants from the English test solely on the basis of citizenship or graduation from an international university in the region. An applicant may be exempted from these examinations if:

- He/ she is currently enrolled in an accredited university where the language of instruction is English.
- He/She hold degrees from an accredited English medium university
- Graduate applicants who have been recently accepted by, or were previously enrolled in an accredited English medium university for at least two semesters are exempted from presenting evidence of academic English proficiency.
- Graduate transfer students, enrolled for at least two semesters in an accredited English medium university, may also be exempted from submitting English results.
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 department of major may require applicants to sit for a graduate entrance examination, such as the Graduate Record Examination (GRE) for admission to the PhD program, Economics and Economics in International Development, and the Graduate Management Admission Test (GMAT) for the Master of Business Administration (MBA), whose results will be considered at the time of admission.

Medical Examination

Recent medical report stating that the student is physically and mentally capable of doing university work should be submitted before the semester begins. Non-Egyptian students will need to submit a recent HIV to expedite the issuing of student visa by the Egyptian authority.

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 will be announced by the Office of Student Financial Affairs every year.

Categories of Admission

There are two categories of graduate admission, depending upon the qualifications of the applicant.

1. Full Admission: Full admission may be granted to entering students who have met any of the following requirements:

   a. A B.A. or B.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.

   b. An overall average of gayyid giddan on a B.A. or B.S. degree from an Egyptian national university.

   c. A graduate degree with a minimum overall average of gayyid giddan or ‘B’ if the degree is closely related to the intended major.

      Additionally, the department of the major may require satisfactory performance on an examination. Full admission may also be attained by fulfilling the conditions specified under the provisional admission category below.

2. Provisional Admission: Provisional admission is granted to those entering students 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 a student may be required to take English courses or a number of specified prerequisite courses. Students are required to achieve a ‘B’ average in these prerequisite courses or their admission at AUC will be discontinued. Students may repeat one of the prerequisite courses to maintain a ‘B’ average, to fulfill admission conditions.
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’ average in the first three graduate courses or they will be dropped from the program.

*Graduate Diploma Programs*

The university offers several graduate diploma programs for which the Bachelor of Arts or Bachelor of Science degree and a high grade-point average are normally prerequisites, but for which individual maturity, in-service training, or experience may provide an even more valuable background.

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 MA or MS degree-seeking students.

*Non-degree Admissions*

An applicant not seeking an AUC degree but who wishes to take AUC courses for academic credit may be admitted as a non-degree student if he/she meets the minimum criteria for graduate admission. A number of places are set aside each year for such students, most of whom take a year away from their studies at another institution for study and living experience in Egypt. Since AUC is a U.S. accredited institution following an American system, students from U.S. universities are usually able to transfer their 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 students and should enclose transcripts of their undergraduate work and fulfill or meet the English requirements or provide evidence of academic proficiency prior to enrollment in any course.

Upon request, the university may approve a change of status from non-degree to degree student. If a graduate non-degree student should become a degree candidate, the department of major will consider accepting credit for courses taken under non-degree status. All academic regulations applicable to degree students will apply retroactively with such change of status.

*Other Admissions*

*Transfer Credit*

Upon the recommendation of the student’s department to the school dean in consultation with the Office of the Dean of Graduate Studies and the Registrar, a graduate student may normally receive up to six credits for graduate level work completed at a different university. The course work may not have been used previously to earn another degree. Any request for the acceptance of transfer credit towards an AUC degree shall be carefully considered by the department concerned before submitting a recommendation to the school dean for approval. Two major considerations shall be: relevance to the student’s program of study, and time lapse since taking the courses for which transfer credit is requested. Approval of the School Dean must be received for more than six hours of credit.

*Summer Admissions*

The University does not usually admit degree students during the summer semester, but exceptional cases may be brought to the attention of the Office of the Dean of Graduate Studies for consideration.

*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. 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 offered on a space-available basis and is not guaranteed.

Disqualified or suspended students must petition for readmission in addition to the required readmission application and must meet all the admission requirements prevailing at the time of readmission. Students who are suspended because they have not passed Intensive English (ELIN 120 or 121) in two semesters and a summer (or three semesters if a summer course is not offered) are required to submit a recent International TOEFL with TWE, (iBT) or Academic IELTS and they must demonstrate a level of proficiency for direct admission to Academic English for Graduates (English modules) or higher. Students who are disqualified because they have failed any Academic English module (ENGL 123, 124 or 125) three times are required to demonstrate a level of English proficiency for direct admission without any English requirement.

<table>
<thead>
<tr>
<th>English Level at Time of Withdrawal</th>
<th>Lapse of Time</th>
<th>TOEFL /Academic IELTS Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completed required</td>
<td>Less than 24 months</td>
<td>No</td>
</tr>
<tr>
<td>Academic English modules successfully or satisfied English requirement</td>
<td>More than 24 months</td>
<td>Yes</td>
</tr>
<tr>
<td>Enrolled in Intensive English or Academic English</td>
<td>Less than 6 months</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Between 6-12 months</td>
<td>Optional</td>
</tr>
<tr>
<td>Enrolled in Intensive English or Academic English</td>
<td>More than 12 months</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**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 to the Office of the University Registrar by the deadlines indicated on the inside front cover of this catalog. 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.
General Academic Requirements & Regulations

Click on any of the following links for information:

Graduate Academic Requirements
Graduate Academic Regulations
Non-degree 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 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 and Privacy Rights of Student Records

Please see "Undergraduate Academic Requirements and Regulations" section.

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 entering the department 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 adviser. When a thesis topic and adviser are selected and approved, the thesis adviser then also becomes the academic adviser.

Residence

For the master of arts or master of science degree, the minimum requirement is 24 credit hours in residence and an acceptable thesis - normally two years of full-time academic work. Additional courses are assigned in lieu of the thesis if it is optional. The normal course load is 9 hours per semester. Upon the recommendation of the department concerned, students may register for up to 15 hours per semester, at an extra tuition charge. 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, within five years of the date of first registration as a provisional or fully admitted
graduate student. Students enrolling in the M.B.A. program must complete all requirements within six years of their
provisional or full admission to the program.

The residence requirement of five or six years mentioned above does not include the period of enrollment in the
English Language Institute.

Comprehensive Examination

A student may sit for a required comprehensive examination after completing 24 credit hours or while taking the final
six credit hours. Comprehensive examinations are offered usually in mid-December and mid-April. Students not
registered for courses or thesis 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.

Thesis Requirements

Most master's degree programs require a thesis. Exceptions to this requirement are noted in the descriptions of the
individual programs.

The student is responsible for selecting and developing a thesis topic which has departmental approval and for which a
qualified adviser is available. In consultation with the adviser, the student must submit a thesis proposal (normally 1500
words in length) for consideration by the department. As soon as the proposal is approved, the student may proceed
with thesis research and writing. Copies of the proposal approval document must be kept in the department of major
and forwarded to the Office of the University Registrar.

At the department's discretion, the student may register for 599 Research Guidance and Thesis, and pay tuition
equivalent to 3 credit hours each semester starting with the semester in which he/she plans to submit the thesis
proposal, until completion of the thesis. A student who does not complete the thesis requirement within the period of
two semesters 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 and typed double-spaced. It will be judged on content, organization,
documentation, and presentation. Guidelines on thesis writing and format are available on the graduate studies website.

Submission of Thesis

If the degree is expected at the end of the first semester, an acceptable (adviser-approved) thesis must be presented by
November 15. If graduation is expected at the end of the second semester, the deadline for submitting the thesis is April
15. 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
department 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 committee members may consider
the revised thesis individually or schedule another meeting with the candidate.

The top copy of the accepted and signed thesis is submitted to the Dean's office at least two weeks before
commencement. If the thesis is submitted late, the degree will not be conferred that semester. In addition to submitting
a hard copy of the thesis, students are asked to submit an electronic version of the thesis directly to the AUC Digital
Archive and Research Repository (AUC DAR) dar@aucegypt.edu
All research involving living human beings requires in-advance approval from AUC's Institutional Review Board (IRB). Each student's thesis adviser is responsible for ensuring that the appropriate form is filled in accurately. Until the IRB form is completed and approved, the thesis cannot be posted on DAR, and the student is not eligible to graduate. For more information, please refer to the IRB link: www.aucegypt.edu/research/ReviewBoard/Pages/Home.aspx

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 University Registrar or on the Registrar's web site. Planning forms are available on the Registrar's web page http://student.aucegypt.edu. Those seeking to enroll after the scheduled registration period cannot be guaranteed acceptance. If permitted to register, they will be charged a late registration fee. For foreign students, registration must be completed before a student visa can be issued.

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 University Registrar. Change of courses can only take place during the first two weeks of a regular semester and during the first week of a summer session.

- 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 University 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). The current system of "WP" and "WF" is eliminated.
- 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 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 and 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 at least six hours outside of class.

Academic Load

The normal program of study for a full-time graduate student is nine hours per semester; however, upon the recommendation of the department concerned, a student may register for up to fifteen hours per semester. "Overload" forms are available on the Registrar web page http://student.aucegypt.edu. A graduate student taking a load of less than nine hours is considered a part-time student. A foreign student carrying a full academic load is entitled to university certification for obtaining a student visa. Foreign graduate 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.

Grades

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 University Registrar. The grade may not be changed or removed from the record.

The following grading system is used at the American University in Cairo:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Points</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4.0</td>
<td>Excellent</td>
</tr>
<tr>
<td>A-</td>
<td>3.7</td>
<td></td>
</tr>
<tr>
<td>B+</td>
<td>3.3</td>
<td>Very good</td>
</tr>
<tr>
<td>B</td>
<td>3.0</td>
<td>Good</td>
</tr>
<tr>
<td>B-</td>
<td>2.7</td>
<td></td>
</tr>
<tr>
<td>C+</td>
<td>2.3</td>
<td>Conditionally passing</td>
</tr>
<tr>
<td>C</td>
<td>2.0</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>0.0</td>
<td>Failing</td>
</tr>
</tbody>
</table>

Grades not included in the Grade Point Average:

- I: Incomplete
- S: Satisfactory
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", "P", "U", and "W" 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 (diploma and MA/MS or Two MA's/MS's) in different majors, either simultaneously or consecutively. In either case, the student must apply to and be accepted by each program involved. "Dual Graduate Degree" form is available on the Registrar's web page http://student.aucegypt.edu. The student may have up to 12 credit hours accepted for credit in both degree programs contingent upon departments' and deans' approval. A maximum of 9 credit hours may be accepted in case of dual diploma degrees. In the case of simultaneous programs, the student may request prior approval of the courses to be counted towards both degrees from the departments involved. In the case of sequential degrees, a period of up to five years is allowed between the dates of finishing one degree and starting the second. Acceptance of a course towards the new degree shall be contingent upon departmental and dean's approval.

Incomplete Work

Under some circumstances graduate students who are unable to complete a course may be permitted to continue and complete it in the following semester. "Incomplete" forms are available on the Registrar web page http://student.aucegypt.edu. In the meantime a grade of "I", meaning that the work is incomplete, is assigned in the course.

Students, whether registered or not, are responsible for making arrangements with the professor and the department of the major to complete the course in the following semester, otherwise, a tentative grade estimated on the basis of work already completed will be recorded. Failure to complete the course within the following semester will result in the grade being recorded as "F" unless a tentative grade has been previously reported. Meanwhile, students are not allowed to register for the same course.

The incomplete grade 'I' will appear on the student's record along with the final grade received upon completion of outstanding work.

Any instructor 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.
The instructor will also inform the University Registrar, on the same form, of the grade the student will receive if the outstanding work is not completed on time. This grade is to be submitted to the registrar at the time of submitting the incomplete grade sheet.

Students who have an incomplete grade are not allowed to carry more than twelve credit hours a semester including the incomplete course or courses.

Students on warning who receive an incomplete are not permitted to register the following semester unless they have completed the coursework of the previous semester.

**Probation, Dismissal and Course Repeat**

If the student's grade point average 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.

Students who receive an "F" in any course will normally not be allowed to continue in the university (please refer to the course repeat policy in the following paragraph); a student may also be dismissed from the university if he/she does not complete all requirements within the period specified under 'Residence'.

With the recommendation of the department and the approval of the school dean, a graduate student may be allowed to repeat one course, except if the grade is received for academic dishonesty. This privilege may be exercised only once. With the recommendation of the department 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 in the transcript but only the new grade will be used in calculating the GPA. "Repeat Policy" forms are available on the Registrar's web page http://student.aucegypt.edu

**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:

- The leave must have a definite purpose relevant to the student's overall educational objectives and goals.
- The request must be for a specific period of time which should not exceed 2 regular semesters for students pursuing a graduate program.
- 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 Office of the University Registrar or the Registrar's web page http://student.aucegypt.edu
2. The student must obtain the approval of his or her faculty advisor, the department chair of his or her major.
3. The student should be in good academic standing at the time of the leave request. The leave application must be submitted to the Office of the University Registrar by the start of the final examination period of the semester immediately preceding the requested leave. The Office of the University 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. However, the deadlines for payment of the term bill and the penalties for late payment apply in such cases.

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 to the approval of the department of major.

7. A Planned Educational Leave of Absence is counted as part of the time limitations. 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.

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 and the department of major.

**Withdrawal from the University**

Students who drop all their courses during a semester are requested to pass by the Office of the University 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 University Registrar - forms are available at the Office of the University Registrar and on the Registrar web page http://student.aucegypt.edu

Withdrawal grades will be recorded for each course, grades are either WP, meaning that the student was doing satisfactory work at the time of withdrawal, or WF, meaning that the student was not doing satisfactory work at the time of withdrawal. 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 this 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 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 sections pertaining to registration, change of courses, academic load, grades, warning, incomplete work, class attendance, and transcripts in the graduate section, as appropriate.
Programs

Bachelor of Accounting

Accounting (B.A.C.)

The world economy has entered an era of global interaction on a scale rarely experienced before. Financial markets in various parts of the world operate twenty-four hours a day as capital seeks involvement in this global economy. Countries that are still mostly agrarian are forming active stock markets. Trade agreements in the European community and North America, the breakup of the former Soviet Union, the emergence of China as an economic power and the commercial development of many countries in Southeast Asia and South America are just a few examples of the forces at work.

After a long period of indifference, there is currently a heightened interest in international accounting and auditing standards. Within developing countries, business enterprises must develop internal management controls that allow them to compete in a world market. The rapid, and sometimes startling, social, political, technological, and economic changes that are taking place in the world economy have led to increasing recognition of the key role that accounting and accountants in all countries play in the process of economic development. This recognition, in turn, emphasizes the need for quality accounting education which this major in accounting provides.

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

1. Students who have been admitted to the Bachelor of Accounting program as incoming freshmen must complete the three courses listed below before taking any additional courses in the major.
2. Students who seek to be admitted to the Bachelor of Accounting program through the declaration process should apply in their third semester. Students seeking to declare the BAC program must have completed not less than 27 credit hours of study including the three courses listed below. Based on the available space a limited number of students who have successfully completed these courses and who meet the GPA requirements as determined by the department will be accepted in the major.
   1. ACCT 201 Financial Accounting, 3 cr.
   2. ECON 201 Introduction to Macroeconomics, 3 cr.
   OR
       ECON 202 Introduction to Microeconomics, 3 cr.
   3. MACT 112 Statistical Reasoning, 3 cr.

Students who seek the Bachelor of Accounting degree (BAA) are not permitted to have a major or minor in Business Administration. Students must complete a minimum of 127 credit hours for the Bachelor of Accounting degree.

Core Curriculum (34-46 credits)

Collateral Requirements

All students seeking a Bachelor of Accounting degree are required to complete the following collateral requirements (15 credits):

- ECON 201 - Introduction to Macroeconomics (3 cr.)
- ECON 202 - Introduction to Microeconomics (3 cr.)
- ECON 216 - Mathematics for Economists I (3 cr.)
- ECON 303 - Money and Banking (3 cr.)
- MACT 112 - Statistical Reasoning (3 cr.)
Management Requirements (9 credits)

- MGMT 300 - Business Environment and Ethics (3 cr.)
- MGMT 307 - Management Fundamentals (3 cr.)
- MGMT 311 - Business Law (Commercial & Fiscal) (3 cr.)

Finance Requirements (12 credits)

- FINC 303 - Business Finance I (3 cr.)
- FINC 404 - Investment Analysis (3 cr.)
- FINC 405 - Applied Banking (3 cr.)
- FINC 414 - Corporate Finance (3 cr.)

Management of Information Systems Requirements (9 credits)

- MOIS 305 - Introduction to Information Systems/Technology (3 cr.)
- MOIS 406 - Management Information Systems and Database Management (3 cr.)
- MOIS 444 - Accounting Information Systems (3 cr.)

Accounting Requirements (33 credits)

- ACCT 201 - Financial Accounting (3 cr.)
- ACCT 202 - Managerial Accounting (3 cr.)
- ACCT 301 - Intermediate Accounting I (3 cr.)
- ACCT 302 - Intermediate Accounting II (3 cr.)
- ACCT 303 - Advanced Accounting (3 cr.)
- ACCT 304 - Cost Accounting (3 cr.)
- ACCT 305 - Auditing (3 cr.)
- ACCT 306 - Principles of Taxation (3 cr.)
- ACCT 401 - Contemporary Issues in Auditing (3 cr.)
- ACCT 402 - Special Topics in Tax Accounting (3 cr.)
- ACCT 403 - Contemporary Issues in Accounting (3 cr.)

Electives (3-15 credits)

Bachelor of Arts

Anthropology, with a specialization in Community Development (B.A.)

Anthropology is the comparative study of peoples, societies, and cultures in all their variations across time and space. Anthropology spans the social and natural sciences as well as the humanities, offering interpretations of all aspects of human life. It consists of four sub-disciplines – socio-cultural, linguistics, archaeology and physical Anthropology. Anthropology at AUC focuses on cultural and social anthropology. The Unit is committed to basic and applied research as a crucial underpinning for offering critical, reflexive and empirically informed interpretations of
global and historical cultural diversity. Our emphasis on research is complemented by a critical engagement with classic and more recent theoretical orientations in the field of anthropology. The research and teaching interests of the Department range from the anthropology of development, economic anthropology, gender and feminism, kinship studies, the anthropology of religion and symbolic systems, psychological anthropology, medical anthropology, to colonialism, power, identity and globalization.

Bachelor of Arts

The undergraduate program aims to present the main themes and trends in cultural and social anthropological thought and practice and thereby to nurture critical, intercultural, and reflexive perspectives as part of liberal education. In doing so, it seeks to foster understanding of the transformation of society and culture in Egypt and the region. The program also engages with other parts of the world, such as Africa, South Asia and Latin America. Our aim is to prepare students for graduate studies and for living and working in an increasingly complex and changing world. Upon graduation our students are well-positioned to pursue careers in teaching, research and applied anthropology, such as in international development agencies, non-governmental organizations, private sector, social service, media, and heritage preservation.

A student who wishes to declare a major in anthropology should be registered in or have taken ANTH 202. Every student must obtain a “C” or higher in ANTH 202 in order to continue as a major in anthropology.

Upper-division (300-400 level) courses are normally taken during the junior and senior years. Students must take ANTH 309 and ANTH 311 during the junior year. Students must take ANTH 495 in their last full academic year. Most of the other courses are offered in alternate years and so may be taken in any order. Courses at the 500-level are also open to selected advanced undergraduates.

A total of 120 credits is required for the bachelor’s degree in anthropology:

Core Curriculum (34-46 credits)

Students with Thanawiya‘Amma art or equivalent background should take BIOL 100 (Introductory Biology); those with Thanawiya ‘Amma science or equivalent must take BIOL 104 (Unity of Life).

Concentration Requirements (42 credits)

- ANTH 202 - Cultural Anthropology (3 cr.)
- ANTH 309 - History of Social Theory (3 cr.)
  See footnote one.
- ANTH 311 - Contemporary Anthropological Theory (3 cr.)
  See footnote one.
- ANTH 380 - Fieldwork Methods (3 cr.)
- ANTH 495 - Senior Seminar (3 cr.)
  See footnote one.

One of the following people-and-culture courses:

- ANTH 302 - Kin and Family in a Global World (3 cr.)
- ANTH 312 - Peoples and Cultures of the Middle East and North Africa (3 cr.)
- ANTH 360 - Gender, Power and Social Change (3 cr.)
- ANTH 382 - Peoples and Cultures of Sub-Saharan Africa (3 cr.)
- ANTH 384 - Peoples and Cultures of Latin America (3 cr.)
- ANTH 386 - Peoples and Cultures of Asia (3 cr.)
- ANTH 390 - Selected People and Culture Areas (3 cr.)

Additional Requirements

- **Eight** additional anthropology courses, of which three must be at the 400 level.

Collateral Requirements (21 credits)

- Two 300 or 400 level courses in the social sciences
- A minor (five courses) in any field to be selected in consultation with the advisor.

Electives (11-23 credits)

Total 120 Credits

Notes:

Footnote one: Cross listed with Sociology

Interdisciplinary Specialization in Community Development

The teaching and application of the principles of community development and community organizing prepares students to work in development agencies. 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.

Students majoring in anthropology, psychology or sociology can choose this specialization in place of the collateral requirements required for their respective majors.

Academic Advising is provided through the Anthropology, Sociology and Psychology units of the Department of Sociology, Anthropology, Psychology and Egyptology on behalf of an interdisciplinary group of faculty.

Declaration Requirements:

1. Must be an anthropology, psychology or sociology major
2. Must have a minimum GPA of 2.5

Course Requirements:

24 credits, including the following:

Required Courses
Catalog 2012-2013 Extract

- SOC 240 - Introduction to Community Development (3 cr.)
  ANTH/PSYC 240
- SOC 340 - Participatory Action Research in Community Settings (3 cr.)
  ANTH/PSYC 340
- SOC 440-441 - Practicum in Community Development (6 cr.)
  ANTH/PSYC 440-441 Year long, two semester sequence

Electives

(At least two of the following, one has to be at the 300 level or above):

- ANTH 303 - Social Movements (3 cr.)
  /SOC 303
- ANTH 370 - Environmental Issues in Egypt (3 cr.)
  /SOC 370
- ANTH 372 - Applied Anthropology (3 cr.)
- ANTH 380 - Fieldwork Methods (3 cr.)
- ANTH 450 - Third World Development (3 cr.)
  /SOC 450
- ANTH 460 - Development Studies Seminar (3 cr.)
  /SOC 460
- PSYC 301 - Social Psychology (3 cr.)
- PSYC 330 - Community Psychology (3 cr.)
- PSYC 430 - Advanced community psychology: Applied research and service (3 cr.)
- SOC 203 - Social Problems of the Middle East (3 cr.)
- SOC 304 - Development Agencies (3 cr.)
- SOC 307 - Social Class and Inequality (3 cr.)
- SOC 435 - Gender and Power in Development (3 cr.)

Arabic Studies, with specializations in Arabic literature, Middle Eastern History and Islamic Art and Architecture (B.A.)

The department of Arab and Islamic Civilizations provides a multi-disciplinary framework for the study of the history and culture of the Middle East since the rise of Islam. It seeks to explain the thought, movements, processes, institutions and identities of Arab-Islamic civilization. These include but are not limited to aesthetic and intellectual production, political and religious thought, cross-cultural interaction, commerce and economic relations, government, and social, political and religious loyalties. The study and appreciation of these fields forms an important part of the university’s mission to give students greater awareness and appreciation of the heritage of the Middle East.

Bachelor of Arts

The objective of the Bachelor of Arts is to develop a broad awareness of Arab-Islamic civilization and to develop in students the ability to examine critically the different aesthetic, intellectual and cultural components of this civilization. Each student is required to fulfill Arabic language requirements and take a common core of courses from Arabic Literature, Islamic Studies, Middle Eastern History and Islamic Art and Architecture. Students should find
opportunities in any line of work where knowledge of Middle Eastern culture or analytical and communication skills are important.

A total of 120 credits is required for the degree in Arabic Studies.

**Language Requirements**

Students must demonstrate their proficiency in Arabic at the advanced level, either by completing ALNG 312 or its equivalent, or by taking a proficiency test, or by holding the Thanawiya ‘Amma. Students must reach this level of proficiency before their senior year. The department may give permission for deferral until the senior year in exceptional cases. However, students should note that advanced-level proficiency is a prerequisite for enrollment in certain Arabic literature courses, as described below. Students who are required to take Arabic language proficiency courses may use a maximum of 15 hours of their elective credits to take language courses in Intermediate or Advanced Arabic. Elementary Arabic courses may not be taken for credit.

Students should have the Thanawiya ‘Amma certificate, evidence of advanced-level proficiency or consent of instructor before enrolling in any Arabic literature course which is taught in Arabic, or in ARIC 317 and 417, for which the readings are in Arabic.

**Core Curriculum (34-46 credits)**

ARIC majors must fulfill their Core Curriculum Arab History and Arabic Literature requirements by taking any 300-level Arabic literature course and any Middle Eastern history course from the core curriculum list other than ARIC 343. They should take the introductory 200-level courses required by their major before fulfilling their Core Curriculum requirements.

**Concentration requirements (48 credits)**

All students must take 24 credit hours as follows:

**Arabic literature (6 credits)**

**EITHER**

- ARIC 201 - Introduction to Classical Arabic Literature (3 cr.)
- ARIC 202 - Introduction to Modern Arabic Literature (3 cr.)

**OR**

- ARIC 203 - Classical Arabic Literature in Translation (3 cr.)
- ARIC 204 - Modern Arabic Literature in Translation (3 cr.)

**Middle Eastern history (6 credits)**

- ARIC 246 - Survey of Arab History (3 cr.)
- ARIC 343 - Birth of Muslim Community and Rise of the Arab Caliphates (3 cr.)

**Islamic Studies (6 credits)**
• ARIC 335 - An Introduction to Islam (3 cr.)
• ARIC 435 - Studies in the Qur'an (3 cr.)

Islamic Art and Architecture (6 credits)

• ARIC 206 - Art and Architecture of the City of Cairo (3 cr.)
• ARIC 270-271 - Introduction to Islamic Art and Architecture (3 cr. per semester)

Additional Requirements

Each student must take another 24 credits of ARIC courses, chosen with the help of the advisor. These must include two additional 400-level courses.

Specializations

Students may, if they wish, take a specialization in Middle Eastern History or in Arabic Literature.

Specialization in Middle Eastern History

Students who wish to specialize in this field must take a minimum of 18 of these 24 credits in Middle Eastern history, medieval and modern. These must include two 400-level courses, and at least one course on modern Middle Eastern history. Students may choose from among the following courses offered by the Department of Arab and Islamic Civilizations (ARIC) and by the Department of History (HIST):

• ARIC 320 - Introduction to Sufism (3 cr.)
• ARIC 321 - Social and Cultural History of the Middle East, 600-1800 A.D. (3 cr.)
• ARIC 322 - Land, Trade and Power: a History of Economic Relations in the Middle East, 600-1800 A.D. (3 cr.)
• ARIC 323 - Marriage and the Family in the Medieval and Early Modern Middle East (3 cr.)
• ARIC 324 - Non-Muslim Communities in the Muslim World (3 cr.)
• ARIC 336 - Studies in Ibn Khaldun (3 cr.)
• ARIC 344 - Caliphs and Sultans in the Age of Crusades and Mongols (3 cr.)
• ARIC 345 - Gunpowder Empires: Ottomans, Safavids and Mughols (3 cr.)
• ARIC 353 - Muslim Political Thought (3 cr.)
• ARIC 404 - Sira, Hadith, and Tafsir (3 cr.)
• ARIC 439 - Islamic Law (3 cr.)
• ARIC 440 - Arabic Historical Literature (3 cr.)
• ARIC 451 - Islamic Institutions (3 cr.)
• ARIC 460 - Selected Topics in Middle Eastern History, 600-1800 AD (3 cr.)
• ARIC 463 - Selected Topics in the History of Islamic Thought and Institutions (3 cr.)
• HIST 355 - State and Society in the Middle East, 1699-1914 (3 cr.)
• HIST 356 - State and Society in the Middle East, 1906-present (3 cr.)
• HIST 454 - Modern Movements in Islam (3 cr.)
• HIST 462 - Selected Topics in the History of the Modern Middle East (3 cr.)

Specialization in Arabic Literature
Students who wish to specialize in this field must take a minimum of 18 of these 24 credits in Arabic literature, chosen from the list below. It is expected that these courses will be taken in Arabic. However, a student may take up to two Arabic literature courses taught in English, on condition that he/she reads the assigned texts in Arabic. In such cases, the course will be registered for that student under the rubric ARIC 317 or 417, Special Studies in Arabic Texts, as appropriate.

- ARIC 305 - Arabic Literature and Gender (3 cr.)
- ARIC 306 - Arabic Literature and Film (3 cr.)
- ARIC 307 - The Writer and the State (3 cr.)
- ARIC 308 - Colloquial and Folk Literature (3 cr.)
- ARIC 309 - Selected Themes and Topics in Arabic Literature (3 cr.)
- ARIC 310 - Selected Themes and Topics in Arabic Literature in Translation (3 cr.)
- ARIC 314 - The Arabic Novel (3 cr.)
- ARIC 315 - Arabic Drama (3 cr.)
- ARIC 316 - The Arabic Short Story (3 cr.)
- ARIC 401 - Senior Seminar in Arabic Texts (3 cr.)
- ARIC 402 - Senior Seminar in Arabic Literature in Translation (3 cr.)
- ARIC 403 - Arabic Literary Criticism (3 cr.)

**Electives (26 - 38 credits)**

Depending on the number of credits needed to complete the 20 credits, the student is strongly advised to use some of their electives to take a suitable minor or minors. As stated above, he/she may use up to 15 credit hours to satisfy Arabic language requirements for the ARIC degree.

**Specialization in Islamic Art and Architecture**

In addition to the Islamic Art and Architecture courses (ARIC 206 and ARIC 270) stipulated in the Arabic Studies core requirements, the students must take an additional 8 courses (24 credit hours), of which two must be of the 400-level, from among the following:

- ARIC 270-271 - Introduction to Islamic Art and Architecture (3 cr. per semester)

**7 courses (21 credit hours) from among the following courses:**

- ARIC 368 - The Art of the Book in the Islamic World (3 cr.)
- ARIC 369 - Islamic Pottery (3 cr.)
- ARIC 370 - Pre-Islamic Influences on Islamic Art and Architecture (3 cr.)
- ARIC 371-372 - Islamic Architecture in Egypt and Syria (3 cr. per semester)
- ARIC 464 - Islamic Art and Architecture in India and Pakistan (3 cr.)
- ARIC 465-466 - Islamic Architecture in Turkey, Persia and Central Asia (3 cr.)
- ARIC 467 - Islamic Architecture in Spain and North Africa (3 cr.)
- ARTV 314 - Modern and Contemporary Architecture (3 cr.)
- EGPY 361 - Art and Architecture of Ancient Egypt I (3 cr.)
- EGPY 362 - Art and Architecture of Ancient Egypt II (3 cr.)

**Notes:**
In addition to the core and specialization requirements an additional 26-38 credit hours can be devoted to electives.

**Communication and Media Arts (B.A.)**

Today’s communication and media professionals need to have a broad background in both traditional and new media and to understand the impact of the convergence of these media on society. By combining media practice with communication theory, this degree covers a broad spectrum of critical perspectives on the media and introduces a range of contemporary media practices. Consistent with the mission of the School of Global Affairs and Public Policy, our program/s encompass a number of interdisciplinary courses.

The goal of this major is to produce well-rounded students who are knowledgeable about contemporary media theories and research issues, have developed excellent writing skills, have gained production and presentation skills, and are critical thinkers and writers.

Before declaring a CMA major, students must complete 24 credits of university coursework, complete RHET 201 with a grade B or better, and pass the basic writing skills test.

CMA majors are not permitted to have a major in MMJ or IMC. Students must complete a minimum of 120 credits for the Bachelor of Arts degree in CMA, of which no more than 40 credits can be in CMA and another 65 of their total credits must be Humanities and Social Sciences.

**Core Curriculum (39 credits)**

**JRMC Core (12 credits)**

- JRMC 200 - Introduction to Mass Communication (3 cr.)
- JRMC 201 - Mass Media Writing (3 cr.)
- JRMC 202 - Multimedia Writing (3 cr.)
- JRMC 203 - Mass Media Ethics and Responsibility (3 cr.)

**Communication and Media Arts Major (21 credits)**

- JRMC 250 - Global Media Systems (3 cr.)
- JRMC 270 - Online Communication (3 cr.)
- JRMC 320 - Mass Communication Research (3 cr.)
- JRMC 406 - Internship (3 cr.)
- JRMC 420 - Media Management (3 cr.)
- JRMC 444 - Media Law and Policy (3 cr.)
- JRMC 482 - Media Convergence Capstone (3 cr.)

**Choose two of the following courses : (6 credits)**

- JRMC 230 - Introduction to Photography (3 cr.)
- JRMC 305 - Introduction to Visual Communication (3 cr.)
- JRMC 330 - Advanced Photography (3 cr.)
- JRMC 339 - Studio Production: AUC TV (3 cr.)
- JRMC 403 - Feature and Magazine Writing (3 cr.)
- JRMC 405 - Advanced Visual Communication (3 cr.)
- JRMC 415 - Public Relations Theory and Techniques (3 cr.)
- JRMC 460 - Audio Production (3 cr.)
- JRMC 471 - Online Journalism (3 cr.)

General Electives/Minor

Depending on the number of credit hours needed to complete 120 credits required for bachelor’s degree from AUC, CMA majors are encouraged to select elective courses leading to a minor in an area that will complement their major, including Arabic Studies, History, Middle East Studies, Performing Arts (music, film and theater), Political Science, Sociology and others.

Economics (B.A.)

Bachelor of Arts

The content of the curriculum for the B.A. degree in Economics offers a comprehensive coverage of subjects. The program is designed to prepare students as i) citizens with future influence by virtue of a university degree; ii) future holders of jobs which require training in economics; and iii) future postgraduate students of economics. For the first group, the curriculum offers training in rational thought and the connections between theory and main features of policy. For the second group, the curriculum offers the standard tools of economic analysis and an appreciation of the interdependence of world economies. For the third group, the curriculum, by virtue of its content of research methods and statistics, and econometrics offers entry into M.A. and Ph.D. programs. A holder of the B.A. in Economics from AUC can participate in advanced training on equal basis with undergraduates from major American and British Universities.

A student who intends to major in Economics must satisfy the following requirements:

- Must have completed a minimum of 27 credit hours of study including ECON 201, ECON 202 and ECON 216.
- Earn an average of “B” or higher in Econ 201 and Econ 202 with a minimum “B-” in each course
- Earn a minimum of “B” in ECON 216*
- Meet the GPA requirements as determined by the department each semester

*Alternatively, earn an average of “B” or higher in MACT 131 and MACT 132 with a minimum “B-” in each course.

Notwithstanding these requirements, a subcommittee of the department might in exceptional cases and on a case-by-case basis decide on admission of students after examining their overall record.

A total of 120 credits is required for the bachelor’s degree in economics:

Core Curriculum (34-46 credits)

Concentration Requirements (54 credits)

- ECON 201 - Introduction to Macroeconomics (3 cr.)
- ECON 202 - Introduction to Microeconomics (3 cr.)
• ECON 216 - Mathematics for Economists I (3 cr.)
• ECON 218 - Statistics for Economists (3 cr.)
• ECON 301 - Intermediate Macroeconomic Theory (3 cr.)
• ECON 302 - Intermediate Microeconomic Theory (3 cr.)
• ECON 316 - Mathematics for Economists II (3 cr.)
• ECON 318 - Introduction to Econometrics (3 cr.)
• ECON 403 - International Trade (3 cr.)
• MACT 112 - Statistical Reasoning (3 cr.)

Plus at least two of the following:

• ECON 312 - Economic Development (3 cr.)
• ECON 405 - History of Economic Thought (3 cr.)
• ECON 414 - Economics of Egypt (3 cr.)

Plus Six other courses in economics including POLS 351

Notes:

Students who plan to pursue graduate studies in economics are strongly advised to take ECON 416 and ECON 418, since these are prerequisites for the master's program.

Collateral Requirements (6 credits)

• ACCT 201 - Financial Accounting (3 cr.)
• FINC 303 - Business Finance I (3 cr.)

Electives (14-26 credits)

Depending on the number of credit hours needed to complete the 120 stated above.

Egyptology (B.A.)

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.

Bachelor of Arts in Egyptology

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.

A student who wishes to declare a major in Egyptology should be registered in or have taken an Egyptology course, and have an overall GPA of 2.7 to declare the major, and maintain a 2.7 in order to remain in the major.

A total of 120 credits is required for the bachelor’s degree in Egyptology:

Core Curriculum (34 - 46 credits)

Concentration Requirements (48 credits)

All Twelve of the following (36 credits):

- EGPT 343 - History of Ancient Egypt I: Pre-Dynastic Through Middle Kingdom Egypt (3 cr.)
- EGPT 344 - History of Ancient Egypt II: Middle Kingdom through Ptolemaic Egypt (3 cr.)
- EGPT 250 - Ancient Egyptian Literature in Translation (3 cr.)
- EGPT 253 - Hieroglyphics I (3 cr.)
- EGPT 254 - Hieroglyphics II (3 cr.)
- EGPT 361 - Art and Architecture of Ancient Egypt I (3 cr.)
- EGPT 362 - Art and Architecture of Ancient Egypt II (3 cr.)
- EGPT 304 - Culture and Society of Ancient Egypt (3 cr.)
- EGPT 346 - Societies and Culture of the Ancient Near East (3 cr.)
- EGPT 353 - Hieroglyphics III (3 cr.)
- EGPT 402 - Hieroglyphics IV (3 cr.)
- EGPT 440 - Ancient Egyptian Religion and Ethics (3 cr.)

From among the following (12 credits):

- EGPT 202 - Ancient Egypt (3 cr.)
- EGPT 204 - Archaeology: Methods and Theories (3 cr.)
- EGPT 301 - Temples, Tombs and Hieroglyphs (3 cr.)
- EGPT 341 - Egypt in the Late Period (3 cr.)
- EGPT 342 - History of Egypt in the Graeco-Roman Era (3 cr.)
- EGPT 348 - Societies and Cultures of Ancient Nubia (3 cr.)
- EGPT 400 - Introduction to Coptic (3 cr.)
- EGPT 401 - Introduction to Hieratic (3 cr.)
- EGPT 403 - Independent Study in Egyptology (1-3 cr.)
- EGPT 445 - Selected Topics in Coptic Studies (3 cr.)
- EGPT 459 - Selected Topics in Cultural Resource Management and Museology (3 cr.)
- EGPT 491 - Field Work in Egyptological Method and Theory (3 cr.)
- EGPT 499 - Selected Topics in Egyptology (3 cr.)
Notes:

Students intending to pursue graduate studies in Egyptology at an Egyptian national university must take EGPT 401 (Introduction to Hieratic) and 400 (Introduction to Coptic).

Collateral Requirements (21 credits)

18 hours in related disciplines, such as anthropology, history/art, Islamic art and archaeology, linguistics, or science, possibly to constitute a minor.

General Electives/Minor (5 - 17 credits)**

**Depending on the number of credit hours needed to complete the 120 stated above.

English and Comparative Literature (B.A.)

Bachelor of Arts

The program in English and Comparative Literature provides the undergraduate student with an understanding of the role which literature plays in presenting men and women with images of themselves, their society, and their culture and introduces them to the different questions and answers which literature has given to the central problems of human experience.

To major in English and Comparative Literature students must have taken at least one ECLT course with not less than a C grade and be registering for the required program of the major.

A total of 120 credits is required for the bachelor’s degree in English and comparative literature:

Core Curriculum (34-46 credits)

Concentration Requirements (42 credits)

- ECLT 200 - Introduction to Literature (3 cr.)
- OR
- ECLT 202 - Global Literature in English (3 cr.)

- ECLT 201 - Survey of British Literature (3 cr.)

- ECLT 301 - Medieval Literature (3 cr.)
- Or
- ECLT 409 - Greek Classics in Translation (3 cr.)
- Or
- ECLT 410 - Classics of the Ancient World (3 cr.)

- ECLT 302 - Literature of the Renaissance (3 cr.)
  Or
- ECLT 303 - Seventeenth-Century Literature (3 cr.)
  Or
- ECLT 360 - Shakespeare (3 cr.)

- ECLT 304 - Eighteenth-Century Literature (3 cr.)
  Or
- ECLT 305 - Romanticism (3 cr.)
  Or
- ECLT 306 - Nineteenth-Century European Literature (3 cr.)

- ECLT 308 - Modern European and American Literature (3 cr.)
  Or
- ECLT 348 - Contemporary Literature (3 cr.)

- ECLT 310 - American Literature to 1900 (3 cr.)
  Or
- ECLT 311 - Modern American Literature (3 cr.)

- ECLT 411 - History of Literary Criticism (3 cr.)
- ECLT 412 - Modern Literary Criticism (3 cr.)

Three additional courses to be chosen from the following courses (9 credits):

- ECLT 209 - Introduction to American Studies (3 cr.)
  /HIST 209
- ECLT 330 - Literature and Cinema (3 cr.)
- ECLT 332 - World Literature (3 cr.)
- ECLT 333 - African Literature (3 cr.)
- ECLT 344 - Literature and Philosophy (3 cr.)
• ECLT 345 - Literature and Gender (3 cr.)
• ECLT 346 - Third World Literature (3 cr.)
• ECLT 347 - Selected Topics (3 cr.)
• ECLT 352 - Recurrent Themes in Literature (3 cr.)
• ECLT 353 - Modern Drama (3 cr.)
• ECLT 370 - Creative Writing (3 cr.)
• ECLT 447 - Capstone Seminar: Selected Topics (3 cr.)

Any two Additional ECLT courses (6 cr.)

Collateral Requirements (3 credits)

One course in 300- or 400-level Arabic Literature (in Arabic or in translation).

Electives (29-41 credits)

Film (B.A.)

Bachelor of Arts in Film

Since its early days, cinema has been one of the most influential art forms of the twentieth century. Uniquely situated in the “film” city of Cairo, the major in film integrates professional film production training with the study of the historical and theoretical nature of the medium. Another critical component of the degree is studying the dynamics of cinema as a complex cultural, economic, and industrial practice. In conjunction with this academic and professional framework, the degree also provides a balanced consideration of international, regional and local facets of the subject. The curriculum covers the following areas: the development of cinema as an art form; the impact of cinema on culture and society; the historical, thematic and stylistic trends within Egyptian and Arab cinemas; the development of the theoretical and practical background and appreciation of the art of filmmaking; Aesthetic techniques used in production; and the relationship between cinema and the increasingly mediated visual cultures of the world.

Major Requirements

A total of 120 credits are required for the bachelor’s degree in Film:

Core Curriculum (34-46 credits)

Concentration Requirements (15 credits)

• FILM 200 - Analogue and Digital Practices (3 cr.)
• FILM 213 - Introduction to Visual Cultures (3 cr.)
• FILM 220 - Introduction to Film (3 cr.)
• FILM 320 - Cinema in Egypt and the Arab World (3 cr.)
• FILM 330 - Film Theory and Criticism (3 cr.)
Additional Requirements (39 credits)

1. Film Theory and Aesthetics, choose FOUR:
   - FILM 310 - History of World Cinema (3 cr.)
   - FILM 340 - Documentary Film (3 cr.)
   - FILM 341 - Anthropology and Film (3 cr.)
   - FILM 360 - The Filmmaker (3 cr.)
   - FILM 370 - Selected Topics in Film (3 cr.)
   - FILM 390 - Film Genres (3 cr.)
   - FILM 402 - Independent Study (1-3 cr.)
   - FILM 470 - Advanced Seminar in Film Study and Research (3 cr.)

2. Film Production, choose FIVE:
   - FILM 351 - Digital Editing (3 cr.)
   - FILM 353 - Digital Cinematography (3 cr.)
   - FILM 357 - Screenwriting (3 cr.)
   - FILM 450 - Senior Film Project (3 cr.)
   - ARTV 204 - Introduction to Time-Based Media (3 cr.)
   - ARTV 230 - Introduction to Digital Photography (3 cr.)
   - DSGN 335 - Animation (3 cr.)
   - MUSC 334 - Music Production for Visual Media (3 cr.)
   - MUSC 336 - Sound for Picture Production (3 cr.)
   - MUSC 337 - Music for Film (3 cr.)
   - THTR 204 - Introduction to Technical Theatre (3 cr.)
   - THTR 225 - Acting I (3 cr.)
   - THTR 324 - Design for the Theatre (3 cr.)

3. Film as Cultural Industry, choose FOUR:
   - FILM 352 - The Film Industry (3 cr.)
   - FILM 354 - Film Audience and Reception (3 cr.)
   - FILM 370 - Selected Topics in Film (3 cr.)
   - FILM 452 - The Arab and Egyptian Film Industries: National and Global Perspectives (3 cr.)
   - FILM 456 - Experiential Learning in Film (3 cr.)
   - FILM 470 - Advanced Seminar in Film Study and Research (3 cr.)

Collateral Requirements (9 credits)

Choose THREE:
   - ANTH 202 - Cultural Anthropology (3 cr.)
   - ARIC 306 - Arabic Literature and Film (3 cr.)
   - ECLT 411 - History of Literary Criticism (3 cr.)
   - JRMC 420 - Media Management (3 cr.)
• MUSC 331 - Music Production Using Protools I (3 cr.)
• PHIL 310 - Philosophy and Art (3 cr.)
• SOC 306 - Sociology of Literature (3 cr.)
• THTR 203 - The Art of the Theatre (3 cr.)

Electives (22-28 credits)

Graphic Design (B.A.)

Bachelor of Arts in Graphic Design

A program in Graphic Design prepares students for a wide range of professional options. Publications, branding, web and broadcast design, exhibition, and type design are all possible career paths. The program has theory and studio courses that will enable the design student to integrate a good command of visual language with conceptual work, theory, and technology.

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 Art school workshops and labs. The classes will be taught by a group of accomplished faculty supported by visiting faculty and guest lectures. Students will create work that is uniquely theirs helping them to build a portfolio from which they can build their careers.

Major Requirements

A total of 120 credits are required for the bachelor's degree in Graphic Design.

Core Curriculum (34-46 credits)

Concentration Requirements (27 Credits)

• DSGN 200 - Analogue and Digital Practices (3 cr.)
• DSGN 201 - Design I (3 cr.)
• DSGN 210 - Typography I (3 cr.)
• DSGN 213 - Introduction to Visual Cultures (3 cr.)
• DSGN 215 - History of Graphic Design (3 cr.)
• DSGN 250 - Digital Practice I (3 cr.)
• DSGN 420 - Production for Designers (3 cr.)
• DSGN 469 - Senior Project Thesis (3 cr.)
• DSGN 470 - Senior Project Practice (3 cr.)

Additional requirements (27 credits)

1. Professional Practice, Choose FOUR:

• DSGN 202 - Design II: Logo and Corporate Identity (3 cr.)
2) Technical Practice, Choose THREE:

- DSGN 240 - Color (3 cr.)
- DSGN 245 - Illustration (3 cr.)
- DSGN 313 - Web Design (3 cr.)
- DSGN 335 - Animation (3 cr.)
- DSGN 350 - Digital Practices II (3 cr.)
- DSGN 360 - Photography for Designers (3 cr.)
- DSGN 400 - Professional Practice (3 cr.)
- DSGN 410 - Portfolio (3 cr.)
- ARTV 201 - Introduction to Drawing (3 cr.)
- ARTV 230 - Introduction to Digital Photography (3 cr.)

3. History and Theory, choose TWO:

- DSGN 315 - History of Graphic Design in the Arab world (3 cr.)
- DSGN 317 - History of Advertising in the Arab World (3 cr.)
- DSGN 318 - History of Arabic Calligraphy (3 cr.)
- ARIC 368 - The Art of the Book in the Islamic World (3 cr.)

Elective (20-32 credits)

History (B.A.)

Bachelor of Arts

AUC's history major covers a range of European, American and Middle Eastern topics, and allows students the flexibility to develop and pursue their own interests. All courses develop in students an appreciation of the richness, complexity, and diversity of past civilizations, allowing them to examine the human experience in its fullest dimensions. The program as a whole gives students appropriate historical, academic and personal competencies, develops their intellectual sophistication, and provides a solid foundation for their future lives, preparing them for a wide variety of subsequent careers, from law or diplomacy to journalism or business.

A total of 120 credits is required for a bachelor's degree in History.

Core Curriculum (34-46 credits)

Concentration Requirements (36 credits)
- HIST 420 - Historical Theory and Methodology (3 cr.)

Eleven additional history courses,

1. of which at least eight must be above the 200 level
2. including at least two courses in three of the four following areas:
   a. The history of the Middle East
   b. The history of Europe
   c. The history of the United States
   d. Comparative Religion courses that are cross-listed as history courses

Students must consult with their advisors to ensure that their courses provide an appropriate coverage of different historical periods.

Electives:

38-50 credits, to be selected in consultation with a history faculty advisor.

Honors Program in Political Science (B.A.)

Students may apply for admission to the Honors program following completion of 24 credit hours in Political Science or more with a minimum major GPA of 3.4 and must maintain this GPA to continue in the honors program.

Requirements: 45 credits in Political Science as follows:
A. Concentration requirements: 27 cr. or 30 cr.
B. Political Science Specialization 9 cr.
C. Honors Requirements 9 cr.

A. Concentration Requirements: (27 or 30 credits)

- POLS 203 - Introduction to Political Science II (3 cr.)
  This course must be taken if, and only if, POLS 101 was not taken during the Freshman year.
- POLS 204 - Research Methods in Political Science (3 cr.)
- POLS 205 - Europe in the Age of Revolution and Reform (1789-1914) (3 cr.)
  Or
- POLS 206 - Europe in International Politics in the Twentieth Century (3 cr.) /HIST 206
- POLS 301-302 - History of Political Theory (3 cr. per semester)
  (POLS 301 or 302)
- POLS 308 - Comparative Politics of the Middle East (3 cr.)
- POLS 310 - Introduction to Development (3 cr.)
- POLS 313 - Introduction to Comparative Politics (3 cr.)
- POLS 320 - International Relations (3 cr.)
- POLS 350 - Introduction to Political Economy (3 cr.)
- POLS 471 - International Law (3 cr.)

B. Political Science Specialization: 9 crs.
If the student does not opt for a specific specialization the (9) credits will be taken as electives toward an honors general degree. Courses for each specialization is stated in the Catalog.

C. Honors Requirements: 9 crs.

- Honor Seminar POLS 400 (3 credits)
- Methodology course POLS 404 (3 credits)
- Senior Year Thesis POLS 499 (3 credits)

Other Requirements:

Students must complete the general electives and the collateral courses required of all Political Science majors, depending on the number of core curriculum credits taken to make up 120 credits total. Before registering in the 400 and 500 level course students will normally have taken the concentration requirements, or its equivalent.

Integrated Marketing Communication (B.A.)

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 units of university coursework, complete RHET 201 with a grade of B or better, and pass the basic writing skills test. IMC majors are not permitted to have a major in CMA or MMJ. Students must complete a minimum of 120 credits for the Bachelor of Arts degree in IMC of which no more than 40 credits can be in IMC and another 65 of their total credits must be in Humanities and Social Sciences.

Core Curriculum (39 credits)

JRMC Core (12 credits)

- JRMC 200 - Introduction to Mass Communication (3 cr.)
- JRMC 201 - Mass Media Writing (3 cr.)
- JRMC 202 - Multimedia Writing (3 cr.)
- JRMC 203 - Mass Media Ethics and Responsibility (3 cr.)

Integrated Marketing Communication Major (24 credits)
Choose one of the following courses: (3 credits)

- JRMC 230 - Introduction to Photography (3 cr.)
- JRMC 270 - Online Communication (3 cr.)
- JRMC 406 - Internship (3 cr.)
- JRMC 441 - Camera and Editing Workshop (3 cr.)
- JRMC 444 - Media Law and Policy (3 cr.)
- MKTG 408 - Marketing Communications Management (3 cr.)
- MKTG 416 - E-Marketing (3 cr.)

General Electives/Minor

Depending on the number of credit hours needed to complete 120 credits required for bachelor’s degree from AUC, IMC majors are encouraged to select elective courses leading to a minor in an area that will complement their major, including Arabic Studies, History, Middle East Studies, Performing Arts (music, film and theater), Political Science, Sociology and others.

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 (34 - 46 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 200 and 300-level courses in each of the following six fields: Anthropology, Arab Studies, Economics, History, Political Science and Sociology. In addition, the student must take a total of three, 400-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.

200 and 300-level course requirements (36 credits)

- ANTH 202 - Cultural Anthropology (3 cr.)
- ANTH 312 - Peoples and Cultures of the Middle East and North Africa (3 cr.)
- ARIC 246 - Survey of Arab History (3 cr.)
- ECON 201 - Introduction to Macroeconomics (3 cr.)
- ECON 215 - Economic History of the Modern Middle East (3 cr.)
- HIST 355 - State and Society in the Middle East, 1699-1914 (3 cr.)
- HIST 356 - State and Society in the Middle East, 1906-present (3 cr.)
- POLS 203 - Introduction to Political Science II (3 cr.)
- POLS 308 - Comparative Politics of the Middle East (3 cr.)
- SOC 303 - Social Movements (3 cr.)
- SOC 370 - Environmental Issues in Egypt (3 cr.)

Choose one of the following

- ARIC 343 - Arab-Islamic Civilization in the Classic Age, 600-945 A.D. Credits: (3 cr.)
- ARIC 336 - Studies in Ibn Khaldun (3 cr.)

400-level course requirements (9 credits)

In addition to the above courses, students are required to take three 400-level courses from the following list:

- ANTH 425 - Women, Islam and the State (3 cr.)
- ANTH 450 - Third World Development (3 cr.)
- OR ANTH 460 - Development Studies Seminar
- ARIC 439 - Islamic Law (3 cr.)
- ARIC 451 - Islamic Institutions (3 cr.)
- ARIC 454 - Modern Movements in Islam (3 cr.)
- ECON 415 - Seminar on Economic Development in the Middle East (3 cr.)
- HIST 412 - Selected Topics in Modern Egyptian History (3 cr.)
- OR HIST 462 - Selected Topics in the History of the Modern Middle East
- POLS 420 - Issues in Middle East Politics (3 cr.)
- POLS 423 - The Political Economy of Poverty and Inequality (3 cr.)
- POLS 442 - Environmental Politics (3 cr.)
- SOC 450 - Third World Development (3 cr.)
- OR SOC 460 - Development Studies Seminar

Electives (29-41 credits)
Depending on the number of credit hours needed to complete the 120 stated above.

**Multimedia Journalism (B.A.)**

The Multimedia Journalism (MMJ) major involves the convergence of print broadcast and online into a single journalism stream that exposes students to, and provides them with the basic skills for operating on all journalistic platforms. It also provides them with an intensive grounding in the basic reporting, writing, editing and technical skills, which are relevant to all journalistic media. Woven throughout the curriculum is a strong focus on ethics and social responsibility, as well as on the important role journalism plays in a vibrant society. Consistent with the mission of the School of Global Affairs and Public Policy, our programs encompass a number of interdisciplinary courses.

A MMJ major provides students with rigorous academic and professional training. The goal of this major is to produce well rounded students who are knowledgeable about contemporary media theories and research issues, developed excellent writing and communication skills, gained production and presentation skills, and become critical thinkers and writers.

Before declaring a MMJ major, students must complete 24 credits of university coursework, complete RHET 201 with a grade B or better, and pass the basic writing skills test.

MMJ majors are not permitted to have a major in CMA or IMC. Students must complete a minimum of 120 credits for the Bachelor of Arts degree in MMJ, of which no more than 40 credits can be in MMJ and another 65 of their total credit hours must be in Humanities and Social Sciences.

**Core Curriculum (39 credits)**

**JRMC Core (12 credits)**

- JRMC 200 - Introduction to Mass Communication (3 cr.)
- JRMC 201 - Mass Media Writing (3 cr.)
- JRMC 202 - Multimedia Writing (3 cr.)
- JRMC 203 - Mass Media Ethics and Responsibility (3 cr.)

**Multimedia Journalism Major (24 credits)**

- JRMC 230 - Introduction to Photography (3 cr.)
- JRMC 301 - Journalism Editing and Design (3 cr.)
- JRMC 312 - Multimedia Journalism Lab: The Caravan (3 cr.)
- JRMC 333 - Research for Journalists (3 cr.)
- JRMC 337 - TV Scriptwriting and Production (3 cr.)
- JRMC 339 - Studio Production: AUC TV (3 cr.)
- JRMC 460 - Audio Production (3 cr.)
- JRMC 480 - Multimedia Reporting Capstone (3 cr.)

**Choose One of the following Electives in the Major (3 credits)**

- JRMC 305 - Introduction to Visual Communication (3 cr.)
- JRMC 310 - Public Opinion, Persuasion and Propaganda (3 cr.)
- JRMC 330 - Advanced Photography (3 cr.)
General Electives/Minor

Depending on the number of credit hours needed to complete 120 credits required for bachelor’s degree from AUC, MMJ majors are encouraged to select elective courses leading to a minor in an area that will complement their major, including Arabic Studies, History, Middle East Studies, Performing Arts (music, film and theater), Political Science, Sociology and others.

Music Technology (B.A.)

The mission of the Music Program is to teach the theory, literature, and performance of music, and the theory and practice of music technology, to the highest attainable standard in the context of a liberal arts environment, with an orientation towards performance and study in both Western and Arab music.

The program lays a special emphasis on two aspects of what musicians do which are of particular value to students, whether they aspire to a career in music, or only seek to broaden their understanding of the world by enrolling in one or two courses. First, all students who take private instruction in voice or an instrument will learn to sight-read musical notation fluently, and to comprehend what they hear. Second, in the classroom and studio, lessons, rehearsals, and performances, all students in the program are expected to conform to a professional standard: to be punctual and prepared, and to treat their colleagues, and the material to be studied or performed, with the respect that is their due.

Students who major in music may pursue either a Bachelor of Arts degree in music technology, or a Bachelor of Musical Arts (B.M.A.) degree in performance. The Bachelor of Arts in music technology is a liberal arts degree which prepares students for a career in sound engineering, i.e. music recording, editing, production, and broadcasting, or for graduate study in the field.

The Institute for Music Technology offers a sequence of courses in music recording, editing, and production, music for video and film, and electronic music. Such training is crucial not only to students interested in a career in these professions, but also to performers and teachers who need to create and edit demos and audition tracks, to use music files in web sites and other internet applications, or to prepare and market recordings of their own performances and compositions. The Institute for Music Technology is responsible for the recording studio, which is used both as a teaching space and for professional recording.

The Cairo Choral Society is a community chorus dedicated to the study, promotion, and performance of the great choral works in the Western musical tradition. It presents performances with a professional orchestra (the Cairo Festival Orchestra) and soloists at various venues in Cairo. The membership is voluntary, multinational, and cross-generational. The Cairo Choral Society was founded in 1983; in the fall of 2009 it became an ensemble-in-residence within the Department of the Arts. One of the leading large choral ensembles in Egypt, it is both a community-based organization and a for-credit course at AUC. Students may also participate in the chorus on a not-for-credit basis.

Bachelor of Arts

Requirements for the Concentration in Music Technology
In order to complete the Bachelor of Arts in music with a concentration in music technology, a student will

- Learn to read music, and acquire intermediate listening and sight-reading skills.
- Learn fundamental principles of music theory, both Western and Arab.
- Demonstrate the ability to play the piano at an intermediate level or better, and to use a keyboard as a tool for music data entry; more advanced students may also present part of a solo recital, in piano, some other instrument, or voice, with the permission of their teacher.
- Acquire a basic ability to compose and arrange using MIDI (“musical instrument digital interface,” the protocol for the transmission of music data between electronic musical instruments).
- Learn advanced techniques of recording, editing, mixing, and mastering with Protools and other editing software (Protools software is the industry standard for recording, composing, arranging, editing, and mixing digital music).
- Acquire an advanced understanding of the use of music events (i.e. MIDI and related technologies) using synthesizers and samplers.

A total of 120 credits are required for the bachelor’s degree in music with a concentration in music technology.

Core Curriculum (34–46 credits)

Concentration Requirements (45 credits):

Theory, Literature and Performance (18 credits):

- MUSC 220 - Introduction to Music (3 cr.)
- MUSC 240 - Western Music Theory I (3 cr.)
- MUSC 241 - Sight-Singing and Aural Skills I (1 cr.)
- MUSC 245 - Arab Music Theory I (3 cr.)
- MUSC 246 - Maqam I (Arab Music Sight-Singing and Aural Skills) (1 cr.)
  And MUSC 284, 285 Piano Proficiency (1 cr. each = 2 cr.)

One of the following:

- MUSC 342 - Music in the Arab Tradition (3 cr.)
- MUSC 360 - Music in the Western Tradition (3 cr.)

Two semesters of ensemble, chosen from among the following:

- MUSC 262/362 Arab Music Ensemble (1 cr.)
- MUSC 263/363 Guitar Ensemble (1 cr.)
- MUSC 264/364 Chamber Music Ensembles (1 cr.)
- MUSC 265/365 Practicum (1 cr.)
- MUSC 266/366 Chamber Singers (1 cr.)
- MUSC 267/367 Cairo Choral Society (1 cr.)

Music Technology (27 credits):
- MUSC 232, 332, 432 - Digital Audio / MIDI Lab (1 cr. each)
- MUSC 330 - Introduction to Music Technology (3 cr.)
- MUSC 331 - Music Production Using Protools I (3 cr.)
- MUSC 333 - Microphone Techniques (3 cr.)
- MUSC 334 - Music Production for Visual Media (3 cr.)
- MUSC 439 - Digital Mixing Techniques (3 cr.)
- MUSC 490 - Advanced Seminar (3 cr.)

Two additional courses, to be chosen from among the following:

- MUSC 335 - Electronic Music (3 cr.)
- MUSC 336 - Sound for Picture Production (3 cr.)
- MUSC 337 - Music for Film (3 cr.)
- MUSC 371 - Western and Arab Musical Instruments (3 cr.)
- MUSC 438 - Music Production Using Protools II (3 cr.)

Electives (29–41 credits)

Philosophy (B.A.)

Bachelor of Arts

The philosophy major stresses a firm grounding in both the history and the disciplines of philosophy. It is strongly recommended that students majoring in Philosophy minor in another discipline and to explore other areas of study offered by the university. Forty-two 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 require written permission from the department.

To major in Philosophy, students must have taken PHIL 220 course with not less than a "B" grade. In addition, they must have a minimum of 2.4 overall GPA.

Core Curriculum (34 - 46 credits)

Required Courses (12 credits)

- PHIL 312 - Ancient Philosophy (3 cr.)
- PHIL 313 - Medieval Philosophy (3 cr.)
- PHIL 314 - Modern Philosophy (3 cr.)
- PHIL 316 - Twentieth Century Philosophy (3 cr.)

Area Electives (9 credits)

Two of the following:
PHIL 230 - Introduction to Ethics (3 cr.)
PHIL 258 - Political Philosophy (3 cr.)
PHIL 310 - Philosophy and Art (3 cr.)
PHIL 318 - Theory of Knowledge (3 cr.)
PHIL 402 - Metaphysics (3 cr.)

One of the following:

- PHIL 418 - Philosophical Masterpieces (3 cr.)
- PHIL 420 - Philosophical Figures (3 cr.)

Electives in Philosophy (21 credits)

Any seven courses in philosophy excluding 100-level courses PHIL 220 (Philosophical Thinking), and PHIL 299 (Selected Topics for Core Curriculum).

Electives (32 - 44 credits)

Political Science, with specializations in General Political Science, International Relations, Middle East Politics, Political Economy, and Public & International Law (B.A.)

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 about, and an appreciation of, the complex mechanisms, authoritative structures, and the allocation of values, which 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, analytic 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.

For students to declare a major in Political Science, they must take either POLS 101 or POLS 203. POLS 101 may only be taken in the Freshman Year which have a minimum of 2.5 GPA and will fulfill the Social Science requirement at the primary level of the Core Curriculum and will not be counted as part of the 45 credits required for the Political Science major. POLS 203 must be taken after the Freshman Year and for those who have not taken POLS 101. Students wishing to transfer from another major after their sophomore year will be considered on a case by case basis. Junior-year (300-level) courses are required in four subfields and are prerequisite to the more advanced courses and seminars (400-level). Each semester a selection of 300 and 400 level courses and seminars is offered from which students may choose courses to complete the requirements of the major.

A total of 120 credits is required for the bachelor’s degree in Political Science:
Core Curriculum (34-46 credits)

Political Science Requirements (45 credits) to be taken as follows:

1. if POLS 101 has already been taken in the Freshman Year:
   27 credits (9 courses) in the concentration plus 18 credits (6 courses) as electives.

2. if POLS 101 has not been taken in the Freshman Year:
   30 credits (10 courses) in the concentration plus 15 credits (5 courses) as electives.

Collateral requirements: (6 or 9 credits)
General Electives: (20-35 credits)

All Political Science major and minor students must abide with the following
English regulations:

- ENGL 100 is a prerequisite to POLS 101 or POLS 203
- RHET 101 is a prerequisite to POLS 204 and all 300 level POLS courses
- RHET 102 may be taken concurrently with POLS 204 and 300 level POLS courses
- RHET 201 is prerequisite to all 400 level POLS courses

For all Political Science students:

Political Science concentration requirements (27 or 30 credits)

- POLS 203 - Introduction to Political Science II (3 cr.)
  This course must be taken if, and only if, POLS 101 was not taken during the Freshman year.
- POLS 204 - Research Methods in Political Science (3 cr.)
- POLS 205 - Europe in the Age of Revolution and Reform (1789-1914) (3 cr.)
  or POLS 206 Europe in International Politics in the Twentieth Century
  Students specializing in International Relations are strongly encouraged to take POLS/HIST 206
- POLS 301-302 - History of Political Theory (3 cr. per semester)
- POLS 308 - Comparative Politics of the Middle East (3 cr.)
- POLS 310 - Introduction to Development (3 cr.)
- POLS 313 - Introduction to Comparative Politics (3 cr.)
- POLS 320 - International Relations (3 cr.)
- POLS 350 - Introduction to Political Economy (3 cr.)
- POLS 471 - International Law (3 cr.)

Collateral requirements

- HIST - One Modern History course (3 cr.)
  (not to be taken as an independent study) in addition to:
- ECON 201 - Introduction to Macroeconomics (3 cr.)

General Electives

Students may use 15 hours of elective credit to minor in a discipline of their choice. Minoring is optional. Courses taken as collateral requirements may count towards the minor.
Students have the choice to use the 18 elective credits in Political Science (or 15 elective credits if they had to take POLS 203 to fulfill their concentration requirements) to obtain BA in Political Science in:

1. General field in Political Science
2. Specialization in International Relations
3. Specialization in Middle East Politics
4. Specialization in Political Economy
5. Specialization in Public and International Law

Three courses are required for each specialization as specified below.

1. Requirements for the General Political Science field:

Students must take five or six Political Science courses, one of which must be a seminar.

Collateral Requirements (6 credits)
General Electives (23-35 credits)
Depending on the number core curriculum credits taken to make up 120 credits total.

2. Requirements for the Specialization in International Relations

To specialize in International Relations, Political Science majors must, as a minimum, take the following three courses:

Requirements:

- POLS 405 - International Politics in the Middle East (3 cr.)
- POLS 409 - Seminar: International Organization (3 cr.)
- POLS 410 - International Security (3 cr.)
  or
- POLS 411 - Contemporary Foreign Policies (3 cr.)

Options:

To further their understanding in this specialization, students have the option to take a number of recommended courses including:

- POLS 414 - Egyptian Foreign Policy (3 cr.)
- POLS 415 - U.S. Foreign Policy (3 cr.)
- POLS 440 - Seminar: Special Topics in International Relations (3 cr.)

Collateral Requirements (9 credits)

- ECON 201 - Introduction to Macroeconomics (3 cr.)

Two additional history courses chosen from among the following:

- HIST 202 - History of Modern American Civilization (3 cr.)
- HIST 308 - Europe in the Age of Reason (3 cr.)
HIST 356 - State and Society in the Middle East, 1906-present (3 cr.)
HIST 401 - Selected Topics in the History of the United States (3 cr.)
    (when approved by POLS department)
HIST 402 - Selected Topics in European History (3 cr.)
    (when approved by POLS department)
HIST 462 - Selected Topics in the History of the Modern Middle East (3 cr.)

Electives (20-32 credits)
Depending upon the number of core curriculum credits taken.

3. Requirements for the Specialization in Middle East Politics
To specialize in Middle East Politics, Political Science majors must, as a minimum, take the following three courses:

Requirements:
- POLS 354 - Political and Social Thought in the Modern Arab World (3 cr.)
- POLS 420 - Issues in Middle East Politics (3 cr.)
- POLS 422 - Contemporary Egypt (3 cr.)

Options:
To further their understanding in this specialization, students have the option to take a number of recommended courses including:
- ARIC 439 - Islamic Law (3 cr.)
- POLS 325 - Government and Politics of Egypt (3 cr.)
- POLS 405 - International Politics in the Middle East (3 cr.)
- POLS 414 - Egyptian Foreign Policy (3 cr.)
- POLS 424 - Political Economy of the Middle East and North Africa (3 cr.)
- POLS 430 - Seminar: Special Topics in Political Science (3 cr.)
    (If topic is applicable to the ME)
- POLS 472 - International Law in the Middle East (3 cr.)
- POLS 475 - Egyptian Law (3 cr.)
- POLS 477 - Law and Development (3 cr.)

Collateral Requirements (6 credits)
- Modern Middle East History at 300 or 400 level Credits: (3 cr.)
- ECON 201 - Introduction to Macroeconomics (3 cr.)

General Electives (23-35 credits)
Depending on the number of core curriculum credits taken.
4. Requirements for the Specialization in Political Economy

To specialize in Political Economy, Political Science majors must, as a minimum, take the following three courses:

Requirements:

- POLS 351 - Theory and History of Political Economy (3 cr.)
- POLS 424 - Political Economy of the Middle East and North Africa (3 cr.)
- POLS 425 - Global Political Economy (3 cr.)

Options:

To further their understanding in this specialization, students have the option to take a number of recommended courses including:

- POLS 413 - International Financial Institutions (3 cr.)
- POLS 442 - Environmental Politics (3 cr.)

Collateral Requirements (6 credits)

- One Modern History course (not to be taken as an independent study) in addition to:
  - ECON 201 - Introduction to Macroeconomics (3 cr.)

General Electives (23-35 credits)

Depending on the number of core curriculum credits taken.

5. Requirements for the Specialization in Public & International Law

To specialize in Public and International Law, Political Science majors must, as a minimum, take the following three courses:

Requirements:

- POLS 472 - International Law in the Middle East (3 cr.)
- POLS 475 - Egyptian Law (3 cr.)
- POLS 477 - Law and Development (3 cr.)

Options:

To further their understanding in this specialization, students have the option to take a number of recommended courses including:

A number of Special Topics courses that are taught each academic year under course number POLS 473 (Special
Topics in Public Law) and POLS 474 (Special Topics in International Law), and/or a choice of one course at the graduate level in the specialization International Human Rights Law—among which are included:

- ARIC 439 - Islamic Law (3 cr.)
- LAW 510 - Introduction to International Human Rights and Humanitarian Law (3 cr.)
- LAW 516 - Economic, Social, and Cultural Rights (3 cr.)
  *
- LAW 517 - Human Rights and Identity Groups (3 cr.)
  *
- LAW 518 - International Refugee Law (3 cr.)
  *

Note:

* LAW 516 and 517 require the permission of the LAW department; LAW 518 requires the permission of the instructor.

Collateral Requirements (6 credits)

One Modern History course (not to be taken as an independent study) in addition to:

- ECON 201 - Introduction to Macroeconomics (3 cr.)

General Electives (23-35 credits)

Depending upon number of core curriculum credits taken.

Psychology, with a specialization in Community Development (B.A.)

Psychology is the multifaceted scientific study of human behavior and mental processes. The program at AUC emphasizes physical, cognitive, emotional, personal, and social development from infancy to adulthood. This development is studied against a background of major theoretical and applied domains of psychology, concentrating on important aspects of individual, group, and cultural dynamics.

Bachelor of Arts

The aim of psychology at AUC is to provide students with a solid background in the current major areas of the discipline. It will give them insights which can be of personal as well as of practical value in many other occupations. In addition, the program will prepare students wishing to continue further studies leading to a professional career.

Students who intend to seek the Psychology degree must have taken PSYC 201 and have obtained a grade of "B" or higher. In addition, students must have taken or be currently enrolled in PSYC 207. Based on the availability of space, a limited number of students who have successfully completed these courses and who meet the GPA requirements as determined by the department will be accepted in the major.

A total of 120 credit hours is required for the bachelor’s degree in psychology:
Core Curriculum (34-46 credits)

Students must take one of the following for the science requirement:

- BIOL 103 - Introductory Biology (3 cr. + 1 cr. lab)
- BIOL 104 - The Unity of Life (3 cr. + 1 cr. lab)

Concentration Requirements (49 credits)

- PSYC 201 - Introduction to Psychology (3 cr.)
- PSYC 207 - Introduction to Psychological Statistics (3 cr.)
- PSYC 208 - Research Methods for Psychology (3 cr. + 1 cr. lab)
- PSYC 301 - Social Psychology (3 cr.)
- PSYC 304 - Lifespan Development (3 cr.)
- PSYC 308 - Cognitive Psychology (3 cr.)
- PSYC 313 - Learning and Behavioral Psychology (3 cr.)
- PSYC 315 - Psychological Testing and Assessment (3 cr.)
- PSYC 327 - Theories of Personality (3 cr.)
- PSYC 342 - Abnormal Psychology (3 cr.)
- PSYC 380 - Biopsychology (3 cr.)
- PSYC 403 - History and Systems of Psychology (3 cr.)

Additional Requirements

- One additional 300-level psychology course
- Three additional 400-level psychology courses (not including PSYC 402)

Collateral Requirements (24 credits)

Six courses to be approved by the adviser in addition to:

- ANTH 202 - Cultural Anthropology (3 cr.)
- SOC 201 - Introduction to Sociology (3 cr.)

Electives (1-13 credits)

Interdisciplinary Specialization in Community Development

The teaching and application of the principles of community development and community organizing prepares students to work in development agencies. 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.

Students majoring in anthropology, psychology or sociology can choose this specialization in place of the collateral requirements required for their respective majors.
Academic Advising is provided through the Anthropology, Sociology and Psychology units of the Department of Sociology, Anthropology, Psychology and Egyptology on behalf of an interdisciplinary group of faculty.

Declaration Requirements:

1. Must be an anthropology, psychology or sociology major
2. Must have a minimum GPA of 2.5

Course Requirements:

24 credits, including the following:

Required Courses

- SOC 240 - Introduction to Community Development (3 cr.)
  ANTH/PSYC 240
- SOC 340 - Participatory Action Research in Community Settings (3 cr.)
  ANTH/PSYC 340
- SOC 440-441 - Practicum in Community Development (6 cr.)
  ANTH/PSYC 440-441 Year long, two semester sequence

Electives

(At least two of the following, one has to be at the 300 level or above):

- ANTH 303 - Social Movements (3 cr.)
  /SOC 303
- ANTH 370 - Environmental Issues in Egypt (3 cr.)
  /SOC 370
- ANTH 372 - Applied Anthropology (3 cr.)
- ANTH 380 - Fieldwork Methods (3 cr.)
- ANTH 450 - Third World Development (3 cr.)
  /SOC 450
- ANTH 460 - Development Studies Seminar (3 cr.)
  /SOC 460
- PSYC 301 - Social Psychology (3 cr.)
- PSYC 330 - Community Psychology (3 cr.)
- PSYC 430 - Advanced community psychology: Applied research and service (3 cr.)
- SOC 203 - Social Problems of the Middle East (3 cr.)
- SOC 304 - Development Agencies (3 cr.)
- SOC 307 - Social Class and Inequality (3 cr.)
- SOC 435 - Gender and Power in Development (3 cr.)

Sociology, with a specialization in Community Development (B.A.)
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 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.

**Bachelor of Arts**

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.

In order to declare the major in sociology, students must pass SOC 201 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 495 in their last full academic year. Courses at the 500-level are also open to selected advanced undergraduates.

A total of 120 credits is required for the bachelor’s degree in sociology:

**Core Curriculum (34-46 credits)**

**Concentration Requirements (42 credits)**

- SOC 201 - Introduction to Sociology (3 cr.)
- SOC 204 - Social Statistics (3 cr.)
- SOC 309 - History of Social Theory (3 cr.)
  

  See footnote one.
- SOC 310 - Contemporary Sociological Theory (3 cr.)
  

  See footnote one.
- SOC 381 - Doing Survey Research in the Social Sciences (3 cr.)
- SOC 450 - Third World Development (3 cr.)
  

  See footnote one.
- SOC 495 - Senior Seminar (3 cr.)
  

  See footnote one.

One of either

- SOC 203 - Social Problems of the Middle East (3 cr.)
- SOC 206 - Arab Family Structure and Dynamics (3 cr.)

**One of either**

- SOC 303 - Social Movements (3 cr.)
- SOC 307 - Social Class and Inequality (3 cr.)

**Additional Requirements**
Two additional 300 level courses in sociology
Three additional 400 level courses in sociology

Collateral Requirements (24 credits)

Three of the following courses:

- ANTH 202 - Cultural Anthropology (3 cr.)
- ANTH 380 - Fieldwork Methods (3 cr.)
- CSCE 102 - Introduction to Computers and their Applications (3 cr.)
- ECON 201 - Introduction to Macroeconomics (3 cr.)
- JRMC 200 - Introduction to Mass Communication (3 cr.)
- POLS 101 - Introduction to Political Science (3 cr.)
- PSYC 201 - Introduction to Psychology (3 cr.)

Additional Requirements

Five additional courses from any social science or humanities discipline, or relevant substitutes, to be approved by the advisor, at least three of which must be at the 300 or 400 level.

Electives (8-20 credits)

Notes

Footnote 1: Cross listed with Anthropology

Interdisciplinary Specialization in Community Development

The teaching and application of the principles of community development and community organizing prepares students to work in development agencies. 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.

Students majoring in anthropology, psychology or sociology can choose this specialization in place of the collateral requirements required for their respective majors.

Academic Advising is provided through the Anthropology, Sociology and Psychology units of the Department of Sociology, Anthropology, Psychology and Egyptology on behalf of an interdisciplinary group of faculty.

Declaration Requirements:

1. Must be an anthropology, psychology or sociology major
2. Must have a minimum GPA of 2.5

Course Requirements:
24 credits, including the following:

**Required Courses**

- SOC 240 - Introduction to Community Development (3 cr.)
  ANTH/PSYC 240
- SOC 340 - Participatory Action Research in Community Settings (3 cr.)
  ANTH/PSYC 340
- SOC 440-441 - Practicum in Community Development (6 cr.)
  ANTH/PSYC 440-441 Year long, two semester sequence

**Electives**

(At least two of the following, one has to be at the 300 level or above):

- ANTH 303 - Social Movements (3 cr.)
  /SOC 303
- ANTH 370 - Environmental Issues in Egypt (3 cr.)
  /SOC 370
- ANTH 372 - Applied Anthropology (3 cr.)
- ANTH 380 - Fieldwork Methods (3 cr.)
- ANTH 450 - Third World Development (3 cr.)
  /SOC 450
- ANTH 460 - Development Studies Seminar (3 cr.)
  /SOC 460
- PSYC 301 - Social Psychology (3 cr.)
- PSYC 330 - Community Psychology (3 cr.)
- PSYC 430 - Advanced community psychology: Applied research and service (3 cr.)
- SOC 203 - Social Problems of the Middle East (3 cr.)
- SOC 304 - Development Agencies (3 cr.)
- SOC 307 - Social Class and Inequality (3 cr.)
- SOC 435 - Gender and Power in Development (3 cr.)

**Theatre (B.A.)**

The Department of the Arts offers both a bachelor’s degree and a minor in theatre. The curriculum balances solid fundamental study of the literature, history, and theory of theatre with practical theatre experience in performance, directing, design, and technical theatre. The program offers a liberal arts approach to theatre study, an approach that aims at enriching the students’ awareness of the role of theatre arts within society.

**Performances**

The department produces a season of fully-realized plays, sponsors student-directed plays, and hosts visiting productions in its three theatres, the Malak Gabr Theatre, Gerhart Theatre, and Black Box Theatre. The department offers students the opportunity to interact with internationally renowned guest artists who are brought to AUC to serve as directors, designers, and performers. Students who participate are eligible to receive course credit depending on the extent of their involvement.
Bachelor of Arts

Theatre majors follow a program of courses in dramatic literature, theory, and history; a program of studio courses (acting, directing, and design), and play an active role in the department's productions.

A total of 120 credits is required for the bachelor’s degree in theatre.

Core Curriculum (34-46 credits)

Concentration Requirements (45 credits)

- THTR 203 - The Art of the Theatre (3 cr.)
- THTR 204 - Introduction to Technical Theatre (3 cr.)
- THTR 225 - Acting I (3 cr.)
- THTR 230 - Play Analysis (3 cr.)
- THTR 324 - Design for the Theatre (3 cr.)
- THTR 328 - Directing I (3 cr.)
- THTR 340 - Advanced Theatre Practicum (3 cr.)
- THTR 350 - Survey of Dramatic Literature (3 cr.)
- THTR 351 - History of The Theatre (3 cr.)
- THTR 460 - Modern and Contemporary Drama (3 cr.)
- THTR 461 - Dramatic Theory and Criticism (3 cr.)
- THTR 490 - Senior Thesis (3 cr.)

Additional Requirements

Three credits from the following:

- THTR 240 - Production Practicum (1 cr. per production)
- THTR 242 - Rehearsal and Performance Practicum (1 cr. per production)

Two courses in the department to be chosen among the following:

- THTR 226 - Acting in Arabic I (3 cr.)
- THTR 227 - Acting II (3 cr.)
- THTR 326 - Acting in Arabic II (3 cr.)
- THTR 327 - Special Topics in Acting (3 cr.)
- THTR 344 - Design Practicum (3 cr.)
- THTR 360 - Playwriting I (3 cr.)
- THTR 361 - Playwriting II (3 cr.)
- THTR 428 - Directing II (3 cr.)
- THTR 495 - Senior Honors Project (3 cr.)

Collateral Requirements (9 credits):
Three courses chosen from the following:

- ANTH 202 - Cultural Anthropology (3 cr.)
- ARIC 315 - Arabic Drama (3 cr.)
- ECLT 360 - Shakespeare (3 cr.)
- ECLT 411 - History of Literary Criticism (3 cr.)
- FILM 220 - Introduction to Film (3 cr.)
- FILM 330 - Film Theory and Criticism (3 cr.)
- HIST 207 - World History (3 cr.)
- HIST 210 - Religions of the World (3 cr.)
- MUSC 220 - Introduction to Music (3 cr.)
- MUSC 360 - Music in the Western Tradition (3 cr.)
- PHIL 310 - Philosophy and Art (3 cr.)
- PSYC 327 - Theories of Personality (3 cr.)
- SOC 306 - Sociology of Literature (3 cr.)

Electives (11-25 credits):

The program will actively encourage its majors to work towards minors in fields such as anthropology, sociology, literature, music, art, political science, or business administration. Elective credits will be used for the minor.

Visual Arts (B.A.)

Bachelor of Arts in Visual Arts

The Visual Arts Major provides students with a space for creative practice in a cross-disciplinary environment that emphasizes theory, practice and cultural understanding. The program is founded on the belief that visual art is a fundamental force in Egypt and the region, especially in relation to post-revolution cultural environment.

We offer our students an experimental platform for creative freedom, critical thinking, and innovation. Students are encouraged to interrogate all ordinary ideas about contemporary visual art, and are challenged to expand and create critical self-awareness about their own work and establish an intellectual understanding of the issues and contexts that inform art practice in today’s local and global visual cultures.

Major Requirements

A total of 120 credits are required for the bachelor’s degree in Visual Arts:

Core Curriculum (34-46 credits)

Concentration requirements (27 credits)
• ARTV 200 - Analogue and Digital Practices (3 cr.)
• ARTV 213 - Introduction to Visual Cultures (3 cr.)
• ARTV 311 - Art Studio I (3 cr.)
• ARTV 312 - Art Studio II (3 cr.)
• ARTV 315 - Art Theory (3 cr.)
• ARTV 411 - Studio III (3 cr.)
• ARTV 412 - Studio IV (3 cr.)
• ARTV 469 - Senior Project (A) (3 cr.)
• ARTV 470 - Senior Project (B) (3 cr.)

Additional Requirements (21 credits)

Choose SEVEN:

• ARTV 201 - Introduction to Drawing (3 cr.)
• ARTV 202 - Introduction to Painting (3 cr.)
• ARTV 203 - Introduction to sculpture/Installation (3 cr.)
• ARTV 204 - Introduction to Time-Based Media (3 cr.)
• ARTV 205 - Introduction to Alternative Practices (3 cr.)
• ARTV 230 - Introduction to Digital Photography (3 cr.)
• ARTV 370 - Selected Topics in Art (3 cr.)
• ARTV 410 - Contemporary issues in Arab Art (3 cr.)
• DSGN 250 - Digital Practice I (3 cr.)

Collateral Requirements (6 credits)

Choose TWO:

• DSGN 315 - History of Graphic Design in the Arab world (3 cr.)
• FILM 352 - The Film Industry (3 cr.)
• FILM 354 - Film Audience and Reception (3 cr.)
• FILM 452 - The Arab and Egyptian Film Industries: National and Global Perspectives (3 cr.)
• FILM 456 - Experiential Learning in Film (3 cr.)
• FILM 470 - Advanced Seminar in Film Study and Research (3 cr.)

Elective (20-32 credits)

Bachelor of Business Administration

Business Administration, with concentrations in Marketing, Finance, Management of Information Technology and General Business (B.B.A.)

Bachelor of Business Administration (B.B.A.)
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.

The number of students accepted in the Bachelor of Business Administration program is limited and is filled through the declaration of major process.

Students who seek to be admitted to the Bachelor of Business Administration program should apply in their third semester. Students seeking to declare the BBA program must have completed not less than 27 credit hours of study including the two courses listed below. Based on the available space a limited number of students who have successfully completed these courses and who meet the GPA requirements as determined by the department will be accepted in the major.

1. ACCT 201 Financial Accounting, 3 cr.
2. ECON 201 Introduction to Macroeconomics, 3 cr.
   OR
   ECON 202 Introduction to Microeconomics, 3 cr.

Students who seek the Bachelor of Business Administration degree are not permitted to have a major or a minor in accounting.

Students must complete a minimum of 127 credit hours for the Bachelor of Business Administration degree with no more than 63 hours of courses in the business area.

**Core Curriculum (34-46 credits)**

**Collateral Requirements**

All students seeking a Bachelor of Business Administration degree must complete the following collateral requirements (12 credits)

- ECON 201 - Introduction to Macroeconomics (3 cr.)
- ECON 202 - Introduction to Microeconomics (3 cr.)
- ECON 216 - Mathematics for Economists I (3 cr.)
- MACT 210 - Statistics for Business (3 cr.)

**Business Core Requirements (33 credits)**

- ACCT 201 - Financial Accounting (3 cr.)
- ACCT 202 - Managerial Accounting (3 cr.)
- FINC 303 - Business Finance I (3 cr.)
- INTB 301 - Introduction to International Business (3 cr.)
- MGMT 300 - Business Environment and Ethics (3 cr.)
- MGMT 307 - Management Fundamentals (3 cr.)
- MGMT 311 - Business Law (Commercial & Fiscal) (3 cr.)
- MGMT 480 - Business Planning and Strategy (3 cr.)
- MKTG 302 - Principles of Marketing (3 cr.)
- MOIS 305 - Introduction to Information Systems/Technology (3 cr.)
• OPMG 310 - Operations for Competitive Advantage (3 cr.)

Concentration Requirements (21 credits)

Students seeking a BBA degree must select only one of the following four options:

1. BBA with a marketing concentration
2. BBA with a finance concentration
3. BBA with a management of information technology concentration
4. BBA with a general business concentration

1. Marketing Concentration (21 credits)

Students seeking a concentration in marketing are required to take the following courses after they complete the business core:

- MKTG 405 - Marketing Research (3 cr.)
- MKTG 410 - Consumer-Buyer Behavior (3 cr.)
- MKTG 480 - Marketing Strategy (3 cr.)
- MKTG 408 - Marketing Communications Management (3 cr.)

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

- MKTG 411 - Professional Selling (3 cr.)
- MKTG 412 - International Marketing (3 cr.)
- MKTG 414 - Services Marketing (3 cr.)
- MKTG 416 - E-Marketing (3 cr.)
- MKTG 418 - Principles of Public Relations (3 cr.)
- MKTG 420 - Advanced Marketing Research (3 cr.)
- MKTG 470 - Special topics in Marketing (3 cr.)

2. Finance Concentration (21 credits)

Students seeking a concentration in finance are required to take the following courses:

- FINC 404 - Investment Analysis (3 cr.)
- FINC 405 - Applied Banking (3 cr.)
- FINC 414 - Corporate Finance (3 cr.)

In addition, choose four of the following finance elective courses:

- ECON 303 - Money and Banking (3 cr.)
- FINC 408 - International Finance (3 cr.)
- FINC 410 - Capital Markets (3 cr.)
- FINC 412 - Options and Derivatives (3 cr.)
- FINC 415 - Portfolio Theory and its Applications (3 cr.)
- FINC 470 - Special Topics in Financial Management (3 cr.)

3. Management of Information Technology Concentration (21 credits)

An erratum to the MOIS concentration

Students seeking a concentration in Management of Information Technology (MOIS) are required to take the following courses after they complete the business core:

- MOIS 406 - Management Information Systems and Database Management (3 cr.)
- MOIS 435 - Introduction to Electronic Business (3 cr.)
- MOIS 466 - Human Computer Interaction (HCI) (3 cr.)
- MOIS 499 - Internship Project (3 cr.)

Two courses to be selected from the MOIS area:

- MOIS 423 - Geographic Information Systems (GIS) (3 cr.)
- MOIS 430 - Business Information Systems Analysis and Development (3 cr.)
- MOIS 432 - Information & Decision Support Systems (3 cr.)
- MOIS 433 - Marketing Information Systems (3 cr.)
- MOIS 434 - Financial Information Systems (3 cr.)
- MOIS 444 - Accounting Information Systems (3 cr.)
- MOIS 450 - Strategic Information Systems (3 cr.)
- MOIS 470 - Special Topics in Management of Information Systems (3 cr.)

4. General Business (21 credits)

After completing the business core, students seeking a concentration in general business are required to take seven courses from at least five different functional areas, not to exceed two courses from any single area, at the 300 and 400 levels.

Areas for the General Business Concentration are accounting, finance, international business, management, marketing, management of information technology, and operations management.

Electives (15-27 credits)

Management of Information and Communication Technology (B.B.A.)

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.

The number of students accepted in the MICT program is limited. This is done through the declaration of major process for science students only. Students seeking to declare the MICT program must have completed the three courses listed below. Based on the available space a limited number of students who have successfully completed these courses and who meet the GPA requirements as determined by the department will be accepted in the major.

1. ACCT 201 - Financial Accounting
2. CSCE 106 - Fundamentals of Computer Science
3. MACT 112 - Statistical Reasoning or MACT 131 - Calculus I

Students who seek the MICT degree are not permitted to have a major or a minor in accounting.

Students must complete a minimum of 127 credit hours for the MICT degree with no more than 63 hours of courses in the business area.

**Course Requirements**

(Total Credit = 127 with no more than 63 hours of courses in the business area)

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Cr.</th>
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<td>RHET 101 * (P)</td>
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<td>RHET 102 * (P)</td>
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<td>RHET 201 * (P)</td>
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<td>SCI 120 (P)</td>
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<td>PHIL 220 (P)</td>
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<td>Humanity (P/S)</td>
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<tr>
<td>Social Sc. (P/S)</td>
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<td>Arab World Studies (S) ⊗</td>
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Arab World Studies (S) Θ 3
International World Studies (S) 3
Core Capstone Course (C) 3
Core Capstone Course (C) 3
Total 40

**General Electives / Minor**

<table>
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<td><strong>Total</strong></td>
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</tbody>
</table>

(P) Primary level courses taken during first 3 Semesters.
(S) Secondary level courses taken by students' 6th Semester.
(C) Capstone level courses taken during students' last 2 Semesters.
* Students exempted from RHET 101 or 102 or 201 must take any RHET 300 or 400 course.
√ Non-Thanaweya Amma arabic language holders may be required to take 0-6 credits depending on Arabic placement test score.
ΘThanaweya Amma arabic language students may not take Arabic Literature in Translation

**Before declaration:**

- Students must have completed 27 cr. hrs.
- the following courses must be taken: ACCT 201, CSCE 106 and MACT 112

**Business Core Requirements**

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Cr.</th>
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<tr>
<td>FINC 303</td>
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<td>MKTG 302</td>
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Collateral Requirements

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<td>ECON 216 Ψ</td>
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<td>MACT 112 ΨΨ</td>
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</table>

Ψ ECON 216 can be replaced by MACT 131/132 (for BADM & ACCT majors only)
ΨΨ MACT 100 is a pre-requisite for MACT 112 and ECON 216.
It can be taken with MACT 112 (same semester) but must be taken before ECON 216. It is considered as an elective course.

MOIT Requirements

<table>
<thead>
<tr>
<th>Course No.</th>
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<tbody>
<tr>
<td>MOIS 406</td>
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<td>MOIS 435</td>
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<td>MOIS 466</td>
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<tr>
<td>MOIS 499</td>
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</tbody>
</table>

One course to be selected from the MOIT area:

MOIS 430
MOIS 477

Two courses to be selected from the MOIT area:
MOIS 423 3
MOIS 432 3
MOIS 433 3
MOIS 434 3
MOIS 444 3
MOIS 450 3
MOIS 470 3
Total 21

Computer Science Requirements

<table>
<thead>
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<td>CSCE 210</td>
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<td>CSCE 346</td>
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<td>CSCE 342</td>
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</table>

Two courses to be selected from the CSCE area:

<table>
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<td>CSCE 456</td>
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<tr>
<td>CSCE 485</td>
<td>3</td>
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</tbody>
</table>

Total 21

Bachelor of Musical Arts (B.M.A.)

Performance (B.M.A.)
The mission of the Music Program is to teach the theory, literature, and performance of music, and the theory and practice of music technology, to the highest attainable standard in the context of a liberal arts environment, with an orientation towards performance and study in both Western and Arab music.

The program lays a special emphasis on two aspects of what musicians do which are of particular value to students, whether they aspire to a career in music, or only seek to broaden their understanding of the world by enrolling in one or two courses. First, all students who take private instruction in voice or an instrument will learn to sight-read musical notation fluently, and to comprehend what they hear. Second, in the classroom and studio, lessons, rehearsals, and performances, all students in the program are expected to conform to a professional standard: to be punctual and prepared, and to treat their colleagues, and the material to be studied or performed, with the respect that is their due.

Students who major in music may pursue either a Bachelor of Arts degree in music technology, or a Bachelor of Musical Arts (B.M.A.) degree in Performance. The Bachelor of Musical Arts in Performance is a professional degree built on a liberal arts core which prepares students for a career in teaching or performance in voice or an instrument, or for graduate study in performance.

The Institute for Music Technology offers a sequence of courses in music recording, editing, and production, music for video and film, and electronic music. Such training is crucial not only to students interested in a career in these professions, but also to performers and teachers who need to create and edit demos and audition tracks, to use music files in web sites and other internet applications, or to prepare and market recordings of their own performances and compositions. The Institute for Music Technology is responsible for the recording studio, which is used both as a teaching space and for professional recording.

The Cairo Choral Society is a community chorus dedicated to the study, promotion, and performance of the great choral works in the Western musical tradition. It presents performances with a professional orchestra (the Cairo Festival Orchestra) and soloists at various venues in Cairo. The membership is voluntary, multinational, and cross-generational. The Cairo Choral Society was founded in 1983; in the fall of 2009 it became an ensemble-in-residence within the Department of the Arts. One of the leading large choral ensembles in Egypt, it is both a community-based organization and a for-credit course at AUC. Students may also participate in the chorus on a not-for-credit basis.

Bachelor of Musical Arts (B.M.A.)

Requirements for the Concentration in Performance

In order to complete the Bachelor of Musical Arts with a concentration in performance, a student will:

- Learn to read music fluently, and demonstrate advanced listening and sight-reading skills.
- Demonstrate the ability to play the piano at an intermediate level or better.
- Develop a significant understanding of Western and Arab music theory.
- Study representative great works of Western and Arab music literature and the composers who produced them.
- Demonstrate the ability to sing or play an instrument at or near a professional level; as a final project the student would present a solo recital.
- Sing in choir, and/or play in an instrumental ensemble.

Students who enter the concentration in performance must choose a primary instrument or voice, in which they must complete at least five semesters of private applied instruction, plus MUSC 492, the Capstone Solo Recital. In order to be accepted into the major, all students will be required to audition before the faculty in their primary instrument or voice, normally by the end of the freshman year.
All students entering the Bachelor of Musical Arts program must either pass the music literacy placement exam or take MUSC 180, How to Read Music, concurrently with MUSC 280, the first semester of Private Applied Instruction. Students who choose a primary instrument other than piano will also be required to pass a piano proficiency exam by the end of the sophomore year in order to graduate; those who fail to pass this exam are required to take MUSC 284, 285, and 286, Private Applied Instruction for Piano Proficiency.

A total of 120 credits are required for the Bachelor of Musical Arts degree. Students who wish to add a second major in another subject can do so by completing 140-145 credits.

Core Curriculum (34 - 46 credits)

Concentration Requirements (55 - 63 credits)

Literature (9 credits)

- MUSC 220 - Introduction to Music (3 cr.)
- MUSC 342 - Music in the Arab Tradition (3 cr.)
- MUSC 360 - Music in the Western Tradition (3 cr.)

Theory (20 credits)

- MUSC 240 - Western Music Theory I (3 cr.)
- MUSC 241 - Sight-Singing and Aural Skills I (1 cr.)
- MUSC 245 - Arab Music Theory I (3 cr.)
- MUSC 246 - Maqam I (Arab Music Sight-Singing and Aural Skills) (1 cr.)
- MUSC 340 - Western Music Theory II (3 cr.)
- MUSC 341 - Sight-Singing and Aural Skills II (1 cr.)
- MUSC 345 - Arab Music Theory II (3 cr.)
- MUSC 346 - Maqam II (Arab Music Sight-Singing and Aural Skills) (1 cr.)
- MUSC 440 - Western Music Theory III (3 cr.)
- MUSC 441 - Sight-Singing and Aural Skills III (1 cr.)

Performance (26 - 31 cr.)

- MUSC 280/281 - Applied Private Instruction (1 cr.)
- MUSC 282/283 - Applied Private Instruction (2 cr.)
- MUSC 480/481/482/483 - Advanced Applied Private Instruction (3 cr.)
- MUSC 492 - Capstone Final Recital (3 cr.)

Eight semesters of ensemble, chosen from among the following:

- MUSC 262/362/462 - Arab Music Ensemble (1 cr.)
- MUSC 263/363/463 - Guitar Ensemble (1 cr.)
- MUSC 264/364/464 - Chamber Music Ensembles (1 cr.)
• MUSC 265/365/465 - Rehearsal/Performance Practicum (1 cr.)
• MUSC 266/366/466 - Chamber Singers (1 cr.)
• MUSC 267/367/467 - Cairo Choral Society (1 cr.)

* All students entering the B.M.A. are required to take the music literacy placement exam. Those who do not achieve a passing grade are required to take the following:

MUSC 180 - How to Read Music

All students with primary instrument other than piano must take the piano proficiency exam. Those who do not achieve a passing grade are required to take the following:

MUSC 284/285/286 - Private Instruction for Piano Proficiency

Specialization Requirements (0 - 3 credits)

Students specialized in Voice will take the following course:
• MUSC 372 - Diction for Singers in the Western Tradition (3 cr.)

Students specialized in Guitar will take the following course:
• MUSC 311 - Guitar Pedagogy (3 cr.)

Electives (9 - 29 credits)

Students who choose to add a second major will in most cases need to complete an additional fifteen to twenty credits.

Students with interest in opera are encouraged to add a minor in Theater.

Bachelor of Science

Actuarial Science (B.S.)

Bachelor of Science in Actuarial Science

The life of nearly every one 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 web site: http://www.aucegypt.edu/sse/math/majmin/Pages/BachelorofScienceinActuarialScience.aspx 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, business law, accounting, and marketing. Consequently, the Actuarial Science Program cuts across the School of Science and Engineering and the School of
What a major in Actuarial Science offers:
To summarize, 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 companies, actuarial consulting firms, banks and other financial institutions, as well as government agencies like the Egyptian Insurance Supervisory Authority (EISA), 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, business law, accounting, and marketing are essential.
- completing the first five certification examinations jointly offered by the Society of Actuaries and Casualty Actuarial Society, an important step toward actuarial certification and toward obtaining the actuarial license from the Egyptian Insurance Supervisory Authority.

A total of 130 credits is required for the bachelor’s degree in actuarial science. Students may be exempted from the MACT 131 requirement based on high school certificate and score in mathematics or by passing a placement examination. See the Actuarial Science’s website http://www.aucegypt.edu/sse/math/majmin/Pages/BachelorofScienceinActuarialScience.aspx for a sample schedule for completing the requirements for the B.Sc. degree in Actuarial Science.

Core Curriculum (31-43 credits)

Actuarial Science students must take 1 credit hour of Natural Science lab.

Concentration Requirements (60 credits)

- MACT 112 - Statistical Reasoning (3 cr.)
- MACT 131 - Calculus I (0/3)
- MACT 132 - Calculus II (3 cr.)
- MACT 231 - Calculus III (3 cr.)
- MACT 233 - Differential Equations (3 cr.)
- MACT 240 - Linear Algebra (3 cr.)
- MACT 306 - Applied Probability (3 cr.)
- MACT 307 - Statistical Inference (3 cr.)
- MACT 321 - Mathematics of Investment (3 cr.)
- MACT 406 - Stochastic Processes (3 cr.)
- MACT 407 - Insurance Loss Models I (3 cr.)
- MACT 408 - Insurance Loss Models II (3 cr.)
- MACT 412 - Mathematical Modeling (3 cr.)
- MACT 421 - Mathematics of Derivatives Pricing I (3 cr.)
- MACT 422 - Mathematics of Derivatives Pricing II (3 cr.)
- MACT 423 - Life Contingencies I (3 cr.)
- MACT 424 - Life Contingencies II (3 cr.)
- MACT 427 - Applied Regression Methods (3 cr.)
- MACT 428 - Analysis of Time Series Data (3 cr.)
- MACT 429 - Applied Multivariate Analysis (3 cr.)
Collateral Requirements (27 credits)

- ACCT 201 - Financial Accounting (3 cr.)
- CSCE 106 - Fundamentals of Computer Science (3 cr.)
- ECON 201 - Introduction to Macroeconomics (3 cr.)
- ECON 202 - Introduction to Microeconomics (3 cr.)
- ECON 301 - Intermediate Macroeconomic Theory (3 cr.)
- ECON 302 - Intermediate Microeconomic Theory (3 cr.)
- FINC 303 - Business Finance I (3 cr.)
- FINC 404 - Investment Analysis (3 cr.)
- FINC 415 - Portfolio Theory and its Applications (3 cr.)

Electives (0-12 credits)

Courses to be chosen in consultation with the advisor. The following courses are recommended as electives:

- ACCT 202 - Managerial Accounting (3 cr.)
- CSCE 110 - Programming Fundamentals (3 cr.)
- CSCE 210 - Data Structures and Algorithms (3 cr.)
- CSCE 253 - Fundamentals of Database Systems (3 cr.)
- CSCE 453 - Database Systems (3 cr.)
- ECON 303 - Money and Banking (3 cr.)
- ECON 318 - Introduction to Econometrics (3 cr.)
- ECON 403 - International Trade (3 cr.)
- FINC 408 - International Finance (3 cr.)
- MACT 304 - Numerical Methods (3 cr.)
- MACT 409 - Selected Topics in Mathematics (3 cr.)
- MACT 410 - Guided Studies in Mathematics (1-3 cr.)
- MACT 411 - Selected Topics in Actuarial Science (3 cr.)
- MACT 495 - Senior Thesis (3 cr.)
- MACT 497 - Practical Internship (3 cr.)
- MGMT 307 - Management Fundamentals (3 cr.)
- MGMT 404 - Human Resources Management (3 cr.)
- MKTG 302 - Principles of Marketing (3 cr.)
- MKTG 405 - Marketing Research (3 cr.)
- MOIS 305 - Introduction to Information Systems/Technology (3 cr.)
- MOIS 406 - Management Information Systems and Database Management (3 cr.)
- MOIS 432 - Information & Decision Support Systems (3 cr.)

Architectural Engineering (B.S.)

Bachelor of Science in Architectural Engineering

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 Science in Architectural Engineering Program is to train architects who can lead the architectural profession in Egypt and the Middle-East into the digital age while respecting the 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 is to train 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 Architectural Engineering 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 Architectural Engineering 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.

Students are admitted to the Architectural Engineering Program either upon admission to AUC or after successful completion of criteria courses. High school students with mathematics/science background are accepted depending on their High School grades and the available quota in the program. Undeclared and transfer students are admitted to the program upon completing criteria courses. Students are accepted based on their GPA and on available quota in the department.

Students who are admitted to the program have to demonstrate their visualization, graphic communication and creative potential. They must achieve a minimum grade of B- in each of the three courses listed below before taking any other courses in the major.

ENGR 115 Descriptive Geometry and Engineering Drawing, 2 cr.
AENG 250 "Foundations of 3-Dimensional Design, 3cr
AENG 273 Digital Representation Tools for Architects, 2cr

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 and Architectural Engineering.

A total of 162 credits is required for the Bachelor of Science Degree in Architectural Engineering:

**Core Curriculum (31/34-46 credits)**

- The natural science requirement of the Core Curriculum electives is met within the Engineering Core requirements. (4 credits)
- Three credit hours of the Capstone Stage requirement of the Core Curriculum is met by the Senior Project I and II courses. (3 credits)
Engineering Core Requirements (26 credits)

- CHEM 105 - General Chemistry I (3 cr.)
- CSCE 106 - Fundamentals of Computer Science (3 cr.)
- ENGR 101 - Introduction to Engineering (1 cr.)
- ENGR 115 - Descriptive Geometry and Engineering Drawing (2 cr.)
- ENGR 212 - Engineering Mechanics I (Statics) (3 cr.)
- ENGR 229 - Strength and Testing of Materials (4 cr.)
- ENGR 345 - Engineering Economy (3 cr.)
- MACT 131 - Calculus I (0/3)
- MACT 132 - Calculus II (3 cr.)
- PHYS 111 - Classical Mechanics, Sound and Heat (3 cr.)
- PHYS 123L - General Physics Laboratory I (1 cr.)

Concentration Requirements (100 credits)

Visual Communication and Basic Design:

- AENG 250 - Foundations of 3-Dimensional Design 3 cr.
- AENG 251 - Introduction to Architectural Design (3 cr.)
- AENG 273 - Digital Representation Tools for Architects (2 cr.)
- ARTV 221 - Technical Drawing for Designers (3 cr.)

Architecture, Urban Planning and Interior Design:

- AENG 268 - Surveying for Architects (1 cr.)
- AENG 351 - Architectural Design Studio I (4 cr.)
- AENG 352 - Architectural Design Studio II (4 cr.)
- AENG 368 - Housing Design and Geographic Information Systems (3 cr.)
- AENG 420 - Design of Interior Spaces (3 cr.)
- AENG 453 - Architectural Design Studio III (4 cr.)
- AENG 454 - Architectural Design Studio IV (4 cr.)
- AENG 455 - Architectural Design Studio V (4 cr.)
- AENG 456 - Architectural Design Studio VI (4 cr.)
- AENG 468 - Urban Design and Landscape Architecture (3 cr.)
- AENG 473 - Digital Design Studio and Workshop (3 cr.)
- AENG 490 - Senior Project I (2 cr.)
- AENG 491 - Senior Project II (5 cr.)

History and Humanities and Allied Design Courses:

- AENG 234 - Human Aspects in Architectural Design (3 cr.)
- ARIC 205 - Islamic Architecture, from the Beginnings to the Present Day (3 cr.)
- ARTV 314 - Modern and Contemporary Architecture (3 cr.)
- EGPT 203 - Introduction to Egyptian Architecture (3 cr.)
Construction Engineering and Management:

- AENG 323 - Construction Materials and Quality Control (3 cr.)
- AENG 326 - Environmental Control Systems and Sustainable Design (3 cr.)
- AENG 426 - Building Service Systems and Building Systems Integration (3 cr.)
- AENG 428 - Detail Design and Finishes in Buildings (3 cr.)
- AENG 429 - Design Development and Construction Documents (3 cr.)
- AENG 441 - Professional Practice, Design Management and Codes (2 cr.)
- AENG 496 - Internship in Construction Projects (0 cr.)
- AENG 497 - Internship in Technical Drawing and Design (1 cr.)
- CENG 302 - Structural Analysis for Architects (3 cr.)
- CENG 305 - Structural Design for Architects I (3 cr.)
- CENG 306 - Structural Design for Architects II (3 cr.)
- CENG 423 - Methods and Equipment for Construction I (3 cr.)
- CENG 428 - Tall Buildings and Large Span Structures (3 cr.)
- CENG 441 - Introduction to Construction Management and Cost Estimating (3 cr.)

Concentration Electives (3 credits)

Students should choose one course from the following:

- AENG 494 - Selected Topics in Architectural Engineering (3 cr.)
- ARIC 270-271 - Introduction to Islamic Art and Architecture (3 cr. per semester)
- ARIC 371-372 - Islamic Architecture in Egypt and Syria (3 cr. per semester)
- ARIC 467 - Islamic Architecture in Spain and North Africa (3 cr.)
- CENG 428 - Tall Buildings and Large Span Structures (3 cr.)
- CENG 442 - Construction Project Specifications, Bids, and Contracts (3 cr.)
- CENG 443 - Project Management for Multi-National Environments (3 cr.)
- CENG 446 - Techniques of Planning, Scheduling and Control (3 cr.)
- CENG 447 - Design, Modeling and Simulation of Construction Systems (3 cr.)
- CENG 452 - Structural Systems and Advanced Design (3 cr.)
- CENG 494 - Selected Topics in Construction Engineering (3 cr.)
- EGPT 361 - Art and Architecture of Ancient Egypt I (3 cr.)
- EGPT 362 - Art and Architecture of Ancient Egypt II (3 cr.)
- PHIL 310 - Philosophy and Art (3 cr.)

General Electives (0-3 credits):

Students may take courses of their selection to satisfy total program requirement of 162 credit hours.

Biology (B.S.)

Bachelor of Science

The undergraduate program at AUC offers interested students a liberal education in biological sciences leading to a Bachelor of Science degree giving graduates the broad background necessary in today's job market or preparing them for graduate and professional schools.
Students with a B.Sc. degree in biology are securing positions in the growing fields in industry and in academia. The recent advances in biology have created important new industries in genetic engineering, biomedicine, biotechnology, and pharmacology. Students with ambitions beyond the bachelor level are entering graduate schools (in classical and molecular biology) 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:

Core Curriculum (30-42 credits)

The course selected for the natural science elective may also satisfy a collateral requirement.

Concentration Requirements (46 credits)

- BIOL 104 - The Unity of Life (3 cr. + 1 cr. lab)
- BIOL 105 - Diversity of Life (3 cr. + 1 cr. lab)
- BIOL 204 - Principles of Systematics (3 cr. + 1 cr. lab)
- BIOL 211 - Cell Biology (3 cr. + 1 cr. lab)
- BIOL 214 - General Botany (3 cr. + 1 cr. lab)
- BIOL 215 - Biophysics (4 cr.)
- BIOL 221 - Genetics (3 cr. + 1 cr. lab)
- BIOL 240 - Ecology (3 cr. + 1 cr. lab)
- BIOL 312 - Comparative Anatomy (3 cr. + 1 cr. lab)
- BIOL 315 - Biochemistry (3 cr.)
- BIOL 340 - Quantitative Biology (3 cr. + 1 cr. lab)
- BIOL 495 - Senior Research Thesis (2 cr.)
- BIOL 496 - Seminar in Biology (1 cr.)

Additional Requirements

- Sixteen additional credits from 300- and 400-level courses excluding courses listed above.

Collateral Requirements (25 credits)

- CHEM 105 - General Chemistry I (3 cr.)
- CHEM 106 - General Chemistry II (3 cr.)
- CHEM 115L - General Chemistry Laboratory (1 cr.)
- CHEM 116L - General Chemistry Laboratory (1 cr.)
- CHEM 203 - Organic Chemistry I (3 cr.)
- CHEM 306 - Organic Chemistry II (3 cr.)
- CHEM 310L - Organic Chemistry I Laboratory (1 cr.)
- MACT 112 - Statistical Reasoning (3 cr.)
- MACT 131 - Calculus I (0/3)
- PHYS 111 - Classical Mechanics, Sound and Heat (3 cr.)
- PHYS 123L - General Physics Laboratory I (1 cr.)

General electives (3-15 credits)
Chemistry, with specializations in Clinical Chemistry, Industrial Chemistry, and Food Chemistry (B.S.)

The chemistry program covers the five main branches of chemistry, namely organic, biochemistry, inorganic, physical and analytical. In addition students may specialize in clinical analysis or industrial 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 B.Sc. chemistry major is to train students in both the theory and practice of the major branches of chemistry. Our broad chemistry training prepares students to work in such diverse fields as research and development, teaching, quality control and industrial production. The specializations enhance the career marketability of chemistry graduates.

A student who intends to major in chemistry must complete Chemistry 105 and 115 with a minimum of a B average, or if declaring the major before the completion of these two courses, should have obtained a minimum of 80% in Thanawia Amma science or equivalent in other certificates.

The Bachelor of Science in Chemistry degree is accredited by both the Canadian Society for Chemistry (CSC) and the Supreme Council of Egyptian Universities.

A total of 131 credits is required for the bachelor’s degree in chemistry:

Core Curriculum (30-42 credits)

The science requirements of the core curriculum electives are satisfied by the collateral requirements of the major.

Concentration Requirements (57 credits)

- CHEM 105 - General Chemistry I (3 cr.)
- CHEM 106 - General Chemistry II (3 cr.)
- CHEM 115L - General Chemistry Laboratory (1 cr.)
- CHEM 116L - General Chemistry Laboratory (1 cr.)
- CHEM 203 - Organic Chemistry I (3 cr.)
- CHEM 206 - Analytical Chemistry I (2 cr.)
- CHEM 216L - Volumetric and Gravimetric Analysis (2 cr)
- CHEM 301 - Seminar in Science and Technology (1 cr.)
- CHEM 303 - Thermodynamics (3 cr.)
- CHEM 304 - Physical Chemistry I (3 cr.)
- CHEM 306 - Organic Chemistry II (3 cr.)
- CHEM 309 - Inorganic Chemistry I (3 cr.)
- CHEM 310L - Organic Chemistry I Laboratory (1 cr.)
- CHEM 311 - Analytical Chemistry II (3 cr.)
- CHEM 313L - Thermodynamics Laboratory (1 cr.)
- CHEM 314L - Physical Chemistry I Laboratory (1 cr.)
- CHEM 315 - Biochemistry (3 cr.)
• CHEM 316L - Organic Chemistry II Laboratory (1 cr.)
• CHEM 318L - Inorganic Chemistry Laboratory (1 cr.)
• CHEM 402 - Physical Chemistry II (3 cr.)
• CHEM 403 - Introduction to Quantum Mechanics and Spectroscopy (3 cr.)
• CHEM 406 - Organic Chemistry III (3 cr.)
• CHEM 408 - Inorganic Chemistry II (3 cr.)
• CHEM 412L - Physical Chemistry II Laboratory (1 cr.)
• CHEM 416L - Organic Syntheses (2 cr.)
• CHEM 495 - Senior Thesis and Seminar (3 cr.)

Specialization in Clinical Chemistry (9 credits)

• CHEM 325 - Clinical Chemistry I (3 cr.)
• CHEM 414 - Selected Topics in Chemistry (1-3 cr.)
• CHEM 425 - Clinical Chemistry II (3 cr.)

Specialization in Industrial Chemistry (9 credits)

• CHEM 207 - Chemical Industries (3 cr.)
• CHEM 307 - Production Basics for Chemical Industries (3 cr.)
• CHEM 407 - Food Processing and Preservation (3 cr.)

Specialization in Food Chemistry (9 credits)

• CHEM 220 - Introduction to Food Chemistry (3 cr.)
• CHEM 320 - Food Science and Technology (3 cr.)
• CHEM 407 - Food Processing and Preservation (3 cr.)

Collateral Requirements (29 credits)

• CSCE 106 - Fundamentals of Computer Science (3 cr.)
• MACT 131 - Calculus I (0/3)
• MACT 132 - Calculus II (3 cr.)
• MACT 231 - Calculus III (3 cr.)
• MACT 233 - Differential Equations (3 cr.)
• PHYS 111 - Classical Mechanics, Sound and Heat (3 cr.)
• PHYS 112 - Electricity and Magnetism (3 cr.)
• PHYS 123L - General Physics Laboratory I (1 cr.)
• PHYS 124L - General Physics Laboratory II (1 cr.)
• PHYS 211 - Modern Physics (3 cr.)
• PHYS 214 - Waves and Optics (3 cr.)

Electives (3-15 credits)

Computer Engineering (B.S)
Bachelor of Science in Computer Engineering

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.

A total of 162 credits is required for the bachelor of science degree in computer engineering:

Core Curriculum Requirements (30-42 credits)

- The natural science requirement of the Core Curriculum electives is met within the Engineering Core requirements. (4 credits)
- Three credit hours of the Capstone Stage requirements of the Core Curriculum are met by the Senior Project I and Senior Project II courses. (3 credits)
- All computer engineering students are required to take RHET 321. Students exempted from RHET 101 may use RHET 321 to meet the Writing Program (Rhetoric and Composition) core requirement. All others will use the RHET 321 to meet their general elective requirement.

Engineering Core Requirements (48 credits)

- CHEM 105 - General Chemistry I (3 cr.)
- CHEM 115L - General Chemistry Laboratory (1 cr.)
- ENGR 101 - Introduction to Engineering (1 cr.)
- ENGR 115 - Descriptive Geometry and Engineering Drawing (2 cr.)
- ENGR 212 - Engineering Mechanics I (Statics) (3 cr.)
- ENGR 214 - Engineering Mechanics II (Dynamics) (3 cr.)
- ENGR 313 - Engineering Analysis and Computation I (3 cr.)
- ENGR 345 - Engineering Economy (3 cr.)
- ENGR 364 - Fundamentals of Thermofluids (3 cr.)
- MACT 132 - Calculus II (3 cr.)
- MACT 200 - Discrete Mathematics (3 cr.)
- MACT 231 - Calculus III (3 cr.)
- MACT 233 - Differential Equations (3 cr.)
- MACT 240 - Linear Algebra (3 cr.)
- MACT 317 - Probability and Statistics (3 cr.)
- PHYS 111 - Classical Mechanics, Sound and Heat (3 cr.)
- PHYS 112 - Electricity and Magnetism (3 cr.)
- PHYS 123L - General Physics Laboratory I (1 cr.)
- PHYS 124L - General Physics Laboratory II (1 cr.)

Concentration Requirements (63 credits)

- CSCE 106 - Fundamentals of Computer Science (3 cr.)
- CSCE 110 - Programming Fundamentals (3 cr.)
- CSCE 210 - Data Structures and Algorithms (3 cr.)
- CSCE 230 - Digital Design I (3 cr.)
- CSCE 231 - Computer Organization and Assembly Language Programming (3 cr.)
- CSCE 239L - Digital Design I Lab (1 cr.)
- CSCE 253 - Fundamentals of Database Systems (3 cr.)
- CSCE 321 - Analysis and Design of Algorithms (3 cr.)
- CSCE 330 - Computer Architecture (3 cr.)
- CSCE 332 - Fundamental Microelectronics (3 cr.)
- CSCE 337 - Digital Design II (3 cr.)
- CSCE 339L - Computer Architecture Lab (1 cr.)
- CSCE 341 - Software Engineering (3 cr.)
- CSCE 345 - Operating Systems (3 cr.)
- CSCE 363 - Digital Signal Processing (3 cr.)
- CSCE 432 - Embedded Systems (3 cr.)
- CSCE 435 - Wide Area Networks (3 cr.)
- CSCE 438L - Embedded Systems Lab (1 cr.)
- CSCE 439L - Wide Area Networks Lab (1 cr.)
- CSCE 445 - Fundamentals of Distributed Systems (3 cr.)
- CSCE 490 - Industrial Training (1 cr.)
- CSCE 491 - Senior Project I (1 cr.)
- CSCE 492 - Senior Project II (2 cr.)
- PHYS 215 - Introduction to Electronics (3 cr.)
- PHYS 222L - Electronics lab for Computer Scientists & Computer Engineers (1 cr.)
- MGMT 307 - Management Fundamentals (3 cr.)

Concentration Electives (15 credits)

- CSCE 316 - Programming in Java (3 cr.)
- CSCE 317 - Object Oriented Programming (3 cr.)
- CSCE 325 - Concepts of Programming Languages (3 cr.)
- CSCE 422 - Theory of Computing (3 cr.)
- CSCE 427 - Introduction to Artificial Neural Networks (3 cr.)
- CSCE 436L - Local Area Networks Lab (1 cr.)
- CSCE 437 - Local and Metropolitan Area Networks (3 cr.)
- CSCE 441 - Object-Oriented Analysis and Design (3 cr.)
- CSCE 446 - Computer Security (3 cr.)
- CSCE 447 - Compiler Design (3 cr.)
- CSCE 453 - Database Systems (3 cr.)
- CSCE 455 - Computer Graphics (3 cr.)
- CSCE 456 - Design of Web-based Systems (3 cr.)
- CSCE 456 - Artificial Intelligence (3 cr.)
- CSCE 485 - Selected Topics in Computer Science and Engineering (1-3 cr.)
- CSCE 495 - Selected topics in Computer Science and Engineering (1-3 cr.)
- EENG 413 - Testing of Digital Circuits (3 cr.)
- EENG 494 - Selected topics in Electronics Engineering (3 cr.)

General Electives (0-6 credits)

Computer Science (B.S)

Bachelor of Science in Computer Science

The undergraduate program in Computer Science at AUC is accredited by both the American Accreditation Board for Engineering and Technology (ABET) and the Supreme Council of Egyptian Universities.

Program Objectives
The Computer Science Program prepares graduates who, following graduation, will be able to:

1. Secure competitive positions in multinational and national firms, governmental agencies, and other leading organizations, and/or secure acceptance in high-quality graduate programs,
2. Communicate effectively both orally and in writing,
3. Work effectively in teams,
4. Exhibit ethical and professional behavior.

Program Learning Outcomes
The Computer Science program of AUC enables students to achieve and demonstrate, by the time of graduation:

1. The ability to utilize logic, mathematics, and physical sciences to model and solve computing problems,
2. The ability to think critically, perform scientific analysis and develop solutions for typical computing problems,
3. Proficiency in software design and development, design and analysis of algorithms, theory of programming languages, operating systems, theory of computation and computer architecture,
4. In depth knowledge in advanced and evolving areas in computing,
5. The ability to acquire knowledge and skills independently,
6. The ability to communicate effectively using technical writing and visual and oral presentations,
7. The ability to work within teams and in multi-disciplinary environments,
8. The ability to identify social and ethical impact of computing as well as familiarity with international professional practice standards,
9. An appreciation for literature, arts, and humanities as well as awareness of multicultural context.
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.

A total of 132 credits is required for a bachelor’s degree in computer science:

Core Curriculum (30-42 credits)

- The natural science requirement of the core curriculum electives is met within the Computer Science Core requirements. (4 credits)
- Three credit hours of the Capstone Stage requirements of the Core Curriculum are met by the Senior Project I and Senior Project II courses. (3 credits)

Computer Science Requirements (60 credits):

a.) Concentration Requirements (42 credits)

- CSCE 106 - Fundamentals of Computer Science (3 cr.)
- CSCE 110 - Programming Fundamentals (3 cr.)
- CSCE 210 - Data Structures and Algorithms (3 cr.)
- CSCE 230 - Digital Design I (3 cr.)
- CSCE 231 - Computer Organization and Assembly Language Programming (3 cr.)
- CSCE 239L - Digital Design I Lab (1 cr.)
- CSCE 321 - Analysis and Design of Algorithms (3 cr.)
- CSCE 325 - Concepts of Programming Languages (3 cr.)
- CSCE 330 - Computer Architecture (3 cr.)
- CSCE 339L - Computer Architecture Lab (1 cr.)
- CSCE 341 - Software Engineering (3 cr.)
- CSCE 345 - Operating Systems (3 cr.)
- CSCE 422 - Theory of Computing (3 cr.)
- CSCE 447 - Compiler Design (3 cr.)
- CSCE 490 - Industrial Training (1 cr.)
- CSCE 491 - Senior Project I (1 cr.)
- CSCE 492 - Senior Project II (2 cr.)

b.) Computer Science electives (18 credits)
To be chosen in consultation with the student’s advisor from the following (no more than 9 credits can be chosen among the MACT courses):

- CSCE 253 - Fundamentals of Database Systems (3 cr.)
- CSCE 315 - Programming Language (1-2 cr.)
- CSCE 316 - Programming in Java (3 cr.)
- CSCE 317 - Object Oriented Programming (3 cr.)
- CSCE 333 - Data and Computer Communications (3 cr.)
- CSCE 427 - Introduction to Artificial Neural Networks (3 cr.)
- CSCE 432 - Embedded Systems (3 cr.)
- CSCE 435 - Wide Area Networks (3 cr.)
- CSCE 436L - Local Area Networks Lab (1 cr.)
- CSCE 437 - Local and Metropolitan Area Networks (3 cr.)
- CSCE 438L - Embedded Systems Lab (1 cr.)
- CSCE 439L - Wide Area Networks Lab (1 cr.)
- CSCE 441 - Object-Oriented Analysis and Design (3 cr.)
- CSCE 445 - Fundamentals of Distributed Systems (3 cr.)
- CSCE 446 - Computer Security (3 cr.)
- CSCE 448 - Secure Systems Engineering (3 cr.)
- CSCE 453 - Database Systems (3 cr.)
- CSCE 455 - Computer Graphics (3 cr.)
- CSCE 456 - Design of Web-based Systems (3 cr.)
- CSCE 465 - Artificial Intelligence (3 cr.)
- CSCE 485 - Selected Topics in Computer Science and Engineering (1-3 cr.)
- CSCE 495 - Guided Studies in Computer Science and Engineering (1-3 cr.)
- MACT 304 - Numerical Methods (3 cr.)
- MACT 310 - Operations Research (3 cr.)
- MACT 362 - Formal and Mathematical Logic (3 cr.)
- MACT 403 - Modern Algebra (3 cr.)
- MACT 406 - Stochastic Processes (3 cr.)
- MACT 440 - Graph Theory (3 cr.)

Collateral Requirements (30 credits)

- MACT 132 - Calculus II (3 cr.)
- MACT 200 - Discrete Mathematics (3 cr.)
- MACT 231 - Calculus III (3 cr.)
- MACT 240 - Linear Algebra (3 cr.)
- MACT 317 - Probability and Statistics (3 cr.)
- PHYS 111 - Classical Mechanics, Sound and Heat (3 cr.)
- PHYS 112 - Electricity and Magnetism (3 cr.)
- PHYS 123L - General Physics Laboratory I (1 cr.)
- PHYS 124L - General Physics Laboratory II (1 cr.)
- PHYS 215 - Introduction to Electronics (3 cr.)
- PHYS 222L - Electronics lab for Computer Scientists & Computer Engineers (1 cr.)

And one of the following courses:
MAC 233 - Differential Equations (3 cr.)
MAC 304 - Numerical Methods (3 cr.)
MAC 310 - Operations Research (3 cr.)
MAC 406 - Stochastic Processes (3 cr.)
MAC 440 - Graph Theory (3 cr.)

General Electives (3-15 credits)

Construction Engineering, with concentrations in Construction Materials and Structures, Construction Management and Technology, and Environmental Engineering (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 to: educate students in fundamentals of science and engineering with emphasis on construction engineering applications; introduce students to a broad spectrum of construction engineering topics, with concentration in an area of their choice, to plan for construction operations and to fit in construction organizations; prepare students to cope with and improve on the ever evolving technologies in production, products, and components of the construction industry; train students to communicate effectively, work independently and in teams, and fit in a multi-discipline environment; inspire students to recognize and consider the impact of engineering solutions in a global and societal context with the ability to understand and be sensitive to other cultures; motivate students to engage in life-long learning and develop their ability to pursue graduate studies; develop students who are creative, possess qualities of leadership, and are committed 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) Environmental Engineering. 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 Environmental Engineering concentration better equips students for involvement in civil infrastructure projects, and enables them to contribute to consulting practice in environmental and water resources engineering. To complete a concentration, students must complete two (2) required courses and one elective course in their chosen concentration area, in addition to an elective within the field of construction engineering, and carry out the graduation thesis in their chosen concentration. The concentration shall be indicated in the students’ Diploma.

The Bachelor of Science in Construction Engineering degree is accredited by both the American Accreditation Board for Engineering and Technology (ABET) and the Supreme Council of Egyptian Universities.
Students are admitted to the Construction Engineering Program either upon admission to AUC or after successful completion of criteria courses. High school students with mathematics/science background are accepted depending on their High School grades and the available quota in the Construction Engineering Program. Undeclared and transfer students are admitted to the program upon completing criteria courses in sciences. Students are accepted based on their GPA and on available quota in the department.

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 and Architectural Engineering.

A total of 162 credits is required for the Bachelor of Science Degree in Construction Engineering:

**Core Curriculum (30-42 credits)**

- The natural science requirement of the core curriculum electives is met within the Engineering core requirements. (4 credits)
- Three credit hours of the Capstone Stage requirement of the Core Curriculum is met by the Senior Project I and II courses. (3 credits)

**Engineering Core Requirements (52 credits)**

- CHEM 105 - General Chemistry I (3 cr.)
- CHEM 115L - General Chemistry Laboratory (1 cr.)
- CSCE 106 - Fundamentals of Computer Science (3 cr.)
- ENGR 101 - Introduction to Engineering (1 cr.)
- ENGR 115 - Descriptive Geometry and Engineering Drawing (2 cr.)
- ENGR 212 - Engineering Mechanics I (Statics) (3 cr.)
- ENGR 214 - Engineering Mechanics II (Dynamics) (3 cr.)
- ENGR 229 - Strength and Testing of Materials (4 cr.)
- ENGR 261 - Fundamentals of Fluid Mechanics (3 cr.)
- ENGR 313 - Engineering Analysis and Computation I (3 cr.)
- ENGR 318 - General Electrical Engineering (3 cr.)
- ENGR 345 - Engineering Economy (3 cr.)
- MACT 131 - Calculus I (0/3)
- MACT 132 - Calculus II (3 cr.)
- MACT 231 - Calculus III (3 cr.)
- MACT 233 - Differential Equations (3 cr.)
- MACT 317 - Probability and Statistics (3 cr.)
- PHYS 111 - Classical Mechanics, Sound and Heat (3 cr.)
- PHYS 112 - Electricity and Magnetism (3 cr.)
- PHYS 123L - General Physics Laboratory I (1 cr.)
- PHYS 124L - General Physics Laboratory II (1 cr.)

**Concentration Requirements (62 credits)**

- AENG 321 - Introduction to Architectural Engineering (3 cr.)
- CENG 215 - Drawing for Construction Engineering and Architecture (1 cr.)
- CENG 280 - Construction Surveying (3 cr.)
- CENG 301 - Structural Analysis (4 cr.)
- CENG 307 - Structural Design (4 cr.)
- CENG 311 - Fundamentals of Hydraulic Engineering (3 cr.)
- CENG 323 - Construction Materials and Quality Control I (4 cr.)
- CENG 325 - Mechanical Engineering in Construction (2 cr.)
- CENG 331 - Geology for Engineers (2 cr.)
- CENG 411 - Soil Mechanics (3 cr.)
- CENG 423 - Methods and Equipment for Construction I (3 cr.)
- CENG 424 - Methods and Equipment for Construction II (2 cr.)
- CENG 431 - Transportation Engineering (3 cr.)
- CENG 441 - Introduction to Construction Management and Cost Estimating (3 cr.)
- CENG 442 - Construction Project Specifications, Bids, and Contracts (3 cr.)
- CENG 446 - Techniques of Planning, Scheduling and Control (3 cr.)
- CENG 448 - Financial Management and Accounting for Construction (3 cr.)
- CENG 452 - Structural Systems and Advanced Design (3 cr.)
- CENG 461 - Design and Construction of Foundations and Retaining Structures (3 cr.)
- CENG 471 - Environmental and Sanitary Engineering (3 cr.)
- CENG 490 - Senior Project I (1 cr.)
- CENG 491 - Senior Project II (2 cr.)
- CENG 497 - Practical Training (1 cr.)

Concentration Electives (12 credits):

To complete the requirements of any of the three concentrations, students must complete a set of four courses comprise the following:

- Two concentration core course from the intended area of concentration (Group A) (6 cr.)
- One elective course from a set of courses relevant to the concentration (Group B) (3 cr.)
- One elective course from the elective courses offered by the Department (3cr.)

Student should also carry out the Senior Graduation Project in their selected concentration subfield.

Construction Materials and Structural Concentrations

Group A:

- CENG 453 - Construction Materials and Quality Control II (3 cr.)
- CENG 454 - Structural Mechanics (3 cr.)

Group B:

- CENG 426 - Steel and Concrete Bridges (3 cr.)
- CENG 427 - Prefabricated, Water and Prestressed Concrete Structures (3 cr.)
- CENG 428 - Tall Buildings and Large Span Structures (3 cr.)
- CENG 462 - Applications in Geotechnical Engineering (3 cr.)
- CENG 479 - Assessment, Protection and Repair of Structures (3 cr.)
- CENG 494 - Selected Topics in Construction Engineering (3 cr.)

Construction Management and Technology

Group A:
- CENG 444 - Risk Management and Bidding Strategies (3 cr.)
- CENG 447 - Design, Modeling and Simulation of Construction Systems (3 cr.)

Group B:
- CENG 443 - Project Management for Multi-National Environments (3 cr.)
- CENG 445 - Resource Management (3 cr.)
- CENG 494 - Selected Topics in Construction Engineering (3 cr.)

Environmental Engineering:

Group A:
- CENG 472 - Design of Water Resources Systems (3 cr.)
- CENG 473 - Unit Operations in Environmental Engineering (3 cr.)

Group B:
- CENG 474 - Computer-aided design of environmental and sanitary systems (3 cr.)
- CENG 475 - Solid and Hazardous Wastes Engineering (3 cr.)
- CENG 494 - Selected Topics in Construction Engineering (3 cr.)

Science Elective (3 credits)
Students should take a science elective course of total 3 credits selected from a set of courses accepted by the department

General Electives (0-6 credits):
Students may take courses of their selection to satisfy program requirement of 162 credit hours.

Dual Degree Option BSc/CENG-MPA

Master's Program in Development Practice (MDP) Option
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 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. Those interested in this option are required to complete a summer work assignment for Fall practicum 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. The program prepares students for careers in public service 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 MDP option 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. The following course sequence has been developed for the MDP option, but students should consult their advisor in CENG to ensure that all SSE requirements are met:

**SEMESTER IX**
- CENG 424 Methods & Equipment for Construction II
- xxxx xxx Eng. Concentration 1 elective
- CENG 448 Financial Management and Accounting in Construction (MPA credit)
- CENG xxx Elective (1)
- CENG 431 Intro. to Transportation
- CENG 490 Senior Thesis I (Capstone Core Level I)
- CENG 497 Industrial Training (Practicum)

**SEMESTER X**
- xxxx xxx Engineering Concentration 2
- CENG 567 Construction Leadership and Management/Elective 2
- CENG 491 Senior Thesis II (Capstone Core Level II)
- PPAD 506 Essentials of Public Policy and Administration (MPA credit)
- PPAD 500 Research Methods for Public Policy and Administration (MPA credit)
- xxxx xxx Science elective (from MDP list)
- Summer internship – public/NGO management focus and participation in MDP colloquium (MPA credit through 590)

**SEMESTER XI**
- PPAD 590 Practicum (Capstone Level II) (MPA Credit)
- ENGR 516 Engineering for Sustainable Development (MPA Credit)
- PPAD 570 Global Classroom (MPA Credit)
- xxxx xxx Science elective (from MDP list)
- PPAD 598 Thesis Research Seminar (MPA Credit)

**SEMESTER XII**
- PPAD 514 Human Resource Management for Government and Nonprofit Organizations (MPA Credit)
- PPAD 516 Core Concepts and Applications for Social and Environmental Policy (MPA Credit)
- PPAD 517 NGO Management (MPA Credit)
- PPAD 599 Thesis (MPA Credit)

Summer thesis work, if needed, and participation in MDP colloquium

*xxx indicates elective within the respective program*
Lists of MDP-relevant courses will be provided to students in the program prior to registration for each semester, based on offerings available in the appropriate departments

**Electronics Engineering (B.S)**

**Bachelor of Science**

To achieve the mission of Electronics 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 Engineering (that integrate theory and laboratory wherever possible) cover electromagnetics, circuits, electronics, digital design and communications. Courses in electric machinery, classical control, computer systems, the capstone senior thesis and industrial internship are also required. State-of-the-art electronics engineering elective courses provide seniors and advanced undergraduates the opportunity to develop a thrust in advanced electronics, communication systems and computers.

The specific objectives of the program are to prepare graduates to meet the expectations of employers and to pursue advanced study, if desired.

Electronics Engineering accepts high school students with science/mathematics background. Undeclared students may also be accepted to the program when they finish criteria courses set by the department. Admission to the program is supervised by the department and depends on available places and student's performance record.

A total of 162 credits are required for the bachelor’s degree in Electronics Engineering:

**Core Curriculum Requirements (30-42 credits)**

The capstone requirement will be satisfied by EENG 490 and 491 (Senior Project)

**Engineering Core Requirements (57 credits)**

- CHEM 105 - General Chemistry I (3 cr.)
- CHEM 115L - General Chemistry Laboratory (1 cr.)
- CSCE 106 - Fundamentals of Computer Science (3 cr.)
- CSCE 110 - Programming Fundamentals (3 cr.)
- ENGR 101 - Introduction to Engineering (1 cr.)
- ENGR 115 - Descriptive Geometry and Engineering Drawing (2 cr.)
- ENGR 212 - Engineering Mechanics I (Statics) (3 cr.)
- ENGR 214 - Engineering Mechanics II (Dynamics) (3 cr.)
- ENGR 313 - Engineering Analysis and Computation I (3 cr.)
- ENGR 345 - Engineering Economy (3 cr.)
- ENGR 364 - Fundamentals of Thermofluids (3 cr.)
- MACT 131 - Calculus I (0/3)
- MACT 132 - Calculus II (3 cr.)
- MACT 231 - Calculus III (3 cr.)
- MACT 232 - Calculus IV (3 cr.)
- MACT 233 - Differential Equations (3 cr.)
- MACT 317 - Probability and Statistics (3 cr.)
- MGMT 307 - Management Fundamentals (3 cr.)
- PHYS 111 - Classical Mechanics, Sound and Heat (3 cr.)
- PHYS 112 - Electricity and Magnetism (3 cr.)
- PHYS 123L - General Physics Laboratory I (1 cr.)
- PHYS 124L - General Physics Laboratory II (1 cr.)
- PHYS 214 - Waves and Optics (3 cr.)

Concentration Requirements (54 credits)

(EENG 490 and 491 are counted within the university core)

- EENG 210 - Digital Logic Design (3 cr.)
- EENG 215 - Circuit Analysis I (3 cr.)
- EENG 216 - Circuit Analysis II (3 cr.)
- EENG 218L - Digital Logic Design Lab (1 cr.)
- EENG 219L - Circuit Analysis Lab (1 cr.)
- EENG 315 - Electronics I: Basic Electronic Devices & Circuits (3 cr.)
- EENG 316 - Electronics II: Analog Circuits (3 cr.)
- EENG 318 - VLSI Design (3 cr.)
- EENG 319L - Electronics Lab (1 cr.)
- EENG 320 - Linear Systems Analysis (3 cr.)
- EENG 321 - Automatic Control (3 cr.)
- EENG 341 - Electromagnetic Theory I (3 cr.)
- EENG 352 - Computer Organization and Assembly Language Programming (3 cr.)
- EENG 360 - Power and Machines (3 cr.)
- EENG 420 - Fundamentals of Communications I (3 cr.)
- EENG 421 - Fundamentals of Communications II (3 cr.)
- EENG 432 - Computer Communication Networks (3 cr.)
- EENG 439L - Communications Lab (1 cr.)
- EENG 442 - Electromagnetic Waves (3 cr.)
- EENG 453 - Microcontroller System Design (3 cr.)
- EENG 459L - Microcontroller System Design Lab (1 cr.)
- EENG 490 - Senior Project I (1 cr.)
- EENG 491 - Senior Project II (2 cr.)

The credit hours in EENG 490/491 are not counted among the concentration credit hour requirements as they are counted in the core curriculum credit hour requirements.

- EENG 497 - Industrial Internship (1 cr.)

Concentration Electives (12 credits)

- EENG 404L - Photonics and Optical Communication Laboratory (1 cr.)
- EENG 410 - Solid-State Devices (3 cr.)
- EENG 413 - Testing of Digital Circuits (3 cr.)
- EENG 414 - High Level Digital ASIC Design Using CAD (3 cr.)
- EENG 415 - Integrated Circuit Fabrication: Materials and Processes (3 cr.)
- EENG 416 - Advanced ASIC Design (3 cr.)
- EENG 433 - Telecommunications Systems (3 cr.)
• EENG 434 - Optical Communication Systems (3 cr.)
• EENG 436 - Mobile Communication Systems (3 cr.)
• EENG 447 - Microwave Systems (3 cr.)
• EENG 455 - Computer Architecture (3 cr.)
• EENG 456 - Digital Control Systems (3 cr.)
• EENG 458L - Computer Architecture Lab (1 cr.)
• EENG 480 - Special Problems in Electronics Engineering (1-3 cr.)
• EENG 494 - Selected topics in Electronics Engineering (3 cr.)

General Electives (0-9 credits)

Mathematics, with an option in Statistics & 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.

More information on Mathematics as a professional activity and on career opportunities is available on the department webpage:

http://www.aucegypt.edu/sse/math/alumni/Pages/default.aspx

A total of 130 credits is required for the bachelor’s degree in mathematics. Students may be exempted from the MACT 131 requirement based on high school certificate and score in mathematics or by passing a placement examination.

Core Curriculum (30-42 credits)

The science requirements of the core curriculum electives are satisfied by the collateral requirements of the major.

Concentration Requirements (42 credits)

• CSCE 106 - Fundamentals of Computer Science (3 cr.)
• MACT 131 - Calculus I (0/3)
• MACT 132 - Calculus II (3 cr.)
• MACT 200 - Discrete Mathematics (3 cr.)
• MACT 231 - Calculus III (3 cr.)
• MACT 232 - Calculus IV (3 cr.)
• MACT 233 - Differential Equations (3 cr.)
• MACT 240 - Linear Algebra (3 cr.)
• MACT 307 - Statistical Inference (3 cr.)
• MACT 304 - Numerical Methods (3 cr.)
• MACT 306 - Applied Probability (3 cr.)
• MACT 401 - Complex-Function Theory (3 cr.)
• MACT 403 - Modern Algebra (3 cr.)
MACT 431 - Real Analysis I (3 cr.)

Concentration Electives (21 credits)

To be chosen from the upper level MACT courses in consultation with the advisor. Students majoring in another Science or Engineering program may transfer up to 12 approved credits from their program toward the completion of these 21 credits if double majoring in Mathematics. See the Mathematics and Actuarial Science Department for details.

Collateral Requirements (14 to 16 Credits)

To be chosen among the following:

- BIOL 104 - The Unity of Life (3 cr. + 1 cr. lab)
- BIOL 105 - Diversity of Life (3 cr. + 1 cr. lab)
- CHEM 105 - General Chemistry I (3 cr.)
- CHEM 106 - General Chemistry II (3 cr.)
- CHEM 115L - General Chemistry Laboratory (1 cr.)
- CHEM 116L - General Chemistry Laboratory (1 cr.)
- CSCE 110 - Programming Fundamentals (3 cr.)
- CSCE 210 - Data Structures and Algorithms (3 cr.)
- PHYS 111 - Classical Mechanics, Sound and Heat (3 cr.)
- PHYS 112 - Electricity and Magnetism (3 cr.)
- PHYS 123L - General Physics Laboratory I (1 cr.)
- PHYS 124L - General Physics Laboratory II (1 cr.)
- SCI 105 - Science and Technology of Ancient Egypt (3 cr.)

Electives (9 to 23 credits)

Courses to be chosen in consultation with the adviser, excluding MACT 100, MACT 101.

Statistics and Data Analysis Option

Within the bachelor degree in Mathematics, students may choose the Statistics and Data Analysis Option by taking the following courses:

The 21 credits of concentration electives must include:

- MACT 427 - Applied Regression Methods (3 cr.)
- MACT 429 - Applied Multivariate Analysis (3 cr.)

and a minimum of 9 credits selected from the following:

- MACT 308 - Linear Programming (3 cr.)
- MACT 310 - Operations Research (3 cr.)
- MACT 406 - Stochastic Processes (3 cr.)
- MACT 409 - Selected Topics in Mathematics (3 cr.)
• MACT 410 - Guided Studies in Mathematics (1-3 cr.)
• MACT 412 - Mathematical Modeling (3 cr.)

Mechanical Engineering, with concentrations in Design, Industrial, Materials and Manufacturing, Mechatronics, and Power (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 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 power 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 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 microprocessor as well as manufacturing techniques.

The program is accredited by both the Accreditation Board for Engineering and Technology (ABET) and the Supreme Council of Egyptian Universities.

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.

A student who intends to major in Mechanical Engineering must submit a Major declaration form upon completion of 45 credit hours. A student should declare his/her concentration (s) after completing 80 credit hours and before completing 120 credit hours.

A total of 162 credits is required for the bachelor’s degree in mechanical engineering:

Core Curriculum (30-42 credits)

The science requirement of the core curriculum electives is met within the engineering core requirements. The category 1: Research and Practical Experience (3 credit hours) of the core requirement is covered by MENG 490 (1 credit hour), and MENG 491 (2 credit hours).

Engineering Core Requirements (52 credits)

• CHEM 105 - General Chemistry I (3 cr.)
• CHEM 115L - General Chemistry Laboratory (1 cr.)
• CSCE 106 - Fundamentals of Computer Science (3 cr.)
- ENGR 101 - Introduction to Engineering (1 cr.)
- ENGR 115 - Descriptive Geometry and Engineering Drawing (2 cr.)
- ENGR 212 - Engineering Mechanics I (Statics) (3 cr.)
- ENGR 214 - Engineering Mechanics II (Dynamics) (3 cr.)
- ENGR 229 - Strength and Testing of Materials (4 cr.)
- ENGR 261 - Fundamentals of Fluid Mechanics (3 cr.)
- ENGR 313 - Engineering Analysis and Computation I (3 cr.)
- ENGR 318 - General Electrical Engineering (3 cr.)
- ENGR 345 - Engineering Economy (3 cr.)
- MACT 131 - Calculus I (0/3)
- MACT 132 - Calculus II (3 cr.)
- MACT 231 - Calculus III (3 cr.)
- MACT 233 - Differential Equations (3 cr.)
- MACT 317 - Probability and Statistics (3 cr.)
- PHYS 111 - Classical Mechanics, Sound and Heat (3 cr.)
- PHYS 112 - Electricity and Magnetism (3 cr.)
- PHYS 123L - General Physics Laboratory I (1 cr.)
- PHYS 124L - General Physics Laboratory II (1 cr.)

Concentration Requirements (53 credits)

- MENG 215 - Mechanical Engineering Drawing (1 cr.)
- MENG 327 - Engineering Materials (3 cr.)
- MENG 339 - Fundamentals of Manufacturing Processes (3 cr.)
- MENG 342 - Quality and Process Control (3 cr.)
- MENG 346 - Engineering and Project Management (3 cr.)
- MENG 355 - Mechanics of Materials (3 cr.)
- MENG 356 - Mechanical Design I (3 cr.)
- MENG 361 - Fundamentals of Thermodynamics (3 cr.)
- MENG 362 - Applied Fluid Mechanics (3 cr.)
- MENG 365 - Applied Thermodynamics (3 cr.)
- MENG 372 - Mechanical Systems (3 cr.)
- MENG 375 - System Dynamics (3 cr.)
- MENG 428 - Selection of Materials and Processes for Design (3 cr.)
- MENG 457 - Mechanical Design II (3 cr.)
- MENG 466 - Heat Transfer (4 cr.)
- MENG 490 - Senior Project I (1 cr.)
- MENG 491 - Senior Project II (2 cr.)
- MENG 497 - Industrial Training (1 cr.)
- PHYS 215 - Introduction to Electronics (3 cr.)
- PHYS 221L - Electronics Laboratory I (2 cr.)

Concentration Electives (21 credit hours)

Courses must be selected from at least two of the five available concentrations of courses. A minimum of twelve credits must be taken from one concentration as follows:
Design Concentration:

A minimum of nine credits from courses in group A of the Design concentration and the remaining three credits from courses in either group of the concentration.

Group A:

- MENG 451 - Computer-Aided Design and Prototyping (3 cr.)
- MENG 453 - Finite Element Method and Applications in Design (3 cr.)
- MENG 455 - Design of Engineering Systems (3 cr.)
- MENG 475 - Applied Vibration Measurements, Analysis and Control (3 cr.)
- MENG 476 - Automatic Control Systems (3 cr.)

Group B:

- MENG 413 - Design of Renewable Energy Systems (3 cr.)
- MENG 427 - Failure of Mechanical Components (3 cr.)
- MENG 477 - Robotics: Design, Analysis and Control (3 cr.)
- MENG 458 - Integrated Design (3 cr.)
- MENG 494 - Selected Topics in Design (3 cr.)

Industrial Concentration:

Students are required to complete the six credits from group A courses of the Industrial concentration and six credits from its group B courses.

Group A:

- MENG 341 - Engineering Operations Research (3 cr.)
- MENG 445 - Production and Inventory Control (3 cr.)

Group B:

- MENG 344 - Work Analysis and Design (3 cr.)
- MENG 441 - Decision Support in Engineering Systems (3 cr.)
- MENG 442 - Quality and Reliability Engineering (3 cr.)
- MENG 443 - Systems Simulation (3 cr.)
- MENG 447 - Manufacturing System Automation (3 cr.)
- MENG 448 - Facilities Planning (3 cr.)
- MENG 449 - Maintenance Management Systems (3 cr.)

Materials and Manufacturing Concentration:

A minimum of six credits from group A courses of the Material and Manufacturing concentration and six from its group B courses.
Group A:

- MENG 421 - Ceramics and Composites (3 cr.)
- MENG 425 - Polymers and Composites (3 cr.)
- MENG 426 - Metals, Alloys and Composites (3 cr.)
- MENG 429 - Nanostructured Materials (3 cr.)

Group B:

- MENG 427 - Failure of Mechanical Components (3 cr.)
- MENG 432 - Materials, Processing, and Design (3 cr.)
- MENG 436 - Selected Topics in Materials and Manufacturing (3 cr.)
- MENG 439 - Advanced Manufacturing Processes (3 cr.)

Mechatronics Concentration:

Students are required to complete the nine credits from the courses in group A of the Mechatronics concentration and the remaining three credits from courses in group B.

Group A:

- MENG 476 - Automatic Control Systems (3 cr.)
- MENG 478 - Microcontrollers and Mechatronics systems (3 cr.)
- MENG 479 - Integrated Design of Electromechanical Systems (3 cr.)

Group B:

- EENG 456 - Digital Control Systems (3 cr.)
- MENG 439 - Advanced Manufacturing Processes (3 cr.)
- MENG 447 - Manufacturing System Automation (3 cr.)
- MENG 455 - Design of Engineering Systems (3 cr.)
- MENG 477 - Robotics: Design, Analysis and Control (3 cr.)

Power Concentration

Students are required to complete the nine credits from the courses in group A of the Power concentration and the remaining three credits from courses in group B.

Group A:

- MENG 411 - Turbo-Machinery (3 cr.)
- MENG 412 - Power Plant Technology (3 cr.)
- MENG 413 - Design of Renewable Energy Systems (3 cr.)

Group B:
- MENG 415 - Internal Combustion Engines (3 cr.)
- MENG 416 - Design of Mechanical Systems in Building (3 cr.)
- MENG 417 - Refrigeration and Air-conditioning (3 cr.)
- MENG 455 - Design of Engineering Systems (3 cr.)

Notes:

In addition, a minimum of six credits must be taken from another area of concentration.

Pending approval of department and relevance of topic, only one of the concentration electives may be substituted for by a MENG 492 course.

Students opting for more than one concentration will take a minimum of twenty four credits, such that the minimum requirements of each area of concentration are satisfied. Common courses may be double-counted.

General Electives (0-9 credits)

Petroleum Engineering, with concentration in Energy Resources (B.S.)

Bachelor of Science

The program provides high quality education for regional and international students with the capability of managing diversified operations in the petroleum, gas and energy related professions. Graduates are expected to satisfy the demanding market needs and will be able to compete for positions worldwide in one of the highest paying engineering professions. In addition to fostering creative thinking and providing motivation for an ongoing learning experience, the program is intended to develop the capabilities of students to work independently, adapt in multinational environment and acquire leadership qualities.

Students will be admitted to the program either through the AUC admissions office (gate admissions), after satisfying the general admission requirements and grade requirements in mathematics and sciences as declared by the department, or as undeclared and transfer students based on their performance record after successful completion of the criteria courses. Students are advised to consult with the department to ensure that admission criteria have been successfully met. A total of 162 credits must be successfully completed to be awarded a Bachelor of Science in Petroleum Engineering.

In addition to the B.Sc. degree in Petroleum Engineering, students will be granted a concentration in Energy Resources after completion of 9 credits from the courses listed under concentration electives.

Core curriculum requirements (30-42 credits)

Three credit hours of the capstone requirements will be satisfied by PENG 490 and 491 senior theses.

Engineering core requirements (48 credits)
- CHEM 105 - General Chemistry I (3 cr.)
- CHEM 115L - General Chemistry Laboratory (1 cr.)
- CHEM 203 - Organic Chemistry I (3 cr.)
- CSCE 106 - Fundamentals of Computer Science (3 cr.)
- ENGR 101 - Introduction to Engineering (1 cr.)
- ENGR 115 - Descriptive Geometry and Engineering Drawing (2 cr.)
- ENGR 212 - Engineering Mechanics I (Statics) (3 cr.)
- ENGR 214 - Engineering Mechanics II (Dynamics) (3 cr.)
- ENGR 261 - Fundamentals of Fluid Mechanics (3 cr.)
- ENGR 313 - Engineering Analysis and Computation I (3 cr.)
- ENGR 345 - Engineering Economy (3 cr.)
- MACT 131 - Calculus I (0/3)
- MACT 132 - Calculus II (3 cr.)
- MACT 231 - Calculus III (3 cr.)
- MACT 233 - Differential Equations (3 cr.)
- MACT 317 - Probability and Statistics (3 cr.)
- PHYS 111 - Classical Mechanics, Sound and Heat (3 cr.)
- PHYS 112 - Electricity and Magnetism (3 cr.)
- PHYS 123L - General Physics Laboratory I (1 cr.)
- PHYS 124L - General Physics Laboratory II (1 cr.)

Concentration requirements (75 credits)

- PENG 200 - Introduction to Petroleum Geology (2 cr.)
- PENG 218 - Electrical Engineering (2 cr.)
- PENG 219 - Fundamentals of Surveying (1 cr.)
- PENG 227 - Materials Engineering (3cr.)
- PENG 301 - Petroleum Geology and Exploration (3cr.)
- PENG 302 - Fluid and Rock Properties (3 cr.)
- PENG 303 - Fluid and Rock Lab (1 cr.)
- PENG 311 - Drilling Engineering I (3 cr.)
- PENG 313 - Drilling Engineering I Lab (1 cr.)
- PENG 320 - Well Logging (2cr. + 1cr.)
- PENG 322 - Oil and Gas Production (2cr. + 1cr. lab)
- PENG 331 - Reservoir Engineering and Recovery (3 cr.)
- PENG 332 - Well Completion and Workover (3 cr.)
- PENG 333 - Reservoir Simulation and Well Testing (3 cr.)
- PENG 334 - Reservoir Simulation and Well Testing lab (1 cr.)
- PENG 351 - Natural Gas Engineering (3 cr.)
- PENG 361 - Thermodynamics (3cr.)
- PENG 363 - Heat Transfer (3cr.)
- PENG 373 - Principles of Energy Engineering (3 cr.)
- PENG 374 - Corrosion and Oxidation Protection (3cr.)
- PENG 375 - Hydrogen and Fuel cells (3 cr.)
- PENG 411 - Drilling Engineering II (3 cr.)
- PENG 412 - Enhanced Oil Recovery (3 cr.)
- PENG 451 - Petroleum and Gas Transmission and Storage (3 cr.)
• PENG 461 - Reservoir Economics, Management, & Risk Analysis (3 cr.)
• PENG 462 - Renewable and Alternative Energy (3 cr.)
• PENG 471 - Reservoir Simulation and Modeling (3 cr.)
• PENG 490 - Senior Project I (1 cr.)
• PENG 491 - Senior Project II (2 cr.)
• PENG 497 - Industrial Training (1 cr.)

Concentration Electives (6 credits)

• PENG 463 - Energy conversion and materials (3 cr.)
• PENG 470 - Environmental Protection & Chemical Pollution (3 cr.)
• PENG 472 - Ground Water Hydrology and Contamination (3 cr.)
• PENG 474 - Energy and the Environment (3 cr.)
• PENG 475 - Greenhouse Technology and Emission Reduction (3 cr.)
• PENG 476 - Principles of Nuclear Engineering (3 cr.)
• PENG 494 - Selected Topics in Petroleum and Energy Engineering (3 cr.)

Concentration in Energy Resources (9 credits)

A minimum of 9 credit hours from the following courses that are also listed under concentration electives must be completed.

• PENG 463 - Energy conversion and materials (3 cr.)
• PENG 470 - Environmental Protection & Chemical Pollution (3 cr.)
• PENG 474 - Energy and the Environment (3 cr.)
• PENG 475 - Greenhouse Technology and Emission Reduction (3 cr.)
• PENG 476 - Principles of Nuclear Engineering (3 cr.)
• PENG 494 - Selected Topics in Petroleum and Energy Engineering (3 cr.)

Prerequisites:

Completion of PENG courses 218, 227, 329, 361, 363, 375, 462, and 463.

Physics, with an option in Instrumentation (B.S.)

Bachelor of Science

The undergraduate program in physics is designed to give students a thorough but flexible training in the fundamental aspects of classical and modern physics. Lecture material is reinforced and complemented by closely integrated laboratory work. The varied course offerings provide several options from which students may choose according to their interests and abilities.

A student who intends to major in physics must complete successfully PHYS 111, PHYS 123 L, PHYS 112, PHYS 124 L, MACT 131 and MACT 132 with a minimum GPA of 2.5 in these courses. To change from any other major to physics the student should have completed the above courses, in addition to an overall and concentration GPA's not less than 2.5.
A total of 132 credit hours is required for the bachelor’s degree in physics distributed as follows:

**Core Curriculum (30-42 credits)**

The science requirement of the core curriculum electives is met within the physics concentration requirements.

**Concentration Requirements (46 credits)**

- PHYS 111 - Classical Mechanics, Sound and Heat (3 cr.)
- PHYS 112 - Electricity and Magnetism (3 cr.)
- PHYS 123L - General Physics Laboratory I (1 cr.)
- PHYS 124L - General Physics Laboratory II (1 cr.)
- PHYS 204L - Optics Laboratory (1 cr.)
- PHYS 211 - Modern Physics (3 cr.)
- PHYS 212 - Quantum Mechanics I (3 cr.)
- PHYS 214 - Waves and Optics (3 cr.)
- PHYS 215 - Introduction to Electronics (3 cr.)
- PHYS 221L - Electronics Laboratory I (2 cr.)
- PHYS 279 - Computational Methods in Physics (2 cr. + 1 cr.)
- PHYS 311 - Thermodynamics and Statistical Mechanics (3 cr.)
- PHYS 312 - Theoretical Mechanics (3 cr.)
- PHYS 316 - Electromagnetic Theory (3 cr.)
- PHYS 321L - Nuclear Physics Lab (1 cr.)
- PHYS 322L - Solid-State Physics Lab (2 cr.)
- PHYS 323L - Semiconductor Technology Lab (2 cr.)
- PHYS 325 - Introduction to Solid-State Physics (3 cr.)
- PHYS 421 - Quantum Mechanics II (3 cr.)

**Concentration electives (18 credits):**

To be taken from the 300 or 400 level courses in physics and mathematics. 500-level courses may be used towards the B.Sc. degree, upon the approval of the academic advisor.

**General Electives (0-12 credits)**

**Collateral Requirements (23 credits)**

- CHEM 105 - General Chemistry I (3 cr.)
- CHEM 106 - General Chemistry II (3 cr.)
- CHEM 115L - General Chemistry Laboratory (1 cr.)
- CHEM 116L - General Chemistry Laboratory (1 cr.)
- CSCE 106 - Fundamentals of Computer Science (3 cr.)
- MACT 131 - Calculus I (0/3)
- MACT 132 - Calculus II (3 cr.)
- MACT 231 - Calculus III (3 cr.)
- MACT 232 - Calculus IV (3 cr.)
• MACT 233 - Differential Equations (3 cr.)

Thesis Requirement (3 credits)

• PHYS 401 - Senior Thesis and Seminar (3 cr.)

Notes:

In special cases, and with advisor's approval, another 400-level course may be substituted for the Senior Thesis and Seminar.

Instrumentation option (21 - 27 credits)

Students may choose the instrumentation option within the bachelor's degree program by following the required sequence of courses listed below. While retaining the fundamentals of the conventional degree in physics, this option prepares students to meet the needs of an expanding and increasingly vital area of sciences and engineering.

The required courses for the Instrumentation option are:

• PHYS 305L - Modern Sensors Laboratory (1 cr.)
• PHYS 307L - Electronics Laboratory II (1 cr.)
• PHYS 309L - Digital Logic Design Laboratory (1 cr.)
• PHYS 315 - Modern Sensors (3 cr.)
• PHYS 319 - Digital Logic Design (3 cr.)
• PHYS 327 - Operational Amplifiers and Applications (3 cr.)
• PHYS 407L - Process Instrumentation and Digital Control Laboratory (1 cr.)
• PHYS 417 - Process Instrumentation (3 cr.)

And 5-11 credits selected from the following:

• CSCE 231 - Computer Organization and Assembly Language Programming (3 cr.)
• PHYS 314 - Optical Systems and Instruments (3 cr.)
• PHYS 318 - Instrumentation Systems and Control (3 cr.)
• PHYS 333 - Introduction to Applied Geophysics (3 cr.)
• PHYS 404L - Photonics and Optical Communication Laboratory (1 cr.)
• PHYS 409L - Computerized Instrumentation Laboratory (1 cr.)
• PHYS 413 - Nuclear Physics (3 cr.)
• PHYS 414 - Photonics (3 cr.)
• PHYS 415 - Selected Topics in Physics (3 cr.)
• PHYS 416 - Experimental Methods in Undergraduate Research (3 cr.)
• PHYS 426 - Industrial Physics (3 cr.)
• PHYS 427 - Analytical Techniques in Instrumentation (3 cr: 2 cr. lecture, 1 cr. lab)
• PHYS 429 - Computerized Instrumentation (3 cr.)

Concentration Electives (0-6 credits)
Minors

Accounting Minor

A limited number of students are accepted into the accounting minor. Students who have completed ACCT 201 and ACCT 202 and who meet requirements including the GPA as determined by the department will be permitted to declare a minor and should plan their minor with their academic advisor with the approval of the department.

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

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 201 - Financial Accounting (3 cr.)
- ACCT 202 - Managerial Accounting (3 cr.)

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

- ACCT 301 - Intermediate Accounting I (3 cr.)
- ACCT 302 - Intermediate Accounting II (3 cr.)
- ACCT 303 - Advanced Accounting (3 cr.)
- ACCT 304 - Cost Accounting (3 cr.)
- ACCT 305 - Auditing (3 cr.)
- ACCT 306 - Principles of Taxation (3 cr.)

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. The program is staffed and supervised by members of several departments. Students are required to take ECLT/HIST 209 (Introduction to American Studies), at least one other American history course, and three other courses as electives from among courses offered in American literature, history, and philosophy, or from among courses on American issues and topics in anthropology, art, music, film, theater, history, sociology, psychology, and political science. Courses listed under the heading "Selected Topics" may be included if the focus is the United States and the Americas.

Requirements:

- ECLT 209 - Introduction to American Studies (3 cr.)

And at least four of the following:

- ANTH 384 - Peoples and Cultures of Latin America (3 cr.)
• ANTH 390 - Selected People and Culture Areas (3 cr.)
  See footnote one.
• ANTH 400 - Selected Topics in Anthropology (3 cr.)
  See footnote one.
• ARTV 370 - Selected Topics in Art (3 cr.)
  See footnote one.
• ECLT 308 - Modern European and American Literature (3 cr.)
• ECLT 310 - American Literature to 1900 (3 cr.)
  /AMST 310
• ECLT 311 - Modern American Literature (3 cr.)
  /AMST 311
• ECLT 344 - Literature and Philosophy (3 cr.)
  See footnote one.
• ECLT 347 - Selected Topics (3 cr.)
  See footnote one.
• ECLT 540 - Readings in American Literature (3 cr.)
  See footnote two
• ECLT 545-546 - Selected Topics (3 cr.)
  See footnote two
• FILM 370 - Selected Topics in Film (3 cr.)
  See footnote one and footnote two.
• HIST 201 - History of American Civilization to the Nineteenth Century (3 cr.)
• HIST 202 - History of Modern American Civilization (3 cr.)
• HIST 309 - History of American Political Thought (3 cr.)
• HIST 401 - Selected Topics in the History of the United States (3 cr.)
• MUSC 370 - Selected Topics in Music (3 cr.)
  See footnote one.
• PHIL 356 - American Philosophy (3 cr.)
• POLS 303 - American Government and Politics (3 cr.)
• POLS 415 - U.S. Foreign Policy (3 cr.)
• POLS 430 - Seminar: Special Topics in Political Science (3 cr.)
  See footnote one.
• POLS 473 - Special Topics in Public Law (3 cr.)
  See footnote one.
• SOC 307 - Social Class and Inequality (3 cr.)
  See footnote one.
• SOC 321 - The Urban Experience (3 cr.)
  See footnote one.
• SOC 332 - Social Constructions of Difference: Race, Ethnicity, and Class (3 cr.)
  See footnote one.
• SOC 400 - Selected Topics in Sociology (3 cr.)
  See footnote one.
  See footnote one.
• SOC 402 - Independent Study (3 cr.)
  See footnote one.
• SOC 405 - Sociology of Work (3 cr.)
  See footnote one.
• SOC 408 - Criminology (3 cr.)
  See footnote one.
• THTR 370 - Selected Topics in Theatre (3 cr.)
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.

Anthropology Minor

The minor in Anthropology provides students with a basic knowledge of anthropological method and theory from a cross-cultural perspective on selected aspects of the world's cultures and societies.

Fifteen credits are required for the minor in Anthropology: ANTH 202, 380 and three additional anthropology courses of which at least one must be at the 400-level.

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.

Requirements (15 credits):

- MACT 112 - Statistical Reasoning (3 cr.)
- MACT 427 - Applied Regression Methods (3 cr.)

and either

- MACT 306 - Applied Probability (3 cr.)
  and
- MACT 307 - Statistical Inference (3 cr.)

or

- MACT 317 - Probability and Statistics (3 cr.)

In addition to 3-6 credits from:

- MACT 406 - Stochastic Processes (3 cr.)
- MACT 429 - Applied Multivariate Analysis (3 cr.)
Arab and Islamic Civilizations Minor

Requirements (15 credits):

Any five courses offered by the department (ARIC).

Arabic Literature Minor

Program Requirements (15 credits):

5 courses in Arabic or English from the following, depending on the student’s area of interest:

- ARIC 305 - Arabic Literature and Gender (3 cr.)
- ARIC 306 - Arabic Literature and Film (3 cr.)
- ARIC 307 - The Writer and the State (3 cr.)
- ARIC 308 - Colloquial and Folk Literature (3 cr.)
- ARIC 309 - Selected Themes and Topics in Arabic Literature (3 cr.)
- ARIC 310 - Selected Themes and Topics in Arabic Literature in Translation (3 cr.)
- ARIC 314 - The Arabic Novel (3 cr.)
- ARIC 315 - Arabic Drama (3 cr.)
- ARIC 316 - The Arabic Short Story (3 cr.)
- ARIC 401 - Senior Seminar in Arabic Texts (3 cr.)
- ARIC 402 - Senior Seminar in Arabic Literature in Translation (3 cr.)
- ARIC 403 - Arabic Literary Criticism (3 cr.)

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 105 - General Chemistry I (3 cr.)
- CHEM 106 - General Chemistry II (3 cr.)
- CHEM 115L - General Chemistry Laboratory (1 cr.)
- CHEM 116L - General Chemistry Laboratory (1 cr.)
- CHEM 312 - Archaeological Chemistry I (3 cr.)
- CHEM 410 - Archaeological Chemistry II (3 cr.)

And one of the following courses (3 cr.):
• CHEM 103 - Chemistry and Society (3 cr.)
• SCI 240 - Chemistry, Art and Archaeology (3 cr.)

**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. The following requirements must be satisfied for joining and continuing in 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 (ENGR 115, AENG 251 and AENG 273) to continue in the minor.

The Minor requires completion of 17 credit hours. These are:

**Basic Architectural Design Requirement (7 cr. hours):**

All of the following courses:

• AENG 251 - Introduction to Architectural Design (3 cr.)
• AENG 273 - Digital Representation Tools for Architects (2 cr.)
• ENGR 115 - Descriptive Geometry and Engineering Drawing (2 cr.)

**Background Humanities and Fine Arts Elective Requirement (3 cr. hours):**

One of the following courses:

• AENG 222 - Architecture: Art or Engineering (3 cr.)
• ARIC 270-271 - Introduction to Islamic Art and Architecture (3 cr. per semester)
• ARTV 222 - Architecture: Art or Engineering (3 cr.)
• ARTV 314 - Modern and Contemporary Architecture (3 cr.)
• EGPT 361 - Art and Architecture of Ancient Egypt I (3 cr.)
• EGPT 362 - Art and Architecture of Ancient Egypt II (3 cr.)

**Main Architectural Design Requirement (7 cr. hours)**
All of the following courses:

- AENG 351 - Architectural Design Studio I (4 cr.)
- AENG 420 - Design of Interior Spaces (3 cr.)

Notes:

Construction Engineering students may not count the main architectural design courses (AENG 351 & AENG 420) for both the Construction Engineering Major and the Architectural Design Minor.

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: BIOL 104 (The Unity of Life), 105 (The Diversity of Life), and three additional 4-credit 200, 300, or 400 level BIOL courses.

Twenty credits are required for a minor in Biology:

Choose one of the following and three additional 4-credit 200, 300, or 400 level BIOL courses.

- BIOL 104 - The Unity of Life (3 cr. + 1 cr. lab)
- BIOL 105 - Diversity of Life (3 cr. + 1 cr. lab)

Business Administration Minor

The minor in business administration is designed to introduce students to the basic concepts, models and techniques of the discipline. Students who have completed the minor requirements and who meet the GPA requirement should apply for the minor in their senior year. Students who minor in business administration are not permitted to have a minor in accounting.

Requirements

The minor requires completion of six courses (18 credit hours) as follows:

1.

- ACCT 201 - Financial Accounting (3 cr.)

2.

- MGMT 307 - Management Fundamentals (3 cr.)

3.
• ECON 201 - Introduction to Macroeconomics (3 cr.)
  or
• ECON 202 - Introduction to Microeconomics (3 cr.)
  or
• ENGR 345 - Engineering Economy (3 cr.)

4.

• MKTG 302 - Principles of Marketing (3 cr.)

5.

• FINC 303 - Business Finance I (3 cr.)

6.

In addition, choose one additional course from the following business areas (ACCT, FINC, INTB, MGMT, MKTG, MOIS, OPMG).

**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 105 - General Chemistry I (3 cr.)
• CHEM 106 - General Chemistry II (3 cr.)
• CHEM 115L - General Chemistry Laboratory (1 cr.)
• CHEM 116L - General Chemistry Laboratory (1 cr.)

**Additional Requirements**

• 8-10 credits of higher level courses in chemistry to be chosen in consultation with a faculty advisor.

**Classical/Medieval Islamic History Minor**

**Requirements (15 credits):**

5 courses from the following, depending on the student’s area of interest:

• ARIC 320 - Introduction to Sufism (3 cr.)
• ARIC 321 - Social and Cultural History of the Middle East, 600-1800 A.D. (3 cr.)
• ARIC 322 - Land, Trade and Power: a History of Economic Relations in the Middle East, 600-1800 A.D. (3 cr.)
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.

A limited number of students are accepted into the Community Development minor. Students must have completed ANTH 202 or PSYC 201 or SOC 201 and meet requirements, including the GPA, as determined by the department to declare a minor. Academic Advising will be provided to minors through the Anthropology, Sociology and Psychology units.

Course requirements: 15 credits, including the following:

**Required Courses (9 credits)**

- PSYC 240 - Introduction to Community Development (3 cr.)
- PSYC 340 - Participatory Action Research in Community Settings (3 cr.)
  AND
  SOC/ANTH/PSYC 440 - Practicum in Community Development (3 cr.)

**Electives (6 credits) two of the following:**

- ANTH 303 - Social Movements (3 cr.)
- ANTH 370 - Environmental Issues in Egypt (3 cr.)
- ANTH 372 - Applied Anthropology (3 cr.)
- ANTH 380 - Fieldwork Methods (3 cr.)
- ANTH 450 - Third World Development (3 cr.)
- ANTH 460 - Development Studies Seminar (3 cr.)
- SOC 203 - Social Problems of the Middle East (3 cr.)
- SOC 307 - Social Class and Inequality (3 cr.)
- SOC 435 - Gender and Power in Development (3 cr.)
- SOC 304 - Development Agencies (3 cr.)
- PSYC 301 - Social Psychology (3 cr.)
- PSYC 330 - Community Psychology (3 cr.)
- PSYC 430 - Advanced community psychology: Applied research and service (3 cr.)

**Comparative Religion Minor**

The minor in Comparative Religion is designed to allow students with an interest in religious studies to pursue their research by choosing from a selection of courses on various aspects of the subject both past and present.

**Requirements (15 credits):**

- CREL 210 - Religions of the World (3 cr.)

Any two other CREL courses (6 credits)

Either two further CREL courses or any two of the following courses (6 credits):

- ANTH 422 - Religion in a Global World (3 cr.)
- ARIC 320 - Introduction to Sufism (3 cr.)
- ARIC 324 - Non-Muslim Communities in the Muslim World (3 cr.)
- ARIC 335 - An Introduction to Islam (3 cr.)
- EGPT 440 - Ancient Egyptian Religion and Ethics (3 cr.)
- EGPT 445 - Selected Topics in Coptic Studies (3 cr.)
- PHIL 226 - Philosophy of Religion (3 cr.)

**Notes:**

With the approval of the CREL advisor, other 300 or 400 level courses on Islam from ARIC, HIST, POLS or PHIL may be substituted for the non-CREL courses listed above.

**Computer Science Minor**

A minor in Computer Science provides students from other disciplines with basic knowledge and practice in computing that would enable them to develop simple or advanced applications in their field of study.

A minor in Computer Science is comprised of 15 credits. Students select the sequence of computer science courses, with the help of their advisor, according to their needs and interests. The choice should include at least 9 credits out of the Computer Science concentration requirements and should not include CSCE 315. Students are required to plan their courses such that no more than six Computer Science credits are taken in one semester.

**Recommended Options for Minor**

**Theoretical Aspects in Computer Science:**

Recommended for Math major students:
• CSCE 106 - Fundamentals of Computer Science (3 cr.)
• CSCE 110 - Programming Fundamentals (3 cr.)
• CSCE 210 - Data Structures and Algorithms (3 cr.)
• CSCE 321 - Analysis and Design of Algorithms (3 cr.)
• CSCE 422 - Theory of Computing (3 cr.)

Data Base Systems:

Recommended for Business, Economics & Engineering majors students:

• CSCE 106 - Fundamentals of Computer Science (3 cr.)
• CSCE 110 - Programming Fundamentals (3 cr.)
• CSCE 210 - Data Structures and Algorithms (3 cr.)
• CSCE 253 - Fundamentals of Database Systems (3 cr.)
• CSCE 453 - Database Systems (3 cr.)

Computer Systems:

Recommended for Physics, Mechanical & Construction majors students but not permitted for Electronics Engineering major:

• CSCE 106 - Fundamentals of Computer Science (3 cr.)
• CSCE 110 - Programming Fundamentals (3 cr.)
• CSCE 210 - Data Structures and Algorithms (3 cr.)
• CSCE 230 - Digital Design I (3 cr.)
• CSCE 231 - Computer Organization and Assembly Language Programming (3 cr.)

Embedded Systems:

Recommended for Electronics Engineering major students only:

• CSCE 106 - Fundamentals of Computer Science (3 cr.)
• CSCE 110 - Programming Fundamentals (3 cr.)
• CSCE 210 - Data Structures and Algorithms (3 cr.)
• CSCE 345 - Operating Systems (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 SAPE Department.

Requirements (15 credits):
• EGPT 400 - Introduction to Coptic (3 cr.)

Any two of the following:

• EGPT 342 - History of Egypt in the Graeco-Roman Era (3 cr.)
• EGPT 445 - Selected Topics in Coptic Studies (3 cr.)

Any two of the following:

• ARIC 324 - Non-Muslim Communities in the Muslim World (3 cr.)
• ARIC 344 - Caliphs and Sultans in the Age of Crusades and Mongols (3 cr.)
• ARIC 370 - Pre-Islamic Influences on Islamic Art and Architecture (3 cr.)

Notes:

Appropriate courses from other departments may be substituted.

**Design for Advertising Minor**

**Requirements (15 credits):**

Choose FIVE from the following:

• DSGN 200 - Analogue and Digital Practices (3 cr.)
• DSGN 213 - Introduction to Visual Cultures (3 cr.)
• DSGN 317 - History of Advertising in the Arab World (3 cr.)
• DSGN 360 - Photography for Designers (3 cr.)
• DSGN 365 - Advertising and Branding (3 cr.)
• JRMC 315 - Introduction to Advertising (3 cr.)
• JRMC 330 - Advanced Photography (3 cr.)

**Development Studies Minor**

*Advisor: H. Sabea (Anthropology)*

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, Anthropology, Psychology, and Egyptology 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, 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 320 - States, Capital and Rural Lives (3 cr.)
- ANTH 321 - The Urban Experience (3 cr.)
- ANTH 360 - Gender, Power and Social Change (3 cr.)
- ANTH 372 - Applied Anthropology (3 cr.)
- ANTH 450 - Third World Development (3 cr.)
- ANTH 462 - Economic Anthropology (3 cr.)
- ANTH 492 - Political Anthropology (3 cr.)
- ECON 224 - Economic History (3 cr.)
- ECON 310 - Public Finance (3 cr.)
- ECON 312 - Economic Development (3 cr.)
- POLS 310 - Introduction to Development (3 cr.)
- POLS 323 - Comparative Government and Politics: Developing Systems (3 cr.)
- POLS 460 - Development Studies Seminar (3 cr.)
- SOC 303 - Social Movements (3 cr.)
- SOC 321 - The Urban Experience (3 cr.)
- SOC 322 - Rural Sociology (3 cr.)
- SOC 323 - Fundamentals of Population Studies (3 cr.)
- SOC 431 - Political Sociology (3 cr.)
- SOC 435 - Gender and Power in Development (3 cr.)
- SOC 450 - Third World Development (3 cr.)

Approved Area-Studies Courses:

- ANTH 312 - Peoples and Cultures of the Middle East and North Africa (3 cr.)
- ANTH 382 - Peoples and Cultures of Sub-Saharan Africa (3 cr.)
- ANTH 384 - Peoples and Cultures of Latin America (3 cr.)
- ANTH 386 - Peoples and Cultures of Asia (3 cr.)
- ECON 215 - Economic History of the Modern Middle East (3 cr.)
- ECON 414 - Economics of Egypt (3 cr.)
- ECON 415 - Seminar on Economic Development in the Middle East (3 cr.)
- POLS 206 - Europe in International Politics in the Twentieth Century (3 cr.)
- POLS 308 - Comparative Politics of the Middle East (3 cr.)
- POLS 324 - Comparative Government and Politics in Contemporary Eastern Europe and Russia (3 cr.)
- POLS 354 - Political and Social Thought in the Modern Arab World (3 cr.)
- POLS 420 - Issues in Middle East Politics (3 cr.)
- POLS 439 - Government and Politics in the Modern Caucasus and Central Asia (3 cr.)
- SOC 203 - 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:

- SOC 400 - Selected Topics in Sociology (3 cr.)

**Digital Media Minor**

**Requirements (15 credits):**

Choose FIVE from the following:

- DSGN 200 - Analogue and Digital Practices (3 cr.)
- DSGN 213 - Introduction to Visual Cultures (3 cr.)
- DSGN 250 - Digital Practice I (3 cr.)
- DSGN 313 - Web Design (3 cr.)
- DSGN 335 - Animation (3 cr.)
- DSGN 350 - Digital Practices II (3 cr.)

**Economics Minor**

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

**Requirements (15 credits):**

- ECON 201 - Introduction to Macroeconomics (3 cr.)
- ECON 202 - Introduction to Microeconomics (3 cr.)

**Additional Requirements**

- Three other economics courses, with a minimum of two 300-level courses or above.

**Courses not included**

- ECON 216 - Mathematics for Economists I (3 cr.)
- ECON 218 - Statistics for Economists (3 cr.)
- ECON 316 - Mathematics for Economists II (3 cr.)
- ECON 318 - Introduction to Econometrics (3 cr.)

With the approval of the instructor and the unit head, students may substitute other economics courses for credit towards the minor.

**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):

All three of the following:

- EGPT 343 - History of Ancient Egypt I: Pre-Dynastic Through Middle Kingdom Egypt (3 cr.)
- EGPT 344 - History of Ancient Egypt II: Middle Kingdom through Ptolemaic Egypt (3 cr.)
- EGPT 304 - Culture and Society of Ancient Egypt (3 cr.)

Two from among the following:

- EGPT 250 - Ancient Egyptian Literature in Translation (3 cr.)
- EGPT 253 - Hieroglyphics I (3 cr.)
- EGPT 254 - Hieroglyphics II (3 cr.)
- EGPT 361 - Art and Architecture of Ancient Egypt I (3 cr.)
- EGPT 362 - Art and Architecture of Ancient Egypt II (3 cr.)
- EGPT 440 - Ancient Egyptian Religion and Ethics (3 cr.)

Electronics Minor

Professors: A. Shaarawi (Dean of Graduate Studies), F. Assabghy, S. Sedky (Associate Dean of Graduate Studies and Director of Science & Technology Research Center)
Associate Professor: E. Soliman

The aim of the minor in electronics is to provide students majoring in chemistry, mechanical engineering, computer science, and mathematics 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.

Requirements 17 credit hours of electronics minor should cover:

- PHYS 215 - Introduction to Electronics (3 cr.)
- PHYS 221L - Electronics Laboratory I (2 cr.)
- PHYS 309L - Digital Logic Design Laboratory (1 cr.)
- PHYS 319 - Digital Logic Design (3 cr.)

A minimum of 8 credits selected from the following:

- CSCE 330 - Computer Architecture (3 cr.)
- CSCE 339L - Computer Architecture Lab (1 cr.)
- EENG 321 - Automatic Control (3 cr.)
- EENG 413 - Testing of Digital Circuits (3 cr.)
- PHYS 305L - Modern Sensors Laboratory (1 cr.)
- PHYS 307L - Electronics Laboratory II (1 cr.)
- PHYS 315 - Modern Sensors (3 cr.)
- PHYS 318 - Instrumentation Systems and Control (3 cr.)
- PHYS 323L - Semiconductor Technology Lab (2 cr.)
- PHYS 327 - Operational Amplifiers and Applications (3 cr.)
- PHYS 404L - Photonics and Optical Communication Laboratory (1 cr.)
- PHYS 407L - Process Instrumentation and Digital Control Laboratory (1 cr.)
- PHYS 409L - Computerized Instrumentation Laboratory (1 cr.)
- PHYS 414 - Photonics (3 cr.)
- PHYS 415 - Selected Topics in Physics (3 cr.)
- PENG 476 - Principles of Nuclear Engineering (3 cr.)
- PHYS 429 - Computerized Instrumentation (3 cr.)

**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 100-level courses.

**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. Students who have completed the minor requirements and who meet the GPA requirement should apply for the minor in their senior year. Students who minor in entrepreneurship are not permitted to have a minor in business administration or accounting.

**Requirements**

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

- ENTR 203 - Introduction to Entrepreneurship and Small Business Management (3 cr.)
- ENTR 303 - Principles of Entrepreneurial Finance (3 cr.)
- ENTR 413 - Entrepreneurship and Innovation (3 cr.)
- ENTR 417 - Entrepreneurship Lab: Developing and Launching a New Venture (3 cr.)
- MKTG 302 - Principles of Marketing (3 cr.)
Environmental Science Minor

Coordinated by: E. Cruz-Rivera (Biology), J. Grubich (Biology), A. Ramadan (Chemistry)

The minor in Environmental Science is an interdisciplinary degree program open to students in any major. The curriculum was designed with enough flexibility to allow students of all majors to enroll in the minor. The elective courses are designed to satisfy an individual's field of interest. Students will participate in interdepartmental seminars and become involved in the study of environmentally related problems at both 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 (18-19 credits):

Concentration Requirements (9-10 credits)

- BIOL 399 - Guided Studies in Environmental Biology (3 cr.)

One of the following Biology courses:

- BIOL 102 - Essentials of Environmental Biology (3 cr.)
- BIOL 302 - Environmental Biology for Engineers (2 cr. + 1 cr. lab)
- BIOL 305 - Environmental Biology (3 cr. + 1 cr. lab)

One of the following Chemistry courses:

- CHEM 104 - Man and the Environment (3 cr.)
- CHEM 205 - Environmental Analytical Chemistry (3 cr.)
- CHEM 311 - Analytical Chemistry II (3 cr.)

Electives (9-10 credits)

- ANTH 370 - Environmental Issues in Egypt (3 cr.)
- BIOL 306 - Environmental Biology of the Red Sea (3 cr. + 1 cr. lab)
- CENG 471 - Environmental and Sanitary Engineering (3 cr.)
- POLS 442 - Environmental Politics (3 cr.)
- SCI 260 - Environmental Geology (3 cr.)
- SCI 302 - Science, Technology and the Environment (3 cr.)

Additional Requirements

Choose one of the following:

- MACT 112 - Statistical Reasoning (3 cr.)
- MACT 412 - Mathematical Modeling (3 cr.)

Notes:
Students must finish their concentration requirements in biology and chemistry before taking BIOL/CHEM 399.

Film Minor

Minor Requirements:

All Film minor students must complete 18 credit hours of course work as follows:

Complete THREE Foundation Courses (9 credits)

- FILM 200 - Analogue and Digital Practices (3 cr.)
- FILM 213 - Introduction to Visual Cultures (3 cr.)
- FILM 320 - Cinema in Egypt and the Arab World (3 cr.)

Choose TWO Survey Courses (6 credits)

- FILM 310 - History of World Cinema (3 cr.)
- FILM 340 - Documentary Film (3 cr.)
- FILM 341 - Anthropology and Film (3 cr.)
- FILM 351 - Digital Editing (3 cr.)
- FILM 352 - The Film Industry (3 cr.)
- FILM 353 - Digital Cinematography (3 cr.)
- FILM 354 - Film Audience and Reception (3 cr.)
- FILM 360 - The Filmmaker (3 cr.)
- FILM 390 - Film Genres (3 cr.)
- FILM 456 - Experiential Learning in Film (3 cr.)

Choose ONE from the Following Senior Courses (3 credits)

- FILM 450 - Senior Film Project (3 cr.)
- FILM 470 - Advanced Seminar in Film Study and Research (3 cr.)

Graphic Design Minor

Requirements (15 credits):

Choose FIVE from the following:

- DSGN 200 - Analogue and Digital Practices (3 cr.)
- DSGN 202 - Design II: Logo and Corporate Identity (3 cr.)
- DSGN 210 - Typography I (3 cr.)
- DSGN 213 - Introduction to Visual Cultures (3 cr.)
- DSGN 215 - History of Graphic Design (3 cr.)
- DSGN 303 - Design III: Publication (3 cr.)
- DSGN 304 - Design IV: Packaging (3 cr.)
• DSGN 305 - Design V: Retail Design (3 cr.)
• DSGN 420 - Production for Designers (3 cr.)

**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 100-level courses.

**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 taking a major in disciplines outside the departments of Management and Computer Science.

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.

Students who minor in information systems are not permitted to have a minor in business administration or accounting.

**Course Requirements**

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

1.  
   • CSCE 106 - Fundamentals of Computer Science (3 cr.)

2.  
   • CSCE 201 - Information Technology (3 cr.)
   or
   • MOIS 305 - Introduction to Information Systems/Technology (3 cr.)

3.  
    • MOIS 406 - Management Information Systems and Database Management (3 cr.)
    or
    • MOIS 430 - Business Information Systems Analysis and Development (3 cr.)
4.

- MOIS 432 - Information & Decision Support Systems (3 cr.)

5.

- CSCE 456 - Design of Web-based Systems (3 cr.)
  or
- MOIS 435 - Introduction to Electronic Business (3 cr.)

**International Relations Minor**

Requirements:

- POLS 203 - Introduction to Political Science II (3 cr.)
  This course must be taken if, and only if, POLS 101 was not taken during the Freshman year.
- POLS 205 - Europe in the Age of Revolution and Reform (1789-1914) (3 cr.)
  Or
- POLS 206 - Europe in International Politics in the Twentieth Century (3 cr.)
  Students minoring in International Relations are strongly encouraged to take POLS 206.
- POLS 320 - International Relations (3 cr.)

Additional Requirements

Plus **three** courses **(two courses, if POLS 203 had to be taken)** chosen from:

- POLS 405 - International Politics in the Middle East (3 cr.)
- POLS 409 - Seminar: International Organization (3 cr.)
- POLS 411 - Contemporary Foreign Policies (3 cr.)
- POLS 413 - International Financial Institutions (3 cr.)
- POLS 430 - Seminar: Special Topics in Political Science (3 cr.)
- POLS 440 - Seminar: Special Topics in International Relations (3 cr.)
- POLS 471 - International Law (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 206 - Art and Architecture of the City of Cairo (3 cr.)
- ARIC 270-271 - Introduction to Islamic Art and Architecture (3 cr. per semester)

Two of the following:
• ARIC 370 - Pre-Islamic Influences on Islamic Art and Architecture (3 cr.)
• ARIC 371-372 - Islamic Architecture in Egypt and Syria (3 cr. per semester)
• ARIC 465-466 - Islamic Architecture in Turkey, Persia and Central Asia (3 cr.)

**Islamic Studies Minor**

The minor is designed for students, particularly those coming from abroad, who wish to gain a deeper knowledge and appreciation of Islam as a culture.

**Requirements (15 credits):**

• ARIC 404 - Sira, Hadith, and Tafsir (3 cr.)
• ARIC 435 - Studies in the Qur'an (3 cr.)
• ARIC 451 - Islamic Institutions (3 cr.)

And two of the following:

• ARIC 336 - Studies in Ibn Khaldun (3 cr.)
• ARIC 353 - Muslim Political Thought (3 cr.)
• ARIC 354 - Islamic Philosophy (3 cr.)
• ARIC 454 - Modern Movements in Islam (3 cr.)
• ARIC 463 - Selected Topics in the History of Islamic Thought and Institutions (3 cr.)

**Linguistics Minor**

*Professor:* A. Agameya

*Associate Professors:* R. Williams (Director, English Language Institute), M. Plumlee

*Assistant Professors:* L. Fredricks, A. Gebril

The linguistics minor in administered by the English Language Institute in cooperation with the Anthropology Unit and the Department of Rhetoric and Composition. It offers courses in linguistics anthropology, Teaching English to Speakers of Other Languages (TESOL), or writing in specific genres. The minor is particularly valuable as a complement to majors such as English and comparative literature, Psychology, Sociology, Anthropology, and Journalism and Mass Communication.

**Requirements (9 credits):**

• LING 200 - Languages of the World (3 cr.)
• LING 252 - Introduction to Linguistics (3 cr.)
• LING 352 - Language in Culture (3 cr.)
  /ANTH 352

And two of the following elective courses (6 credits)

ANTH 332 - Social Constructions of Difference: Race, Ethnicity, and Class
ANTH 380 - Fieldwork Methods
LING 268 - Principles and Practice of Teaching English
LING 299 - Selected Topic for Core Curriculum
LING 422 - Language and Human Development

RHET 322 - Writing in the Social Sciences
RHET 325 - The Rhetoric of Argument in the Humanities and Social Sciences
RHET 334 - Digital Rhetoric
RHET 400 - Writing and Editing for Publication
RHET 410 - Grant Writing for Community Building

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):

For students majoring in the Science & Engineering School:

- MACT 233 - Differential Equations (3 cr.)
- MACT 240 - Linear Algebra (3 cr.)
  and 3 courses among:
- MACT 232 - Calculus IV (3 cr.)
  and the 300-level and 400-level MACT courses

For students majoring in Economics:

- MACT 112 - Statistical Reasoning (3 cr.)
- MACT 240 - Linear Algebra (3 cr.)
- ECON 316 - Mathematics for Economists II (3 cr.)
  and 2 courses among: 300-400 level MACT courses and
- ECON 416 - Mathematical Economics (3 cr.)

For all the other students:

- MACT 112 - Statistical Reasoning (3 cr.)
- MACT 131 - Calculus I (0/3)
  and any 3 MACT courses (excluding MACT 100 and MACT 101)

Mechatronics

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 477 - Robotics: Design, Analysis and Control (3 cr.)
- MENG 479 - Integrated Design of Electromechanical Systems (3 cr.)

Minor electives: a minimum of 3 credit-hour must be selected from the minor electives

- MENG 375 - System Dynamics (3 cr.)
- MENG 476 - Automatic Control Systems (3 cr.)
- MENG 478 - Microcontrollers and Mechatronics systems (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 EENG

- EENG 321 - Automatic Control (3 cr.)
- EENG 453 - Microcontroller System Design (3 cr.)

For Students from CSCE

- CSCE 427 - Introduction to Artificial Neural Networks (3 cr.)

For students from PHYS

- PHYS 315 - Modern Sensors (3 cr.)
- PHYS 318 - Instrumentation Systems and Control (3 cr.)
For students from PENG

- PENG 471 - Reservoir Simulation and Modeling (3cr.)

**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 selected from the following, which may be taken with the consent of the instructor:

**Requirements:**

- POLS 203 - Introduction to Political Science II (3 cr.)
  This course must be taken if, and only if, POLS 101 was not taken during the Freshman year.
- POLS 308 - Comparative Politics of the Middle East (3 cr.)

**Additional Requirements**

and **Four courses** (**three** courses if POLS 202 had to be taken) selected from the following:

- POLS 325 - Government and Politics of Egypt (3 cr.)
- POLS 354 - Political and Social Thought in the Modern Arab World (3 cr.)
- POLS 405 - International Politics in the Middle East (3 cr.)
  See footnote one.
- POLS 420 - Issues in Middle East Politics (3 cr.)
- POLS 422 - Contemporary Egypt (3 cr.)
- POLS 430 - Seminar: Special Topics in Political Science (3 cr.)
  (Whenever content is relevant. May be taken more than once for credit if content changes)
- POLS 432 - Seminar: Comparative Politics and/or Policies (3 cr.)
  (Whenever content is relevant)

**Notes:**

Footnote 1: The requirement that POLS 320 be taken as a prerequisite for POLS 405 may be waived for minors with the consent of the instructor.

**Music Minor**

In order to complete the minor in music, 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.
- Study representative great works of music literature and composers who produced them, either Western or Arab.
- Make substantial progress in learning to sing or play an instrument; more advanced students may also present part of a solo recital, with the permission of their teacher.
- Sing in a choir, and/ or play in an instrumental ensemble.
This will require that the student complete 17 credit hours of instruction, normally including the following:

**Theory and literature (10 cr.)**

- MUSC 220 - Introduction to Music (3 cr.)

**EITHER**

- MUSC 240 - Western Music Theory I (3 cr.)
  AND
- MUSC 241 - Sight-Singing and Aural Skills I (1 cr.)
  AND
- MUSC 360 - Music in the Western Tradition (3 cr.)

**OR**

- MUSC 245 - Arab Music Theory I (3 cr.)
  AND
- MUSC 246 - Maqam I (Arab Music Sight-Singing and Aural Skills) (1 cr.)
  AND
- MUSC 342 - Music in the Arab Tradition (3 cr.)

**Performance (4 cr.)**

MUSC 280, 281 Applied Private Instruction (1 cr. each = 2 cr.)

Two semesters of ensemble, chosen from among the following:

- MUSC 262/362 Arab Music Ensemble (1 cr.)
- MUSC 263/363 Guitar Ensemble (1 cr.)
- MUSC 264/364 Chamber Ensemble (1 cr.)
- MUSC 265/365 Practicum (1 cr.)
- MUSC 266/366 Chamber Singers (1 cr.)
- MUSC 267/367 Cairo Choral Society (1 cr.)

**Music Technology (3 cr.)**

**EITHER**

- MUSC 330 - Introduction to Music Technology (3 cr.)

**OR**

- MUSC 331 - Music Production Using Protools 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 Protools 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 220 - Introduction to Music (3 cr.)

EITHER

• MUSC 240 - Western Music Theory I (3 cr.)
  AND
• MUSC 241 - Sight-Singing and Aural Skills I (1 cr.)

OR

• MUSC 245 - Arab Music Theory I (3 cr.)
  AND
• MUSC 246 - Maqam I (Arab Music Sight-Singing and Aural Skills) (1 cr.)

Performance (2 cr.)

• MUSC 284, 285 Piano Proficiency (1 cr. each = 2 cr.)

Music Technology (9 cr.)

• MUSC 232, 332, 432 - Digital Audio / MIDI Lab (1 cr. each)
• MUSC 330 - Introduction to Music Technology (3 cr.)
• MUSC 331 - Music Production Using Protools I (3 cr.)

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 100-level courses and PHIL 220, selected in consultation with a member of the philosophy faculty.

PHIL 220 is prerequisite for all philosophy courses except PHIL 100, PHIL 199, and PHIL 221.

**Physics Minor**

The minor in physics is designed to provide students majoring in science, computer science or engineering with the opportunity of complementing their major disciplines with a series of courses designed to provide in-depth appreciation of physics.

**Requirements (17 credits)**

- PHYS 204L - Optics Laboratory (1 cr.)
- PHYS 211 - Modern Physics (3 cr.)
- PHYS 212 - Quantum Mechanics I (3 cr.)
- PHYS 214 - Waves and Optics (3 cr.)

And a minimum of 7 credits from the following:

- PHYS 311 - Thermodynamics and Statistical Mechanics (3 cr.)
- PHYS 312 - Theoretical Mechanics (3 cr.)
- PHYS 316 - Electromagnetic Theory (3 cr.)
- PHYS 321L - Nuclear Physics Lab (1 cr.)
- PHYS 322L - Solid-State Physics Lab (2 cr.)
- PHYS 325 - Introduction to Solid-State Physics (3 cr.)
- PHYS 413 - Nuclear Physics (3 cr.)
- PHYS 421 - Quantum Mechanics II (3 cr.)

**Political Economy Minor**

The minor in Political Economy is open to students majoring in disciplines other than Political Science.

**Requirements:**

The Minor requires successful completion of:

- POLS 203 - Introduction to Political Science II (3 cr.)
  (This course must be taken if, and only if, POLS 101 was not taken during the Freshman year)
- POLS 350 - Introduction to Political Economy (3 cr.)
- POLS 351 - Theory and History of Political Economy (3 cr.)
- POLS 425 - Global Political Economy (3 cr.)

**Additional Requirements**

Plus two courses (one course if POLS 203 had to be taken) from the following:
- POLS 413 - International Financial Institutions (3 cr.)
- POLS 424 - Political Economy of the Middle East and North Africa (3 cr.)
- POLS 442 - Environmental Politics (3 cr.)

Political Science Minor

Requirements (15 credits) to be taken as follows:

1. if POLS 101 has already been taken in the Freshman Year:
   five Political Science courses at 300 or 400 level.
2. if POLS 101 has not been taken in the Freshman Year:
   POLS 203 plus four Political Science courses at 300 or 400 level.

Psychology Minor

The minor in psychology provides a general introduction to the field without the depth of methodological training required of majors.

A limited number of students are accepted into the Psychology minor. To declare a minor students must have completed PSYC 201 and have obtained a grade of "B" or higher, as well as additional requirements, including the GPA as determined by the department. Selection of classes should be approved in consultation with the psychology faculty.

Core requirements (3 credits)

- PSYC 201 - 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 327 - Theories of Personality (3 cr.)
  or
  - PSYC 342 - Abnormal Psychology (3 cr.)
    Social Context (3 credits)
  - PSYC 301 - Social Psychology (3 cr.)
  or
  - PSYC 330 - Community Psychology (3 cr.)

Additional Requirements (6 credits)

Two additional psychology courses. Psychology minors are permitted to enroll in any psychology courses for which they meet the requirements.

Rhetoric and Writing Minor
The Rhetoric and Writing Minor introduces and advances the knowledge, understanding and value of rhetoric and writing disciplines at the university. It provides the opportunity for students to study and practice across disciplines of writing, from narrative nonfiction and creative writing, to business and technical writing, to approaches to academic inquiry.

Program Learning Outcomes

Upon completion of the Rhetoric and Writing Minor, students will be able to:

- Apply concepts and practices in contexts relevant to their emphasis area.
- Demonstrate an advanced writing style appropriate to this emphasis area.
- Practice sophisticated ethical and critical reflection, including (but not limited to) analysis of genre and discourse appropriate to this emphasis area
- Evidence advanced awareness of interdisciplinary issues attached to their emphasis

Requirements (15 credits):

Students who opt to minor in Rhetoric and Writing must have completed RHET 201 with a minimum grade of B-.

To fulfill the 15 credits for the Rhetoric and Writing Minor, students take:

Required course for each emphasis area:

- Writing in the Creative Genres: RHET 345 (Writer's Workshop)
- Business/Technical Writing: RHET 320 (Business Communication)
- Academic Writing: RHET 310 (Effective Rhetoric: Discourse and Power)

Additional Requirements (12 credits total):

- 6-9 credits in an emphasis area (academic, business/technical or specialized genre),
- 0-3 credit hours in a second emphasis area, and
- 3 credits in any area of their choice

Rhetoric and Writing Minor courses may be double-counted for:

- Core Curriculum credit at the secondary level
- Core Curriculum credit at the capstone level

Rhetoric and Writing Minor courses may NOT be double-counted for:

- RHET Writing requirements in the Core (3-9 credits)
- Major/Concentration credit

Students who have already taken any of the writing courses below as electives or Core courses (as described above) may count credits retroactively.

Course list by emphasis area:

A. Writing in the Creative Genres
Students who select this area of emphasis will practice and work toward mastery in several creative genres of writing, including the following: narrative nonfiction, autobiography, travel writing, fiction, poetry, playwriting and children’s literature. They will read within and practice the conventions of these genres, consider ethical concerns raised in the genres, develop critical mastery of the creative genres, and produce a substantial capstone project demonstrating significant growth in writing in a chosen creative genre.

**Emphasis Outcomes:**

- Master concepts and practices in creative genres through selected reading and writing
- Develop into conversant critics in the creative genres, reflecting upon both critical and ethical concerns raised through genre analysis and critical reflection
- Produce substantial capstone writing demonstrating mastery of concepts and practices in one of the creative genres
- Learn the professional and publication conventions of their selected genre
- ECLT 370 - Creative Writing (3 cr.)
- RHET 340 - Life Narratives: Reading as Writers (3 cr.)
- RHET 341 - Travel Writing (3 cr.)
- RHET 342 - Writing Children’s Literature (3 cr.)
- RHET 345 - The Writer's Workshop (3 cr.)
- RHET 380 - Poetry Writing (3 cr.)
- RHET 450 - Imagining the Book (3 cr.)

Other writing courses from the disciplines will be offered here, once given permission from the various departments.

**B. Business/Technical Writing**

Students who select this area of emphasis will practice and work toward professional competency in the fields of business, science and technical communications, including the following: business writing, technical writing, proposal writing, and digital rhetoric. They will read within and practice the conventions of these fields of communication, and will reflect upon ethical and critical standards enforced or called into question by these practices.

**Emphasis Outcomes:**

- Describe and analyze norms and conventions in writing for specialized audiences in the fields of business and science/engineering
- Produce effective and advanced business and science/technical communications
- RHET 225 - Public Speaking (3 cr.)
- RHET 320 - Business Communication (3 cr.)
- RHET 321 - Technical Communication (3 cr.)
- RHET 332 - Presentation and Persuasion in Business (3 cr.)
- RHET 334 - Digital Rhetoric (3 cr.)
- RHET 410 - Grant Writing for Community Building (3 cr.)
- RHET 480 - Research and Writing Internship (3 cr.)
- RHET 490 - Advanced Scientific and Technical Writing (3 cr.)

**C. Academic Writing**
Students who select this area of focus will practice and work toward mastery in the several areas of academic writing, including the following: how writing drives the humanities and social sciences, writing and cognitive studies, writing for publication purposes, and a history of argument. They will learn how writing drives thought, genres and the development of many disciplines. They will consider ethical concerns raised through this practice.

**Emphasis Outcomes:**

- Learn the role of writing in forming and influencing academic fields of study, the creation of genres, and professional discourses
- Analyze the relationship between writing and cognition
- Learn the professional and publication conventions in chosen disciplines of academic writing
- RHET 310 - Effective Rhetoric: Discourse and Power (3 cr.)
- RHET 322 - Writing in the Social Sciences (3 cr.)
- RHET 323 - Changing Words, Changing Worlds (3 cr.)
- RHET 325 - The Rhetoric of Argument in the Humanities and Social Sciences (3 cr.)
- RHET 330 - Writing and Cognition (3 cr.)
- RHET 400 - Writing and Editing for Publication (3 cr.)

**Selected Topics and Independent Study**

(Depending on ‘topic,’ these courses may fit in any of above ‘emphasis’ areas)

- RHET 299 - Selected Topics (3 cr.)
  - Public Speaking
- RHET 399 - Selected Topics (3 cr.)
  - Advanced Style
- RHET 460 - Independent Study (1-3 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.

- **One** 300-level sociology course
- **One** 400-level sociology course
- SOC 201 - Introduction to Sociology (3 cr.)
- SOC 309 - History of Social Theory (3 cr.)
- SOC 381 - Doing Survey Research in the Social Sciences (3 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 18 credits in Theatre:

- THTR 203 - The Art of the Theatre (3 cr.)
- THTR 230 - Play Analysis (3 cr.)
  Three credits total from the following:
- THTR 204 - Introduction to Technical Theatre (3 cr.)
- THTR 240 - Production Practicum (1 cr. per production)
- THTR 242 - Rehearsal and Performance Practicum (1 cr. per production)
  One from the following:
- THTR 225 - Acting I (3 cr.)
- THTR 226 - Acting in Arabic I (3 cr.)
  One from the following:
- THTR 350 - Survey of Dramatic Literature (3 cr.)
- THTR 351 - History of The Theatre (3 cr.)
- THTR 460 - Modern and Contemporary Drama (3 cr.)
- THTR 461 - Dramatic Theory and Criticism (3 cr.)
  One additional Theatre course, must be a 300 level course or higher.

Type Design Minor

Requirements (15 credits):

Choose FIVE from the following:

- DSGN 200 - Analogue and Digital Practices (3 cr.)
- DSGN 210 - Typography I (3 cr.)
- DSGN 213 - Introduction to Visual Cultures (3 cr.)
- DSGN 318 - History of Arabic Calligraphy (3 cr.)
- DSGN 320 - Typography II (3 cr.)
- DSGN 330 - Typography III (3 cr.)

Dual Degree Programs

Development Practice (MDP) option BSc/CENG-MPA

Dual Degree Option BSc/CENG-MPA
Master's Program in Development Practice (MDP) Option

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 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. Those interested in this option are required to complete a summer work assignment for Fall practicum 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. The program prepares students for careers in public service 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 MDP option 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. The following course sequence has been developed for the MDP option, but students should consult their advisor in CENG to ensure that all SSE requirements are met:

**SEMESTER IX**

- CENG 424 Methods & Equipment for Construction II
- xxxx xxx Eng. Concentration 1 elective
- CENG 448 Financial Management and Accounting in Construction (MPA credit)
- CENG xxx Elective (1)
- CENG 431 Intro. to Transportation
- CENG 490 Senior Thesis I (Capstone Core Level I)
- CENG 497 Industrial Training (Practicum)

**SEMESTER X**

- xxxx xxx Engineering Concentration 2
- CENG 567 Construction Leadership and Management/Elective 2
- CENG 491 Senior Thesis II (Capstone Core Level II)
- PPAD 506 Essentials of Public Policy and Administration (MPA credit)
- PPAD 500 Research Methods for Public Policy and Administration (MPA credit)
- xxxx xxx Science elective (from MDP list)
- Summer internship – public/NGO management focus and participation in MDP colloquium (MPA credit through 590)

**SEMESTER XI**

- PPAD 590 Practicum (Capstone Level II) (MPA Credit)
- ENGR 516 Engineering for Sustainable Development (MPA Credit)
- PPAD 570 Global Classroom (MPA Credit)
- xxxx xxx Science elective (from MDP list)
- PPAD 598 Thesis Research Seminar (MPA Credit)

**SEMESTER XII**

- PPAD 514 Human Resource Management for Government and Nonprofit Organizations (MPA Credit)
PPAD 516 Core Concepts and Applications for Social and Environmental Policy (MPA Credit)
PPAD 517 NGO Management (MPA Credit)
PPAD 599 Thesis (MPA Credit)
Summer thesis work, if needed, and participation in MDP colloquium

*xxx indicates elective within the respective program

Lists of MDP-relevant courses will be provided to students in the program prior to registration for each semester, based on offerings available in the appropriate departments

**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 department of Arab and Islamic Civilizations (ARIC) offers Master's degrees in Arabic Studies with emphases in four fields: Islamic Art and Architecture, Middle Eastern History, Islamic Studies, Arabic Language and Literature. The degree 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. Middle Eastern History
4. Islamic Studies

**Courses**

The student must take a minimum of eight courses in his/her area of specialization.

These must include

**For Arabic Language and Literature specialization**

Choose one of the following:

- ARIC 504 - Seminar on a Selected Work or Author in Classical Arabic Literature (3 cr.)
- ARIC 507 - Seminar on Modern Arabic Literature: Nineteenth Century (3 cr.)
- ARIC 508 - Seminar on Modern Arabic Literature: Twentieth Century (3 cr.)

**For Islamic Art and Architecture specialization**
Choose one of the following:

- ARIC 575-576 - Special Studies in Islamic Art and Architecture (3 cr.)

For Islamic Studies Specialization

Choose one of the following:

- ARIC 435 - Studies in the Qur'an (3 cr.)
- ARIC 525 - Seminar on Selected Topics in Sira or Hadith (3 cr.)

Students may also choose one of the following:

- ARIC 526 - Seminar on Selected Topics in Islamic Law and Legal Theory (3 cr.)
- ARIC 527 - Selected Topics in Islamic Theology, Sufism or Philosophy (3 cr.)

For Middle Eastern History specialization

Choose one of the following:

- ARIC 530 - Seminar on a Selected Topic in Medieval Arab/Islamic History, 600-1800 A.D. (3 cr.)
- ARIC 542 - Seminar on the Nineteenth-Century Middle East (3 cr.)
- ARIC 543 - Seminar on the Twentieth-Century Middle East (3 cr.)

Additional Requirements

A maximum of two 400-level courses may be taken as part of the M.A. program. 300 and 400 level courses may be taken at the 500 level in which case extra readings and research will be required of the graduate student. See below:

- ARIC 510-511 - Special Studies in Classical Arabic Literature (3 cr.)
- ARIC 512-513 - Special Studies in Modern Arabic Literature (3 cr.)
- ARIC 521-522 - Special Studies in Islamic Thought and Institutions (3 cr.)
- ARIC 560 - 561 - Special Studies in Middle Eastern History (3 cr.)
- ARIC 575-576 - Special Studies in Islamic Art and Architecture (3 cr.)

Notes:

Subject to departmental approval, up to two courses may be taken outside the area of specialization.

Courses on 19th - 20th century Middle Eastern history are taught by the Department of History.

Admissions

The history unit has a preference for applicants who already have some academic background in Arabic and Islamic studies and who have studied the Arabic language at the university level for at least one year.
Language

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 201 by test. The student whose degree concentration is history must reach the ALNG 303 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 three branches of the master of arts in Arabic studies. The thesis must be written in English and submitted in accordance with university regulations.

Community Psychology (M.A.)

International Counseling and Community Psychology (ICCP)

The ICCP program will place its graduates at the forefront of advancing global trends towards multi-cultural and systemic psychological practice that promotes culturally relevant counseling and community intervention in Egypt and the region. Graduates will be the first practitioners trained in Egypt and the region to provide a multilayered range of individual and community level interventions to assist people struggling with issues affecting mental health, including mental illness and psychosocial issues.

Masters of Arts in Community Psychology

This program will prepare students to work within communities, schools, governments, United Nations and nongovernmental organizations to develop, implement, and evaluate psychosocial interventions. The program will also expose students to methods of psychological practice that are culturally appropriate to Egypt and the region. In response to community needs, the proposed program will provide its graduates with intervention skills that will help them spread awareness about mental health and thereby advance community-based mental health care.

Admission

The applicant should have a minimum of 3.0 GPA in undergraduate studies; if the student has an MA 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 15 credits (or equivalent) in psychology or related social/behavioral sciences including: Statistics, Research Design, Psychopathology and Abnormal Psychology.

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

15 credits Required / 5 courses

- PSYC 500 - Fundamentals of Counseling (3 cr.)
- PSYC 502 - Community Psychology and Systems Theory (3 cr.)
- PSYC 505 - Ethics and Professional Issues (3 cr.)
- PSYC 508 - Applied Research Design and Statistical Analysis (3 cr.)
- PSYC 540 - Community and Group Interventions (3 cr.)

2. Specialization courses

9 credits Required / 3 courses

- PSYC 525 - Consultation to non-Profit Organizations (3 cr.)
- PSYC 530 - Community Assessment and Program Evaluation (3 cr.)
- PSYC 535 - Prevention and Intervention in Communities (3 cr.)
- PSYC 586 - Practicum I in Community Psychology (3 cr.)

3. Elective

3 credits Required / 1 Elective course

4. Internship/Final Project

6 credits Required 8 months

- PSYC 596 - Internship in Community Psychology (3 cr.)

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 599 - Research Guidance and Thesis (3 cr.)

Counseling Psychology (M.A.)
International Counseling and Community Psychology (ICCP)

The ICCP program will place its graduates at the forefront of advancing global trends towards multi-cultural and systemic psychological practice that promotes culturally relevant counseling and community intervention in Egypt and the region. Graduates will be the first practitioners trained in Egypt and the region to provide a multilayered range of individual and community level interventions to assist people struggling with issues affecting mental health, including mental illness and psychosocial issues.

Masters of Arts in Counseling Psychology

This program will prepare students to provide counseling to individuals, couples and families struggling with psychosocial issues. The program will also expose students to methods of psychological practice that are 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 an MA 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 15 credits (or equivalent) in psychology or related social/behavioral sciences including: Statistics, Research Design, and Psychopathology.

Language Requirement

The applicant should demonstrate proficiency in the English language in accordance with AUC standards

Courses (42 credit hours)

Course work for the Master of Art requires the completion of 42 credits as follows:

1. Core Courses

18 credits Required / 6 courses

- PSYC 500 - Fundamentals of Counseling (3 cr.)
- PSYC 502 - Community Psychology and Systems Theory (3 cr.)
- PSYC 504 - Advanced Human Growth and Development (3 cr.)
- PSYC 505 - Ethics and Professional Issues (3 cr.)
- PSYC 508 - Applied Research Design and Statistical Analysis (3 cr.)
- PSYC 540 - Community and Group Interventions (3 cr.)

2. Specialization courses:

18 credits/ 6 courses
• PSYC 506 - Psychopathology and Resilience across Cultures (3 cr.)
• PSYC 510 - Counseling: Models and Methods (3 cr.)
• PSYC 515 - Counseling Assessment: International Perspectives (3 cr.)
• PSYC 550 - Couples Counseling and Human Sexuality (3 cr.)
• PSYC 580 - Practicum I in Counseling Psychology (3 cr.)
• PSYC 581 - Practicum II in Counseling Psychology (3 cr.)

3. Internship/Final Project

6 credits Required 8 months.

• PSYC 590 - Internship in Counseling Psychology (3 cr. + 3 cr.)

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 to the M.A. in Economics in International Development must obtain an acceptable score on the Graduate Record Exam (GRE) within the first semester of enrollment in the program. Students are strongly urged to apply for the GRE exam immediately upon receipt of their admission letter in order to allow enough time for the reservation of an exam slot and the receipt of results by AUC.

Courses

A minimum of 36 credit hours is required. All students must:

1. Take seven core courses

Five from economics and two from allied disciplines as indicated below:

• ECON 500 - The Economic Setting for Development (3 cr.)
• ECON 505 - Advanced International Trade (3 cr.)
• ECON 512 - Economic Growth & Development (3 cr.)
• ECON 519 - Project Evaluation (3 cr.)
• ECON 526 - Development Research Workshop (3 cr.)
1. Choose one course from the following:

- SOC/ANTH 530 - Theorizing the State (3 cr.)
- SOC/ANTH 535 - World Systems and Development (3 cr.)
- SOC/ANTH 560 - Population Dynamics (3 cr.)

2. Choose four electives

One from each of the following groups of courses as indicated below:

**Group 1**

- ECON 506 - Advanced Topics in Economics (3 cr.)
- ECON 508 - Labor Economics (3 cr.)
- ECON 511 - Economic Development in Middle East Countries (3 cr.)
- ECON 522 - Economic Strategies for Sustainable Development (3 cr.)
- ECON 514 - Ethical Issues in Development (3 cr.)

**Group 2**

- LAW 512 - Human Rights and the United Nations (3 cr.)
- POLS 562 - International Development Organizations (3 cr.)

**Group 3**

- SOC/ANTH 515 - Kin, Friends and Neighbors (3 cr.)
- SOC/ANTH 520 - Sex Roles, Gender and Society (3 cr.)
- SOC/ANTH 525 - Religion, Ideology and Society (3 cr.)
- SOC/ANTH 540 - Revisiting the Rural (3 cr.)
- SOC/ANTH 545 - Cities: Structure and Dynamics (3 cr.)
- SOC/ANTH 555 - Comparative Health and Healing Systems (3 cr.)
- SOC/ANTH 570 - Environment and Society (3 cr.)

**Group 4**

- MGMT 501 - Business Communication (3 cr.)
- MGMT 502 - Managing in a Dynamic Environment (3 cr.)
- MGMT 504 - Human Capital Strategy (3 cr.)

3. Undertake a practicum with an approved host organization

- ECON 590 - Practicum (3 cr.)
Practicum

The program does not require a comprehensive examination or a thesis. Instead, students are required to undertake a 200-hour practicum over a 4-6 week period with a development-related institution, preferably after completing six core courses. The Department will assist students in identifying appropriate hosts for the practicum and in placing them. The practicum is an essential requirement of the program, giving it a distinct feature that is expected to add a pragmatic exposure to students in a serious development work setting. The Department and host institutions will be jointly responsible for supervising and evaluating student practicum work.

A research paper is required as part of the practicum assignment. The paper will address a topic closely related to the student’s practicum work and is expected to follow sound research methods, drawing on the support that will be provided in ECON. 526 Development Research Workshop.

While the Department is responsible for arranging practicum placements, some flexibility may be exercised in setting the timing of the practicum in view of the need to take due note of host institutions’ work schedules and select meaningful assignments for students. In no case, however, will students be eligible for the practicum until they complete at least three core courses, and undertake ECON. 526 before or concurrently with the practicum assignment.

Economics with a Thesis Option or with concentrations in Growth and Sustainable Development, Competitive Strategy and Valuation, and International 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 416 and 418 with a grade of B or better; i.e. a student must complete ECON 416 and 418 before enrolling in any 500 level course.

Applicants to the M.A. in Economics must obtain an acceptable score on the Graduate Record Exam (GRE) within the first semester of enrollment in the program. Students are strongly urged to apply for the GRE exam immediately upon receipt of their admission letter in order to allow enough time for the reservation of an exam slot and the receipt of results by AUC.

Students applying for Master in Economics can choose either Thesis Track or Non-Thesis Track option. Total credit hours for completion of the Master Degree for either track is 30 credit hours.

Requirements for Thesis Track

Courses

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

- ECON 501 - Advanced Macroeconomic Theory (3 cr.)
- ECON 502 - Advanced Microeconomic Theory (3 cr.)
- ECON 518 - Econometrics (3 cr.)
- ECON 525 - Research Workshop (3 cr.)

Four Additional Courses (12 credit hours)

A maximum of six hours of 500-level courses or 400 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 501 - Advanced Macroeconomic Theory (3 cr.)
- ECON 502 - Advanced Microeconomic Theory (3 cr.)
- ECON 518 - Econometrics (3 cr.)
  and either:
  - ECON 525 - Research Workshop (3 cr.)
  or
  - ECON 526 - Development Research Workshop (3 cr.)

Four Additional Courses (12 credit hours)

A maximum of six hours of 500-level courses or 400 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.

Concentration Fields

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

*The MA in Economics offers three concentration fields:*

1. Growth and Sustainable Development (6 credit hours)

- ECON 512 - Economic Growth & Development (3 cr.)
- ECON 522 - Economic Strategies for Sustainable Development (3 cr.)

2. Competitive Strategy and Valuation (6 credit hours)

- ECON 519 - Project Evaluation (3 cr.)
- ECON 520 - Competitive Strategy and Game Theory (3 cr.)
3. International Economics

- ECON 505 - Advanced International Trade (3 cr.)
- ECON 517 - International Finance (3 cr.)

Egyptology and Coptology, with tracks in Egyptology: Art, Archeology and History, Egyptology: Philology, 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.

There are 3 different possible tracks for the MA:

1. Egyptology: Art, Archeology and History
2. Egyptology: Philology
3. Coptology

The graduate 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.

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), 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 might be required in the form of prerequisites. These 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 papers, and more challenging exams.

We also require students to have a reading knowledge of either French or German prior to writing a thesis, this 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 400-level courses may be taken as part of the MA program. Approved 300 and 400 level courses may be taken at the 500 level in special circumstances.

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.

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 599)

Required:

- EGPT 540 - Advanced Method and Theory: Archaeological and Historical (3 cr.)
- EGPT 598 - Research Seminar: Research Design and Writing (3 cr.)
- EGPT 541 - Material Culture: Looking at Artifacts in Context (3 cr.)
  Or
- EGPT 542 - Site Analysis (3 cr.)
- EGPT 591 - Field Work in Egyptological Method and Theory (3 cr.)

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 510 - Culture and Society of Ancient Egypt (3 cr.)
- EGPT 512 - Art, Societies, and Cultures of the Ancient Near East (3 cr.)
- EGPT 530 - Graeco-Roman Egypt (3 cr.)
- EGPT 519 - Selected Topics in Ancient Egyptian Art and Culture (3 cr.)
  ** Can be taken more than once if the subject matter changes.
- EGPT 521 - Societies and Cultures of Ancient Nubia (3 cr.)
- EGPT 522 - Ancient Egyptian Religion and Ethics (3 cr.)
- EGPT 525 - Settlement and Daily Life in Ancient Egypt (3 cr.)
- EGPT 526 - Death and Burial in Ancient Egypt (3 cr.)
• EGPT 533 - Coptic Art and Architecture (3 cr.)
• EGPT 545 - Selected Topics in Cultural Resource Management and Museology (3 cr.)
  ** Can be taken more than once if the subject matter changes.
• EGPT 560 - 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.

Egyptology: Philology (after fulfilling prerequisites):

4 core courses and 4 optional courses and a thesis (EGPT 599)

Required:

• EGPT 504 - Advanced Hieratic (3 cr.)
• EGPT 561 - Advanced Readings in Ancient Egyptian religion Texts (3 cr.)
  Or
• EGPT 500 - Hieroglyphics III (3 cr.)
  Or
• EGPT 501 - Hieroglyphics IV (3 cr.)
  Or
• EGPT 562 - Advanced Readings in historical literature from the Old Kingdom to the Late period (3 cr.)
• EGPT 591 - Field Work in Egyptological Method and Theory (3 cr.)
• EGPT 598 - Research Seminar: Research Design and Writing (3 cr.)

Optional:

Four choices from other courses depending on individual interest, including:

• EGPT 502 - Introduction to Demotic (3 cr.)
• EGPT 503 - Introduction to Ptolemaic Hieroglyphs (3 cr.)
• EGPT 505 - Introduction to Coptic (3 cr.)
• EGPT 506 - Advanced Coptic Texts (3 cr.)
  ** Can be taken more than once if the subject matter changes.
• EGPT 521 - Societies and Cultures of Ancient Nubia (3 cr.)
• EGPT 522 - Ancient Egyptian Religion and Ethics (3 cr.)
• EGPT 530 - Graeco-Roman Egypt (3 cr.)
• EGPT 510 - Culture and Society of Ancient Egypt (3 cr.)
• EGPT 512 - Art, Societies, and Cultures of the Ancient Near East (3 cr.)
• EGPT 519 - Selected Topics in Ancient Egyptian Art and Culture (3 cr.)
  ** Can be taken more than once if the subject matter changes.
• EGPT 545 - Selected Topics in Cultural Resource Management and Museology (3 cr.)
  ** Can be taken more than once if the subject matter changes.

Coptology:
4 core courses and 4 optional courses and a thesis (EGPT 599)

Required:

- EGPT 505 - Introduction to Coptic (3 cr.)
- EGPT 506 - Advanced Coptic Texts (3 cr.)
- EGPT 598 - Research Seminar: Research Design and Writing (3 cr.)
- EGPT 533 - Coptic Art and Architecture (3 cr.)

Or

- EGPT 539 - Selected Topics in Coptic Studies (3 cr.)

Choices:

Four choices from other courses depending on individual interest:

- EGPT 530 - Graeco-Roman Egypt (3 cr.)
- EGPT 531 - The Romano-Byzantine World and Egypt (3 cr.)
- EGPT 532 - Classical Art and Archaeology (3 cr.)
- EGPT 533 - Coptic Art and Architecture (3 cr.)
- EGPT 539 - Selected Topics in Coptic Studies (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.

- ARIC 575-576 - Special Studies in Islamic Art and Architecture (3 cr.)

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.

The prerequisites are:

Fall

- EGPT 253 - Hieroglyphics I (3 cr.)
- EGPT 361 - Art and Architecture of Ancient Egypt I (3 cr.)
- EGPT 343 - History of Ancient Egypt I: Pre-Dynastic Through Middle Kingdom Egypt (3 cr.)

Spring

- EGPT 254 - Hieroglyphics II (3 cr.)
- EGPT 362 - Art and Architecture of Ancient Egypt II (3 cr.)
- EGPT 344 - History of Ancient Egypt II: Middle Kingdom through Ptolemaic Egypt (3 cr.)
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.

English and Comparative Literature (M.A.)

Admission

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 on the TOEFL with TWE that their command of English is adequate for study in the program.

Courses

A minimum of twenty-four graduate hours is required. Eight courses must be taken at the 500 level. All students admitted to the graduate program will be required during their first year to take ECLT 506 "Greek Classics and Translation", ECLT 508 "The History of Literary Criticism", ECLT 509 "Modern Literary Criticism", and ECLT 555 "Research Methods in Literature", unless they have taken these courses at the undergraduate 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.

Comprehensive Examination

All candidates for the master’s degree will be required to sit for a qualifying examination after completing six courses in the department. The exam will be both written and oral. The exam will cover a list of 30 books, to be submitted by the student one month in advance, and will be prepared in consultation with the adviser. The list must be approved by the student’s adviser and the department chair. Selection will be made from the major periods of Western literature and should include selections from poetry, drama, and prose. If the exam is failed, it may be repeated once. The student will not be permitted to write a thesis until the exam is passed.

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 European 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.

Gender and Women’s Studies in the Middle East/North Africa, with specializations in Gender and Justice, Gendered Political Economies, and Gender and Women’s Studies in the Middle East/ North Africa (M.A.)

Master of Arts in Gender and Women’s Studies in the Middle East/North Africa

The graduate program in Gender and Women’s Studies offers advanced study in three tracks:

• Gender and Justice
• Gendered Political Economies
• Gender and Women’s Studies in the Middle East/ North Africa

The graduate program in Gender and Women’s studies prepares graduates for a wide variety of professional careers. Specialists in gender and women’s studies are being hired as consultants in international development agencies, local NGO’s, national government agencies, all of which hire people that have special training in understanding gender relations. Students wishing to pursue doctoral work will find that interdisciplinary training in gender and women’s studies equips them with theoretical and methodological strengths in most disciplines and applied research fields. Consistent with the mission of the School of Global Affairs and Public Policy, Gender and Women’s Studies is an interdisciplinary graduate program.

Gender and Justice

Gender and Justice offers advanced study of contemporary practices and problems of justice ranging from international justice regimes to national legal cultures to social and economic justice claims with a particular focus on the global south.

Gendered Political Economies

The specialization in Gendered Political Economies engages with shifts in the gendering of economic and political trajectories of late modernity. It deals with issues relating to poverty, labor politics, political economies of desire,
migration, mobility and development histories and practices. The aim is to provide students with a solid grounding in the nexus between gender and modalities for reorganizing the political economic order in the contemporary world.

Gender and Women’s Studies in the Middle East/ North Africa

The Gender and Women's Studies in the Middle East, North Africa focus offers an interdisciplinary field of analysis that draws its questions and approaches from the humanities and social sciences through investigating how relations of gender are embedded in social, political and cultural formations. It provides students with an interdisciplinary and transnational perspective with special emphasis on the Middle East and North African region.

The requirements for the tracks are as follows

Specialization in Gender and Justice

There are five required courses:

- GWST 500 - Theorizing Gender (3 cr.)
  (First semester)
- GWST 502 - Justice: Histories and Theories (3 cr.)
  (First semester)
- GWST 505 - Gender and Feminist Research Methodologies (3 cr.)
  (Second semester)
- GWST 508 - Women and Human Rights (3 cr.)
- SOC/ANTH 530 - Theorizing the State (3 cr.)

Electives:

The remaining three courses are electives selected from three course groups: Group 1: Geographies of Justice, Group 2: Conflict, Identity, Reconstruction, Group 3: The Gendered Subject of Law. Students must select one course from each group.

Specialization in Gendered Political Economies

There are six required courses:

- GWST 500 - Theorizing Gender (3 cr.)
  (First semester)
- GWST 503 - Histories and Theories of Gender and Development (3 cr.)
  (First semester)
- GWST 504 - Gender and Migration (3 cr.)
  (Second semester)
- GWST 505 - Gender and Feminist Research Methodologies (3 cr.)
  (Second semester)
- GWST 506 - Reading Capital (3 cr.)
- GWST 507 - Critical Geographies: Reading the Global South (3 cr.)
Electives:

The remaining two courses are 500 level electives. Of these, one course at the 400 level may be considered for credit with approval of the IGWS Graduate Advisory Committee.

Specialization in Gender and Women’s Studies in the Middle East/North Africa

There are five required courses:

- GWST 500 - Theorizing Gender (3 cr.)
  (First semester)
- GWST 501 - Approaches to Middle East/ North Africa Gender and Women’s Studies (3 cr.)
  (Second semester)
- GWST 505 - Gender and Feminist Research Methodologies (3 cr.)
  (Second semester)

Plus any two GWST courses

Electives:

Students select the remaining three electives at the 500 level across the social sciences and humanities from a selected list. Of these, one course at the 400 level may be considered for credit with approval of the IGWS Graduate Advisory Committee.

MA Thesis

All students must complete a thesis according to university regulations. Students must register for GWST 599. Before commencing work on the thesis, the student must have a thesis proposal approved by the IGWS Graduate Advisory Committee. Students should familiarize themselves with the specific procedural requirements of the IGWS thesis. Guidelines are available in the IGWS office and on the web.

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 giday gidan 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 semester only.

Note

The list of electives for the three track specializations are reviewed by the IGWS Graduate Advisory Committee every academic year. The list is available on the IGWS graduate center website or in the IGWS office.
International & Comparative Education (M.A.) with concentrations in Teaching and Learning, Educational Leadership, and International Education Policy and Planning

Distinguished Professor: S. Peterson (Dean of Graduate School of Education)
Associate Professor: T. Purinton (Associate Dean)
Professor of Practice: M. Zaalouk (Director of the Middle East Institute for Higher Education (MEIHE))
Associate Professors of Practice: H. El-Deghaidy, R. Hozayin, N. Megahed, P. Norman, S. Rissmann-Joyce
Visiting Professor of Practice: A. Winter

Admission

In addition to AUC’s general admission requirements for all MA programs, it is recommended that applicants for the Master of Arts degree in International & Comparative Education have school-based teaching or educational leadership experience prior to admission into the program, or that they will acquire this experience concurrently with enrollment in 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.

Master of Arts in International & Comparative Education

A total of 33 credit hours (11 hours) are required for MA students. Students may pass content examinations in human development, learning theories, teaching methods and instructional practice in lieu of two of the required content core courses. Students who pass one or both of the examinations referred to above will be able to complete the MA requirements by taking a total of 27 or 33 credit hours (9 or 10 courses).

Courses

The following courses represent the Content Core Subjects required of all students. Two of these may be satisfied if the MA student passes a content-based exam.

- EDUC 511 - Foundations of Educational Research (3 cr.)
- EDUC 521 - Social Foundations of Education (3 cr.)
- EDUC 531 - Introduction to International & Comparative Education (3 cr.)
- EDUC 541 - Human Development & Learning Theories for Classroom Teachers (3 cr.)
  A candidate may be exempted from this course if they pass a content-based examination.
- EDUC 551 - Foundations of Instructional Practice for Classroom Teachers (3 cr.)
  A candidate may be exempted from this course if they pass a content-based examination.
- EDUC 590 - MA Capstone (Thesis or Equivalent; Practicum for IEPP) (3 semester hours)

Concentrations

Each student will select one of the following concentrations: Teaching and Learning, Educational Leadership, or International Education Policy & Planning. Students must take a minimum of three courses from their concentrations.
1. Teaching and Learning

Students in the Teaching & Learning Track are required to complete the following courses, or substitute up to two courses from the other concentrations:

- EDUC 552 - The Potential of Emerging Technologies as Transformative Learning Tools (3 cr.)
- EDUC 554 - Reading and Writing in the Content Area Classroom (3 cr.)
- EDUC 556 - Action Research (3 cr.)
- EDUC 557 - Reaching Diverse and Underserved Learners (3 cr.)
- EDUC 595 - Supervised Fieldwork (3 cr.)

2. Educational Leadership

Students in the Educational Leadership Track are required to complete the following courses, or select up to two courses from the other concentrations:

- EDUC 542 - Transformational Leadership (3 cr.)
- EDUC 544 - School Governance and Management (3 cr.)
- EDUC 546 - Organizational Theory and Educational Institutions (3 cr.)
- EDUC 573 - Research-based Instructional Leadership (3 cr.)
- EDUC 595 - Supervised Fieldwork (3 cr.)


Students in the International Education Policy & Planning Track are required to complete the following courses or select up to two courses from the other concentrations:

- EDUC 532 - globalization, Development, and Educational Reform in the Arab World (3 cr.)
- EDUC 533 - Comparative Gender, Adolescent, Youth, and Human Development Policy (3 cr.)
- EDUC 534 - Strategic Educational Planning and Development (3 cr.)
- EDUC 536 - Human Rights-based Education (3 cr.)
- EDUC 575 - Educational Policy Analysis (3 cr.)
- EDUC 595 - Supervised Fieldwork (3 cr.)

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 Forced Migration and Refugee Studies (FMRS) simultaneously or sequentially, and to cross count 4 courses (12 credits) with the advice and
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.

Course Requirements

The International Human Rights Law MA degree requires a total of 27 credits hours.

There are five required courses:

- LAW 509 - International Law (3 cr.)
- LAW 510 - Introduction to International Human Rights and Humanitarian Law (3 cr.)
- LAW 527 - Graduate Law Seminar (3 cr.)

Two out of the following three courses:

- LAW 513 - The European System of Human Rights Protection (3 cr.)
- LAW 514 - Human Rights in the Middle East (3 cr.)
- LAW 519 - Human Rights in Africa (3 cr.)

The remaining four 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 Right 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 599 - Research Guidance/Thesis (no cr., graded)

Degree Time Framework

Fulfilling the M.A. in International Human Rights Law normally calls for two years of study.
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 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 who have below a 3.0 cumulative GPA from 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.

Students who do not have an undergraduate degree in a mass communication major from AUC may be asked to complete a set of readings and/or a program of undergraduate prerequisite courses completed with grades of B or higher.

In addition to the general requirements established by the university, the applicant must demonstrate a proficiency in English at an advanced level and obtain an acceptable score on the Graduate Record Examination (GRE)

Students are also required to submit two recommendation letters from relevant, credible sources and a personal statement of purpose, which is evaluated for its 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 to submit an updated curriculum vitae, official transcripts of all university degrees, and samples of professionally published or broadcast work if available.

A writing sample 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. Writing samples may include a term paper, a chapter from an Honors or M.A. thesis, or a conference paper. If the student has graduated more than three years ago, he/she should include an essay of 300-500 words about a recent local, regional, or international communication issue that he/she deems important.

Applicants may be required to take an entry exam administered by the department to measure their writing skills and their overall awareness of the communication field and the word around them. Applicants may also be required to sit through a personal interview.

Admission Checklist:

- GRE Scores
- Official transcripts
Proof of English language proficiency
Two letters of recommendation
Personal statement
Curriculum vitae
Samples of published/ broadcast work
Writing sample

Courses

A minimum of 27 graduate credit hours is required, including the following four core courses:

- JRMC 500 - Mass Communication Theory and Literature (3 cr.)
- JRMC 502 - Current Issues in Mass Communication (3 cr.)
- JRMC 504 - Research Methods in Mass Communication (3 cr.)
- JRMC 550 - Seminar in International Communication (3 cr.)

Note

Students should complete the following courses as early after admission to the program as possible.

- JRMC 500 - Mass Communication Theory and Literature (3 cr.)
- JRMC 504 - Research Methods in Mass Communication (3 cr.)

Additional Requirements

Additional coursework should come 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 500-level courses (9 hours) from other disciplines. A maximum of six credit hours of 400-level coursework may be approved and counted toward the required credit hours.

Master of Arts Courses

- JRMC 500 - Mass Communication Theory and Literature (3 cr.)
- JRMC 501 - Advanced Reporting and Writing (3 cr.)
- JRMC 502 - Current Issues in Mass Communication (3 cr.)
- JRMC 504 - Research Methods in Mass Communication (3 cr.)
- JRMC 506 - Internship (3 cr.)
- JRMC 550 - Seminar in International Communication (3 cr.)
- JRMC 570 - Seminar in Mass Communication and National Development (3 cr.)
- JRMC 580 - Impact of Television: Issues and Developments (3 cr.)
- JRMC 590 - Special Topics (3 cr.)

Comprehensive Examination

Master of Arts students must complete the following courses in preparation for the comprehensive examination. The examination procedure is described in the “General Requirements” section. An oral examination may be required in
addition to the written examination. Students must pass comprehensive examinations before being permitted to begin work on their theses.

- JRMC 500 - Mass Communication Theory and Literature (3 cr.)
- JRMC 502 - Current Issues in Mass Communication (3 cr.)
- JRMC 504 - Research Methods in Mass Communication (3 cr.)
- JRMC 550 - Seminar in International Communication (3 cr.)

**Thesis**

A thesis is required for all students. The department's thesis committee must approve the thesis topic after the student, in consultation with an advisor, submits a formal proposal. Written in English, the thesis must be defended by the student before faculty members, and must conform to current university requirements, policies and procedures.

**Middle East Studies (M.A.)**

Consistent with the mission of the School of Global Affairs and Public Policy, 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.

**Master of Arts**

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.

**Admission**

Students are normally admitted to the MA degree program in the fall only. The application deadline for fall 2011 is February 1 for application with a fellowship and April 1 for application without a fellowship. Students who are offered admission must indicate their intention to enroll by May 15 and pay a deposit to hold their place.

**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 202.

Proficiency is tested by an examination administered by the Arabic Language Institute. 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 598 and 599. The following two courses are required:

- MEST 569 - A Critical Introduction to Middle East Studies (3 cr.)
- MEST 570 - Interdisciplinary Seminar in Middle East Studies (3 cr.)

Students must choose three of the following eight courses:

- An approved 400 or 500 level course in modern Arabic literature.
- ARIC 451 - Islamic Institutions (3 cr.)
- ARIC 542 - Seminar on the Nineteenth-Century Middle East (3 cr.)
- GWST 501 - Approaches to Middle East/ North Africa Gender and Women’s Studies (3 cr.)
- ECON 511 - Economic Development in Middle East Countries (3 cr.)
- LAW 505 - Islamic Law Reform (3 cr.)
- POLS 535 - Middle East Politics (3 cr.)
- SOC/ANTH 503 - Middle Eastern Societies and Cultures (3 cr.)

Note

The other five courses (or three for thesis writers) may be selected from 400 or 500 level courses related to the Middle East in Anthropology/Sociology, Arabic Studies, Economics, Gender and Women’s Studies, History, Law, Middle East Studies and Political Science. No more than two 400 level courses may be counted towards the degree and only one course originally at the 400 level but for which requirement are added to raise it to 500 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.

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.

Admission

Applicants seeking admission to the Master’s program should have an undergraduate degree of high standing (equivalent of a B grade or higher) within the field of Humanities and/or Social Sciences 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.

Requirements:

Course Requirements

The MA program requires the successful completion of 8 courses (24 credit hours). These include five required core courses plus three elective courses.

Students must choose 5 courses out of the following 6 core courses:

- MRS 502 - Comparative Migration Policies (3 cr.)
- MRS 507 - Introduction to Forced Migration and Refugee Studies (3 cr.)
- MRS 518 - International Refugee Law (3 cr.)
- MRS 500 - Migration & Refugee Movements in the Middle East and North Africa (3 cr.)
- MRS 501 - International Migration & Development (3 cr.)
- MRS 576 - Methods of Research with Forced Migrants & Refugees: Issues in Forced Migration (3 cr.)

Two electives must be chosen from the CMRS list of electives offered each semester. One elective can be chosen from the LAW department from among the following International Human Rights courses:

- LAW 514 - Human Rights in the Middle East (3 cr.)
- LAW 516 - Economic, Social, and Cultural Rights (3 cr.)
- LAW 519 - Human Rights in Africa (3 cr.)

Thesis Requirements

All students must complete a thesis according to university regulations. Before commencing work on the 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 must register for course MRS 599 “Research Guidance and 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.

Time Line

Completion of the Masters Degree in Migration and Refugee Studies will normally take 2 years.
Philosophy (M.A.) starting Fall 2013

We will accept applications for this program for Fall 2013.

Mission and Goals:

The mission statement of the M.A. program in Philosophy (reflecting those of the Department and the University) is as follows:

Engaging in graduate study in philosophy is to engage in a process of coming to understand one’s self and one’s place in the world. The M.A. in Philosophy is devoted to this endeavor through its content and form. It engages students in asking questions about the possibility of knowledge, the nature of morality, beauty and aesthetic experience, the meaning of religious experience, the justification and limits of power, and the purpose and meaning of philosophical inquiry itself. And it holds that to be successful in this enquiry clear and careful thinking, the ability to question deeply held assumptions and attitudes, and a commitment to sound reasoning and careful appraisal of evidence is needed.

The goal of the M.A. in Philosophy is therefore to offer the highest quality liberal arts education to our future graduate students. Our Philosophy postgraduates will finish this M.A. program with an in-depth knowledge of the processional discipline as well as the detailed understanding of the history of ideas more generally. This entails rigorous training in rational and critical 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.

In the words of the executive director of the American Philosophical Association, “The skills that philosophy teaches you are wonderfully transferable.” Our program aims at teaching students advanced philosophical skills, which they will be able to usefully apply either within the context of a future professional career of as preparation for entering a Ph.D. program at another institution. Students often register for graduate study in Philosophy because of their love of the discipline, rather than for any utilitarian purpose.

Requirements

The M.A. in Philosophy will be aimed at any undergraduate with a background in the study of philosophy. A minimum of twenty-four graduate hours will be required.

Eight courses must be taken, at least six of which must be taken within the Department of Philosophy at the 500 level. Students will be required to follow the Philosophy Graduate Core, a series of advanced 500 level seminars that are open only to Masters students. Two such 500 level seminars will be taught each semester. The Department will also offer a series of electives: a select number of undergraduate courses that can also be taken at the 500 level.

A maximum of two courses will be able to be taken within other departments at AUC, at either the 400 or 500 level but only with 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 elect for credit at least one of the courses (at an appropriate level) offered by the Arabic Language Institute. Although AUC does not currently offer formal instruction in modern European language, students intending to write a thesis within the sphere of Continental Philosophy will be required to have a basic reading knowledge of either French or German. Any student who wishes to write a thesis in the sphere of Continental Philosophy but who lacks such knowledge is strongly encouraged to privately arrange some tuition outside
of AUC. Non-native English speakers should meet normal university requirements but may not be accepted if their application reveals an inadequate command of English for the program.

Before commencing work upon the thesis students will be required to write and defend a thesis proposal before three departmental members. The thesis itself should take the form of a research paper of approximately 15,000 words in length. There will also be a final defense of the finished thesis.

The Philosophy Graduate Program Director will organize a series of (non-credit) seminars at the beginning of every academic year, which all graduate students will be expected to attend in order to ensure that they possess the research and academic writing skills requisite for tackling the thesis (PHIL 599). This training will be further reinforced by the course requirements for the Department’s Philosophy Graduate Core courses, in which the students will be required to find and engage with relevant secondary readings.

Breakdown of Courses

4 Philosophy Graduate Core courses and 4 optional courses (2 of which can be taken within other departments) and a thesis (PHIL 599 (no cr.)):

Required Philosophy Graduate Core:

- PHIL 500 - Classical Western Philosophy (3 cr.)
- PHIL 501 - Advanced Seminar in Islamic Philosophy (3 cr.)
- PHIL 504 - Kant and Idealism (3 cr.)
- PHIL 505 - Advanced Seminar in Phenomenology (3 cr.)

Optional Philosophy Graduate Courses:

- PHIL 502 - Metaphysics (3 cr.)
- PHIL 503 - Selected Topics in Philosophy (3 cr.)
- PHIL 510 - Advanced Seminar in Aesthetics (3 cr.)
- PHIL 517 - Current Trends in Philosophy (3 cr.)
- PHIL 518 - Philosophical Masterpieces (3 cr.)
- PHIL 520 - Philosophical Figures (3 cr.)
- PHIL 530 - Advanced Ethics (3 cr.)
- PHIL 560 - Philosophy of Language and Communication (3 cr.)
- PHIL 562 - Formal and Mathematical Logic (3 cr.)

Political Science, with specializations in Comparative Politics, International Relations, and Development Studies (M.A.)

The graduate program in Political Science Department offers advanced study in the discipline of Political Science, with particular emphasis and specializations in three areas; Comparative Politics; International Relations, and; Development Studies (previously Professional Development).

The Political Science Department values its location in the heart of the Middle East and seeks, through its faculty, courses and activities, to link the discipline of political science to the thriving and complex political realities of Cairo,
Egypt and the region. Its graduate programs offer students a thorough grounding in the theoretical underpinnings of the political phenomena as well as a deep understanding of political realities in Egypt, the Arab World and the international arena. The programs combine courses aimed at familiarizing students with the knowledge necessary for developing their understanding of these political realities with research seminars that are required for familiarizing students with research methods that they will need to independently analyze complex political phenomena.

The graduate programs are 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 departments concerned with political issues, or in other public, private and international sectors where there is increasingly a need for persons who have a scientific understanding of the political realities of the Middle East and the World.

Students have the option of pursuing a one-year Graduate Diploma or a Master’s degree in any of the three specializations offered by the Department. In addition to the requirements of each option, students will be able to choose elective courses covering the political topics closest to their interest. They are also encouraged to take up to two relevant courses from other departments and units of AUC. The Department works closely with its students to ensure that their chosen courses correspond to and serve their academic and professional goals.

Graduate students constitute an integral part of the academic life of the Political Science Department. They are encouraged to participate, individually and through their association, at the events and activities organized by the Department both inside AUC campus and in the thriving metropolis that constitutes its environment.

**Comparative Politics**

The strength of Comparative Politics at AUC is in the areas of Third World Politics and Development, with greatest faculty expertise being in Egypt and the Middle East. Graduate studies in Comparative Politics seek to increase students’ knowledge about the political dynamics of disparate systems within the larger contexts of state and society, political economy, interstate and regional relations. It seeks to develop skills of analysis and writing in order to enhance students’ understanding of their region of interest and its relations with the world. 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 include examination of current world politics as well as the many dimensions of the international system. This includes regional relations, foreign policies of selected states, as well as Middle Eastern international and interstate relations, and international political economy. The International Relations option seeks to provide greater depth of understanding of the forces operating in the international arena and the constraints that face foreign policy makers. Practice in analyzing current world and regional events and in the skills of written and oral presentation is provided as well as extra curricular activities that are designed to give students the opportunity to put their academic learning into practice. International Relations option is valuable for students who are working or seek to work in foreign relations, either in their own government or in international organizations. The field also prepares students for employment in other kinds of positions that require the ability to analyze and write about national or international politics.

**Development Studies**

Development Studies (previously Professional Development) is designed for those who have an interest in studying the developing world. The program includes (but is not limited to) courses with practical components and requires an
internship usually done in the summer between the first and second years. Development Studies (previously Professional Development) seeks to prepare students to assume positions of greater 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. It seeks to develop students’ critical and analytical capacities, and provide practice in linguistic and writing skills needed for development work. Creativity in finding solutions to development problems is encouraged so that graduates may have an impact in their chosen areas of work in development. Practice in preparing project documents is included in the program. Development Studies (previously Professional Development) is designed for those who are either presently working in development organizations or who are seeking to enter a development career.

Admission

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 from Egyptian universities). Applicants with deficiencies in their preparation may be required to take appropriate courses at the undergraduate level.

The requirements for the specializations are as follows

All specializations have gateway courses that situate each specialization within its theoretical context and provide students with analytic tools for other courses. These introductory courses also prepare students for research and analysis needed for writing original seminar papers and for the thesis.

Requirements

All specializations require the following course:

- POLS 504 - Introduction to Political Science Methods (3 cr.)

Specialization in Comparative Politics

A specialization in Comparative Politics requires the following courses (in addition to POLS 504).

- POLS 501 - Comparative Theory (3 cr.)
- POLS 530 - Regime Change and Democratization (3 cr.)
- POLS 558 - Comparative Politics and the Middle East (3 cr.)

Plus one course from the following:

- POLS 502 - Scope and Method of Developmental Analysis (3 cr.)
- POLS 503 - International Relations Theory (3 cr.)
- POLS 525 - International Political Economy (3 cr.)

In addition, three courses to be chosen in consultation with the Graduate Studies Director, for a total of 24 credit hours.
Specialization in International Relations

A specialization in International Relations requires the following course (in addition to POLS 504).

- POLS 503 - International Relations Theory (3 cr.)

Plus one course from the following:

- POLS 501 - Comparative Theory (3 cr.)
- POLS 502 - Scope and Method of Developmental Analysis (3 cr.)
- POLS 525 - International Political Economy (3 cr.)

Plus two courses from the following:

- POLS 505 - Identity, Culture and Norms in World Politics (3 cr.)
- POLS 510 - Global Governance and World Order(s) (3 cr.)
- POLS 554 - Comparative Foreign Policy: Theories and Applications (3 cr.)
- POLS 555 - Conflict and Security in Global Politics (3 cr.)

In addition, three courses to be chosen in consultation with the Graduate Studies Director, for a total of 24 credit hours.

Specialization in Development Studies

A specialization in Development Studies (previously Professional Development) requires the following courses (in addition to POLS 504):

- POLS 502 - Scope and Method of Developmental Analysis (3 cr.)
- POLS 584 - Practicum: Internship or Research (3 cr.)
- POLS 585 - Project Seminar (3 cr.)
- POLS 586 - Skills in Development Practice (3 cr.)

Plus one course from the following:

- POLS 501 - Comparative Theory (3 cr.)
- POLS 503 - International Relations Theory (3 cr.)
- POLS 525 - International Political Economy (3 cr.)

In addition, two courses to be chosen in consultation with the Graduate Studies Director, for a total of 24 credit hours.

Note

With department approval, students are strongly encouraged to take up to six hours of relevant courses outside the department.
Thesis

A thesis, written in English 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 ahead their program in order to successfully meet the procedural requirements within the specified time frame.

Sociology-Anthropology (M.A.)

The graduate program in sociology and anthropology equips students with the knowledge and skills necessary to understand, critically engage with, and effect change in local, regional, and global communities. Its longstanding tradition of combining scholarship with a commitment to social, economic, and political justice, alongside the quality and diversity of its students and faculty, make the program a dynamic environment for learning and research.

The program emphasizes an interdisciplinary approach to social theory and research. As such, participating faculty focus on a broad set of issues, including media and public culture, memory and social history, power and inequality, development and contentious politics, migration, and transnational studies, as well as gender, religion, and urban studies.

The vibrant and cosmopolitan city of Cairo makes the program’s location ideal for students interested 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, however, encourages and accepts applications from all interested and qualified applicants.

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.

Language

The candidate for the degree must demonstrate proficiency in a language other than English. The language exam is normally taken in Arabic and, in the case of native speakers, is intended to ensure that the student can work as a professional in that language. In certain cases the student may take the exam in a field and/or scholarly language other than Arabic. Students' language skills will be evaluated upon entry into the program for placement purposes and then re-evaluated for proficiency before completing the program.

Courses
Eight courses (24 credits) are required. All students must take: SOC/ANTH 500, SOC/ANTH 501, and SOC/ANTH 598, and either SOC/ANTH 505 or SOC/ANTH 506. 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. A maximum of six hours of 400-level courses in sociology and anthropology or of 500-level courses in other disciplines (including SOC-ANTH-POLS 507 and 508 when taught by faculty outside the SOC-ANTH program) may be taken with departmental approval.

Thesis

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.

Teaching Arabic as a Foreign Language (M.A.)

Professor: El S. Badawi
Assistant Professors: Z. Taha (Director, Arabic Language Institute), R. El Essawi (Director TAFL program)

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 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 with undergraduate specialization in a modern language other than Arabic must take a number of additional courses in the field of Arabic studies. Applicants who are not specialized in Arabic language will need also to take an entrance exam to be offered by ALI to show that applicant has sufficient command of Arabic to qualify for admission into an Arabic language program. 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.

Language

Non-native speakers of Arabic and holders of 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. The level of language proficiency required for admission is not less than the level 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 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.

Courses

A minimum of 30 graduate credit hours and a thesis are required except as indicated in the "Thesis" section below.

Required of all students

- TAFL 501 - Principles of Linguistic Analysis (3 cr.)
- TAFL 503 - Second Language Acquisition (3 cr.)
- TAFL 510 - Methods of Teaching a Foreign Language I (3 cr.)
- TAFL 511 - Methods of Teaching a Foreign Language II (3 cr.)
- TAFL 520 - Research Methods in Applied Linguistics (3 cr.)
- TAFL 553 - Sociolinguistics (3 cr.)
- TAFL 555 - Seminar on Challenges Facing AFL Teachers (3 cr.)

Electives

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 500-level TAFL courses, with the adviser’s approval, electives may include up to two non-TAFL courses. No more than two 400-level courses may be counted toward the degree.

Note regarding required and elective courses:

Both required and elective courses are divided into two phases. Phase one courses include: TAFL 501, 503, 510, 511, and 520. Phase two courses include: TAFL 553, 516, 555, 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.)

Professors Emeriti: S. El Araby, Y. El-Ezabi, E. F. Perry, P. Stevens  
Professor: A. Agameya  
Associate Professors: R. Williams (Director, English Language Institute), M. Plumlee  
Assistant Professors: L. Fredricks, A. Gebril

The graduate programs in Teaching English to Speakers of Other Languages (TESOL) are designed to enhance knowledge, skills, and effectiveness of teachers, researchers, and administrators in the profession. These programs attract an international student body and combine rigorous academic standards with an appropriate balance between theory and practice.

Admission

Applicants for the Master of Arts degree in TESOL must have teaching experience prior to admission into the program, or may 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.

Courses

Required of all students:

- TESL 500 - English Grammar (3 cr.)
- TESL 501 - Principles of Linguistic Analysis (3 cr.)
- TESL 502 - Assessment in Language Learning (3 cr.)
- TESL 503 - Second Language Acquisition (3 cr.)
- TESL 510 - Methods of TESOL I (3 cr.)
- TESL 511 - Methods of TESOL II (3 cr.)
- TESL 520 - Research Methods in Applied Linguistics (3 cr.)

For thesis writers:

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.

Electives

In choosing electives, students with assistance of their advisors, are to choose at least one course from two of the groups listed below.

1. Education and research:
• TESL 507 - Computer Assisted Language Learning (CALL) (3 cr.)
• TESL 540 - Selected Topics in Applied Linguistics (1, 2, or 3 cr.)
• TESL 570 - Proposal Writing (3 cr.)

2. Linguistics:

• TESL 521 - English Syntax (3 cr.)
• TESL 540 - Selected Topics in Applied Linguistics (1, 2, or 3 cr.)
• TESL 548 - Corpus Linguistics (3 cr.)
• TESL 550 - Language Pragmatics (3 cr.)

3. Cross-linguistic, cross-cultural studies:

• TESL 525 - Language Transfer, Contrastive Analysis, and Error Analysis (3 cr.)
• TESL 540 - Selected Topics in Applied Linguistics (1, 2, or 3 cr.)
• TESL 550 - Language Pragmatics (3 cr.)
• TESL 553 - Sociolinguistics (3 cr.)

Note

In the case of TESL 540 Selected Topics in Applied Linguistics, the course topic must relate to the general category.

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 as a requirement for graduation is optional. The student who chooses to write a thesis must produce a professional paper on some aspect of TESOL/applied linguistics. 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.

Television and Digital Journalism (M.A.)

Master’s Degree in Television & Digital Journalism

Offered through the Kamal Adham Center for Television and Digital Journalism. Consistent with the mission of the School of Global Affairs and Public Policy, our program encompass a number of interdisciplinary courses.

The Master’s degree in Television & Digital Journalism is intended to provide comprehensive knowledge of the theories and practice of television journalism and new media. Students receive intensive hands-on exposure to the skills
needed to produce both field reports and in-studio programs. This includes both editorial and technical skills, such as script-writing, use of camera, editing and studio operations, as well as seminars on issues of ethics and responsibility. The program also gives students the opportunity broadcast their production on AUC TV, which is linked to all TV sets on campus as well as on AUC TV website.

**Admission**

In addition to the other JRMC departmental requirements for admission to graduate study, all applicants will be personally interviewed by the director. Applicants with slightly lower GPA may be accepted after demonstrating professional news writing experience as determined by the program director. Applicants who have not taken JRMC 201 Mass Media Writing and JRMC 337 TV Scriptwriting and Production must take these courses as prerequisites and obtain a grade of B or higher prior to beginning the graduate program.

**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:

- JRMC 537 - TV News Gathering and Script Writing (3 cr.)
- JRMC 538 - Arabic TV Script Writing (3 cr.)
- JRMC 539 - TV Presentation and Voice Coaching (3 cr.)
- JRMC 541 - Digital Camera Production (3 cr.)
- JRMC 542 - Digital Video Editing (3 cr.)
- JRMC 545 - Broadcast News Intensive I (3 cr.)
- JRMC 546 - Broadcast News Intensive II (3 cr.)
- JRMC 559 - TV Interviewing & Talk Show Hosting (3 cr.)
- JRMC 571 - Digital Journalism (3 cr.)

All students must also take two (2) of the following:

- JRMC 444 - Media Law and Policy (3 cr.)
- JRMC 460 - Audio Production (3 cr.)
- JRMC 501 - Advanced Reporting and Writing (3 cr.)
- JRMC 506 - Internship (3 cr.)
- JRMC 550 - Seminar in International Communication (3 cr.)
- JRMC 580 - Impact of Television: Issues and Developments (3 cr.)
- JRMC 590 - Special Topics (3 cr.)

Although not required, JRMC 506 Internship is strongly recommended to all students admitted into specialization. Students must undertake a production project, which consist of a videotaped special news report and a written introductory paper justifying the approach taken in the context of television new-gathering and production theory.

**Internship**

A six-week summer internship in a broadcast news organization is a required element of the TV & Digital Master’s. Students will be offered the opportunity for placement in either foreign TV news bureaus/Arab satellite channels or internet news organizations based in Egypt or at the headquarters and bureaus of Arab and Western television/internet
news organizations. A third option will be enrollment in summer broadcast or online journalism intensives offered at select overseas universities (with approval of sequence director).

Thesis and Comprehensive Exams

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. Those students who desire a thesis degree in preparation for eventual PhD study must, in addition to the requirement above, take JMC 500, 502, 504 and 550, sit for comprehensives and enroll for a thesis. In some cases, with approval, they may be allowed to take some of those courses while they are completing the core requirements.

Master of Business Administration (MBA)


Master of Business Administration (MBA)

The MBA is a professional degree designed to prepare students who have completed undergraduate work in any academic discipline and intend to pursue a management career. The curriculum emphasizes the principles underlying business operations as well as advanced technical knowledge in relevant specializations. It provides tools for analysis and helps develop a managerial perspective. Advanced specialized and elective courses provide the necessary skills in a functional area of business. The MBA program is accredited by the Association to Advance Collegiate Schools of Business (AACSB).

Admission

All applicants must satisfy the university's graduate admission requirements and obtain an acceptable score on the Graduate Management Admission Test (GMAT). In addition, applicants should have three or more years of relevant professional experience. To obtain the MBA degree, a minimum of 33 semester credit hours and a maximum of 48 credit hours are required. The exact number of credits will be determined according to the educational background of each candidate.

MBA Foundation Courses (3-27 credits)

The MBA Foundation courses are directed at providing the student with a basic background in the various functional areas of Business. Between one and nine courses are required for the completion of foundation courses. These courses are usually chosen from the following list:
- ACCT 501 - Financial Reporting and Analysis (3 cr.)
- FINC 527 - Managerial Economics (3 cr.)
- FINC 540 - Financial Management (3 cr.)
- MGMT 501 - Business Communication (3 cr.)
- MGMT 502 - Managing in a Dynamic Environment (3 cr.)
- MKTG 520 - Marketing Management (3 cr.)
- MOIS 508 - Information Systems in Organizations: Management in the Information Age (3 cr.)
- OPMG 507 - Introduction to Business Statistics (3 cr.)
- OPMG 520 - Operations Management for Competitive Advantage (3 cr.)

**MBA Electives and Concentration (18-27 credits)**

Advanced coursework for the MBA constitutes a diversified program aiming at providing the student with:

- General background in the concepts, processes, and institutions of finance, marketing, personnel, and operations management
- Decision-making tools and techniques such as accounting, quantitative methods, and management information systems
- Organizational theory, economic analysis, and business policy and strategy

**Students must take a minimum of 9-12 credit hours that covers at least three of the following business areas:**

- Finance
- International Business
- Leadership and Human Resources Management
- Management of Information Technology
- Marketing
- Operations Management
- Construction Industry

**Students may concentrate in one of these areas (except Accounting) by taking at least three courses in that area (9 credit hours).**

**Accounting**

- ACCT 502 - Managerial Accounting for Decision Making (3 cr.)

**Finance**

- FINC 541 - Investments (3 cr.)
- FINC 542 - International Financial Markets (3 cr.)
• FINC 543 - Financial Institutions and Markets (3 cr.)
• FINC 544 - Corporate Financial Policy (3 cr.)
• FINC 545 - Private Equity and Venture Capital (3 cr.)
• FINC 546 - Financial Analysis, Planning and Valuation (3 cr.)
• FINC 570 - Selected Topics in Financial Management (3 cr.)
• FINC 575 - Independent Study in Financial Management (1-3 cr.)

International Business

• FINC 542 - International Financial Markets (3 cr.)
• MGMT 506 - Management of International Business Organizations (3 cr.)
• MGMT 507 - Global Business Strategy (3 cr.)
• MGMT 575 - Independent Study in Management (1-3 cr.)
• MKTG 524 - Global Marketing (3 cr.)

Leadership and Human Resources Management

• MGMT 503 - Leading Change in Organizations (3 cr.)
• MGMT 504 - Human Capital Strategy (3 cr.)
• MGMT 509 - Leadership (3 cr.)
• MGMT 510 - Entrepreneurship and Innovation (3 cr.)
• MGMT 511 - Strategic Management of Innovation (3 cr.)
• MGMT 570 - Selected Topics in Management (3 cr.)
• MGMT 575 - Independent Study in Management (1-3 cr.)

Management of Information Technology

• MOIS 517 - Technology and Innovation Management (3 cr.)
• MOIS 549 - Systems Analysis, Design, and Implementation (3 cr.)
• MOIS 550 - Information Technology (3 cr.)
• MOIS 551 - Electronic Business: Doing Business in the Digital Economy (3 cr.)
• MOIS 555 - Information Strategy (3 cr.)
• MOIS 570 - Advanced Topics (Next Generation Technologies) (3 cr.)
• MOIS 575 - Independent Research in Management of Information Systems/Technology (1-3 cr.)

Marketing

• MKTG 521 - Marketing Research Methods (3 cr.)
• MKTG 522 - Marketing Channel Strategies (3 cr.)
• MKTG 523 - Sales Force Management (3 cr.)
• MKTG 524 - Global Marketing (3 cr.)
• MKTG 526 - Integrated Marketing Communication (3 cr.)
• MKTG 530 - Strategic Marketing (3 cr.)
• MKTG 570 - Contemporary Topics in Marketing (3 cr.)
• MKTG 575 - Independent Study in Contemporary Topics in Marketing (1-3 cr.)
Operations Management

- OPMG 521 - Managing and Coordinating Supply Chains (3 cr.)
- OPMG 528 - Managing Dynamic Projects (3 cr.)
- OPMG 530 - Data Analysis (3 cr.)
- OPMG 531 - Stochastic Models in Managerial Decision Making (3 cr.)
- OPMG 532 - Operations Strategy (3 cr.)
- OPMG 533 - Business Dynamics (3 cr.)
- OPMG 570 - Selected Topics in Operations Management (3 cr.)
- OPMG 575 - Independent Study in Operations Management (1-3 cr.)

Construction Industry

Students may concentrate in the Construction Industry by taking at least four courses in that area (12 credit hours)

- CENG 530 - Contracts in Construction Industry (3 cr.)
  ** Mandatory for students who do not have a degree in Construction Engineering from AUC. Not open for AUC students with a degree in construction engineering.
- CENG 531 - Construction Management (3 cr.)
- CENG 532 - Planning, Scheduling and Control (3 cr.)
  ** Mandatory for students who do not have a degree in Construction Engineering from AUC. Not open for AUC students with a degree in construction engineering.
- CENG 533 - Management for Multi-National Environments (3 cr.)
  * Not open for AUC students in construction engineering students with a concentration in Construction Management.
- CENG 534 - Risk Management and Bidding Strategies (3 cr.)
  * Not open for AUC students in construction engineering students with a concentration in Construction Management.
- CENG 535 - Claims and Disputes in the Construction Industry (3 cr.)
- CENG 536 - Systems Analysis for Construction (3 cr.)
- CENG 537 - Resource Management for Construction Projects (3 cr.)
- CENG 538 - Procurement of Assets & Services for Construction Projects (3 cr.)
- CENG 567 - Construction Leadership and Management Skills (3 cr.)

MBA Capstone Course (3 credits)

Finally, a capstone course, the following is required for all MBA candidates:

- MGMT 508 - Strategic Management (3 cr.)

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 48 credit hours are required.

EMBA Program Structure

The EMBA program is delivered in a highly interactive modular format. It consist of 23 modules for a total of 48 credit hours to satisfy the requirements of the program at AUC. Classes are on monthly basis and are held on long weekends, alternating between three days weekend in one month (Thursday to Saturday) and five days weekend in the other month (Thursday to Monday) and so on.

Program Details

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

Section 1: General Management Perspectives:

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 601 - Change Management and Global Transformation (1.75 cr.)
- EMBA 602 - Team-work & Communication (1.75 cr.)
- EMBA 603 - Data Analysis and Analytical Decision Modeling for Optimizing Decisions (2 cr.)
Section 2: Business Core:

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 604 - Managerial Economics (1.75 cr.)
- EMBA 605 - Strategic Accounting (1.75 cr.)
- EMBA 606 - Financial Management (2 cr.)
- EMBA 607 - Corporate Financial Management (1.75 cr.)
- EMBA 608 - Talent Management, Coaching & Mentoring (1.75 cr.)
- EMBA 609 - Managerial Decision Making and Operation Management (2 cr.)
- EMBA 610 - Global Marketing Management (International Live-in Module) (2.75 cr.)
- EMBA 611 - Competitive & Corporate Strategy (International Live-in Module) (2.75 cr.)
- EMBA 612 - E- Business & Managers’ Toolkit (2 cr.)

Section 3: Managerial Global Leadership:

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; 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 613 - Leadership & Management (1.75 cr.)
- EMBA 614 - Innovation and Creating the Best Practices of Tomorrow (1.75 cr.)
- EMBA 615 - Global Supply Chain Management and Operational Excellence (2 cr.)
- EMBA 616 - Negotiation & Conflict Management (1.75 cr.)
- EMBA 617 - Entrepreneurial Management (1.75 cr.)
- EMBA 618 - Doing Business With The East (International Live-in Module) (2.75 cr.)
- EMBA 619 - Doing Business With The East (International Live-in Module) (2.75 cr.)

Section 4: Advanced Business Core:
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 620 - Corporate Governance & Social Responsibility (2 cr.)
- EMBA 621 - Business & Legal Environment (1.75 cr.)
- EMBA 622 - Development & Rationale for Competitive Law (1.75 cr.)

Section 5: Integrating Project:

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 623 - Adapting to Global Environment - Integration Consultation Project (4 cr.)

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)

Eleven courses (33 credit hours) are required: Two core courses (6 credit hours), and Nine electives (27 credit hours).

Core Courses (6 credit hours)

All candidates must take Two core courses to be chosen from the following four courses:

- CSCE 525 - Algorithms and Complexity Theory (3 cr.)
- CSCE 530 - Advanced Processor Architecture (3 cr.)
- CSCE 545 - Distributed Systems (3 cr.)
- CSCE 565 - Advanced Artificial Intelligence (3 cr.)

Elective Courses (27 credits)

Nine courses to be chosen from a list of 12 courses that includes the 2 courses not taken from the above list and the following 10 courses:

- CSCE 527 - Neural Networks and Genetic Algorithms (3 cr.)
- CSCE 529 - Design and Analysis of Parallel Algorithms (3 cr.)
- CSCE 532 - Parallel Computer Architecture (3 cr.)
- CSCE 535 - High Speed Networks (3 cr.)
- CSCE 541 - Advanced Software Engineering (3 cr.)
- CSCE 543 - Advanced Software Quality (3 cr.)
- CSCE 555 - Computer Graphics and Animation (3 cr.)
- CSCE 563 - Digital Image Processing (3 cr.)
- CSCE 567 - Computer Vision (3 cr.)
- CSCE 585 - Selected Topics in Computer Science (3 cr.)
- CSCE 591 - Capstone Project in Computing (3 cr.)

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
- Detailed knowledge in management, systems, design and materials in construction engineering.
- Extensive knowledge in an area of student interest from one of the fields involved in construction engineering.
- Awareness of the local and global context in which construction engineering is practiced, 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- 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 400-level course, not in the student’s undergraduate major may be taken for graduate credit, subject to approval of the advisor.

Electronics Engineering (M. Eng.)

The Master of Engineering Degree in Electronics 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.

1. Program Objectives

The objectives of the Master of Engineering Degree in Electronics Engineering are to provide the graduates of the program with:

- Detailed knowledge in product, systems, design and materials in electronics engineering.
- Extensive knowledge in an area of student interest from one of the fields involved in electronics engineering.
- Awareness of the local and global context in which electronics engineering is practiced, 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.

2. Admission

Admission requirements are the same as those for the Master of Science Program.

3. 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 511 - Computational Methods in Engineering (3 cr.)
• ENGR 512 - Experimental Methods in Engineering (3 cr.)
• ENGR 516 - Engineering for a Sustainable Environment (3 cr.)
• ENGR 518 - Engineering Statistics (3 cr.)

Concentration Courses** (30 credit hours)

Candidates must select at least eight courses out of the following EENG course list:

• EENG 510 - Advanced Solid-State Devices (3 cr.)
• EENG 516 - Analog Integrated Circuit Design (3 cr.)
• EENG 517 - Digital Integrated Circuit Design (3 cr.)
• EENG 518 - Advanced Integrated Circuit Design (3 cr.)
• EENG 520 - Advanced Digital Communications (3 cr.)
• EENG 521 - Wireless Communication Systems (3 cr.)
• EENG 522 - Stochastic Processes for Engineers (3 cr.)
• EENG 524 - Enabling Technologies for High Date Rate Communications (3 cr.)
• EENG 525 - Digital Signal Processing (3 cr.)
• EENG 526 - Information Theory and Coding (3 cr.)
• EENG 530 - Advanced Computer Networks (3 cr.)
• EENG 541 - Microwave Circuit Analysis and Design (3 cr.)
• EENG 547 - RF and Microwave Systems (3 cr.)
• EENG 548 - RF Integrated Circuit Design (3 cr.)
• EENG 549 - Antennas Design and Applications (3 cr.)
• EENG 553 - Fault-tolerant Computing and Reliability Modeling (3 cr.)
• EENG 556 - Networked Control Systems Design & Applications (3 cr.)
- EENG 594 - Advanced Topics in Electronics Engineering (3 cr.)

**Note:**

Subject to the approval of the advisor and graduate director the candidate is permitted to take six credit hours towards the following two options:

1. one 400-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 (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 EENG department.

**Electronics Engineering with Concentration in Management of Technology (M. Eng.)**

The Master of Engineering Degree in Electronics Engineering with Concentration in Management of Technology prepares students for higher level professional practice in local and international markets. It is intended for electronics engineers who wish to master the practice in their field of specialty, as well as understanding the notion of technology and innovation as key to wealth creation, competitiveness and sustainable economic and social development. Potential students can come from academia, multinational corporations, government sectors, and owners, managers and employees of private/public sector companies.

1. Program Objectives

The objectives of the program are:

- To provide students with solid knowledge in product and systems design in electronics engineering.
- To train students to solve unstructured engineering problems, think critically, function well in a team, and communicate effectively.
- To educate students on high standard of written and oral communication on technical matters.
- To enable students to manage and guide technology-based organization in a changing environment
- To expose students to methods of integrating technology and business strategies
- To educate student on methods to develop an organizational structure and necessary functions that permit sustainable success.

2. Admission

Admission requirements are the same as those for the Master of Science in Electronics Engineering program.

3. Courses (33 credit hours)

A minimum of eleven courses (33 credit hours) are required.
The EENG courses are selected from the following categories:

**Concentration Courses** *(24 credit hours)*

Candidates must select at least 7 courses out of the following list of 15 courses:

- EENG 510 - Advanced Solid-State Devices (3 cr.)
- EENG 516 - Analog Integrated Circuit Design (3 cr.)
- EENG 517 - Digital Integrated Circuit Design (3 cr.)
- EENG 518 - Advanced Integrated Circuit Design (3 cr.)
- EENG 520 - Advanced Digital Communications (3 cr.)
- EENG 521 - Wireless Communication Systems (3 cr.)
- EENG 522 - Stochastic Processes for Engineers (3 cr.)
- EENG 524 - Enabling Technologies for High Date Rate Communications (3 cr.)
- EENG 525 - Digital Signal Processing (3 cr.)
- EENG 526 - Information Theory and Coding (3 cr.)
- EENG 530 - Advanced Computer Networks (3 cr.)
- EENG 541 - Microwave Circuit Analysis and Design (3 cr.)
- EENG 547 - RF and Microwave Systems (3 cr.)
- EENG 548 - RF Integrated Circuit Design (3 cr.)
- EENG 549 - Antennas Design and Applications (3 cr.)
- EENG 553 - Fault-tolerant Computing and Reliability Modeling (3 cr.)
- EENG 556 - Networked Control Systems Design & Applications (3 cr.)
- EENG 594 - Advanced Topics in Electronics Engineering (3 cr.)

*Note:*

Subject to the approval of the advisor and graduate director the candidate is permitted to take three credit hours from one of the following two options:

1. one 400-level or graduate-level course (3 credit hours) from outside the department and within the School of Sciences and Engineering;
2. Graduate Independent Study (EENG 580) course (1 to 3 credit hours).

**MoT Courses (9 credit hours)**

Candidates must select 3 courses out of the following list:

- EENG 570 - New Product Design and Development (3 cr.)
- EENG 571 - Technology and Innovation Management (3 cr.)
- EENG 572 - Strategic Management of Innovation (3 cr.)
- EENG 573 - Entrepreneurship and Innovation (3 cr.)

**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 provide the graduates of the program with:

- Extensive knowledge in fundamental environmental engineering science, the interactions of pollutants in water, air, and subsurface environments, and the design of treatment / pollutant remediation systems.

- In-depth knowledge in an area of student interest deriving from one of the areas of environmental engineering noted above, including applications in environmental hydraulics, solid and hazardous waste engineering, and management of environmental control systems.

- Awareness of the local and global context in which environmental engineering is practiced, including economic and business practices, societal needs, and considerations of public health, safety, culture and ethics.

- An ability to solve unstructured engineering problems of social significance, think critically, and function well in a team.

- A high and ethical 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 33 credit hours as follows:

**I- Engineering core (6 credits)**

- ENGR 516 - Engineering for a Sustainable Environment (3 cr.)

One course (3 cr.) is selected out of

- ENGR 511 - Computational Methods in Engineering (3 cr.)
- ENGR 512 - Experimental Methods in Engineering (3 cr.)
- ENGR 518 - Engineering Statistics (3 cr.)

**II- Environmental Engineering core (15 credits)**

- ENVE 561 - Water Quality Control (3 cr.)
- ENVE 562 - Unit Operations in Environmental Engineering (3 cr.)
- ENVE 564 - Air Pollution Control Engineering (3 cr.)
• ENVE 566 - Solid and Hazardous Wastes Engineering (3 cr.)
• ENVE 567 - Environmental Chemistry (3 cr.)
• ENVE 569 - 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 400-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.

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- Engineering and Mechanical Engineering core (21 credits)

Students must complete 21 credits in graduate mechanical engineering courses.

II- Elective Courses (9 credit hours)

Students may elect to take three courses (9 credits). A minimum of two courses must be taken from offerings in mechanical engineering/engineering disciplines (including ENGR). No more than one 400-level course, not in the
student’s undergraduate major may be taken for graduate credit, subject to approval of the advisor and department chair.

III- Capstone project (3 credits)

Students are required to attend the library and writing modules of ENGR 590 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.

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 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 broad foundation in both the theoretical and the practical skills of RCS S interdisciplinary knowledge space,
2. Integrate fundamental and advanced knowledge to solve complex interdisciplinary problems in the field of RCS S,
3. Work independently as well as collaboratively within interdisciplinary teams and prepared to be team leaders,
4. Demonstrate competitive professional advancement, and engage in advanced academic and research in areas of their interest within industry, research centers, and academia both in local and global environment.

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 501 - Robotics: Kinematics, Dynamics and Control (3 cr.)
- RCSS 502 - Embedded Real Time Systems (3 cr.)
- RCSS 503 - Modern Control Design (3 cr.)
- RCSS 504 - Applied Estimation (3 cr.)

II. Group II (18 credit hours)

A minimum of 18 credit hours are required from this list of courses:

- RCSS 521 - Intelligent and Autonomous Robotic Systems (3 cr.)
- RCSS 522 - Mechatronics Innovations and Experimental Robotics (3 cr.)
- RCSS 523 - Bioinspired Robotics and Multi Robotic Systems (3 cr.)
- RCSS 524 - Robotics and Intelligent Automated Manufacturing (3 cr.)
- RCSS 531 - Teleoperation, Haptic Systems and Collaborative Control (3 cr.)
- RCSS 532 - Robust and Optimal Control (3 cr.)
- RCSS 533 - Nonlinear and Adaptive Control (3 cr.)
- RCSS 534 - Networked Control Systems: Design and Applications (3 cr.)
- RCSS 541 - Smart Systems and Computational Intelligence (3 cr.)
- RCSS 542 - MEMS/NEMS Technology and Devices (3 cr.)
- RCSS 543 - Image Analysis and Computer Vision (3 cr.)
- RCSS 544 - Sensors, Perception and Smart Systems (3 cr.)
- RCSS 545 - Advanced Artificial Intelligence (3 cr.)
- RCSS 592 - Selected Topics in RCSS (3 cr.)

III. Group III (3 credit hours)

- RCSS 593 - 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 400-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 Global Affairs

Global Affairs, with concentrations in International Cooperation, and International Security (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 plus a thesis. 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 thesis consistent with department and university guidelines and complete at least two enrollments the mandatory thesis sequence courses (598 and 599, both non-credit), including at least one enrollment in 598.

Core Requirement (18 credit hours):

Students must complete four (4) courses in group 1, one (1) course in group 2, and one (1) course in group 3.

Group 1: Complete all four (4) of the following:

- LAW 509 - International Law (3 cr.)
- PPAD 500 - Research Methods for Public Policy and Administration (3 cr.)
- PPAD 527 - International Organization in Global Governance (3 cr.)
- PPAD 528 - International Negotiation: Theory and Practice (3 cr.)

Group 2: Complete one (1) of the following:

- PPAD 524 - Globalization and Development (3 cr.)
- POLS 555 - Conflict and Security in Global Politics (3 cr.)
Group 3: Complete one (1) of the following:

- PPAD 502 - Economics for Public Policy Analysis (3 cr.)
- PPAD 506 - Essentials of Public Policy and Administration (3 cr.)
- POLS 561 - Public Policy and Development (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 3 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 570 – Selected Topics in Public Policy and Administration.

MGA Concentration 1: International Security – 5 courses (15 credits) required

Group 1: Required for all students in the concentration

- PPAD 529 - Issues in International Security (3 cr.)
- PPAD 530 - Conflict Management and Resolution (3 cr.)

Group 2: Complete three (3) of the following:

- PPAD 531 - Armament, Arms Control and Disarmament (3 cr.)
- PPAD 532 - Issues in regional security in the Middle East and Africa (3 cr.)
- PPAD 519 - Leadership and Communication for Public Affairs (3 cr.)
- POLS 554 - Comparative Foreign Policy: Theories and Applications (3 cr.)

MGA Concentration 2: International Cooperation -- 5 courses (15 credits) required

Group 1: Required for all students in concentration

- PPAD 533 - Cooperation for Development in the Multilateral System (3 cr.)
- POLS 525 - International Political Economy (3 cr.)

Group 2: Complete three (3) of the following:

- PPAD 516 - Core Concepts and Applications for Social and Environmental Policy (3 cr.)
- PPAD 519 - Leadership and Communication for Public Affairs (3 cr.)
- PPAD 534 - Comparative Bilateral Cooperation Policies for Development (3 cr.)
- PPAD 535 - Multilateral Cooperation for Development at the Country Level: Issues and Practice (3 cr.)

Master's Project (6 credits)
Students are required to complete a master's project addressing a challenge relevant to their concentration from the point of view of an organization involved in the issue, which will serve as the project's client. The preparation of the master's project proposal and final report must comply with departmental guidelines with regard to client involvement, content, format, dates, and the review and supervision process. Students working on the master's project must first enroll in a section of PPAD 590, the practicum, to prepare a proposal to the client and then must enroll in a second semester of PPAD 590 during the preparation of their policy research, analysis, recommendations, and final report. Students who do not complete their master's project within these two semesters must enroll in 1 credit of independent study each semester until the project is completed, including the summer semester if they plan to complete their project and graduate in the summer. The master's project may be completed as a team or as an individual project. In either case, students are required to attend weekly meetings of their section to present and discuss their own work and that of other students.

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 what they don’t know.

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.

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 500 - Legal Research and Writing (3 cr.)
- LAW 527 - Graduate Law Seminar (3 cr.)
  Two out of the following three courses:
- LAW 501 - Jurisprudence (3 cr.)
- LAW 502 - Comparative Law (3 cr.)
- LAW 509 - 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 599 - Research Guidance/Thesis (no cr., graded)

Master of Public Administration (MPA)

Public Administration, with concentrations in Management of Public Sector Reform, and Management of Nonprofit and Development Organizations (MPA)

Master of Public Administration

The Master of Public Administration 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 upper management
positions in public service. Students, who are generally mid-career at entry, pursue careers in government, nonprofit organizations, international development agencies, academia, and the private sector.

Program objectives

The mission of the MPA Program is to support effective and efficient administration of government and nonprofit organizations and better public governance in Egypt and the Middle East by preparing professionals for careers in public service with the highest ethical standards, strong competencies in 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.

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 (33 credit hours)

Students seeking the degree of Master of Public Administration must complete 33 credit hours plus a thesis. The program core, required of all students, consists of 6 courses (18 credits). Students must complete a concentration of 5 courses (15 credits). Students may elect either the concentration in Management of Public Sector Reform or the concentration in Management of Nonprofits and Development Organizations. 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 thesis consistent with department and university guidelines and complete at least one enrollment in each of the mandatory thesis sequence courses (598 and 599, both non-credit).

Core Requirement (18 credit hours):

Students must complete four (4) courses in group 1, one (1) course in group 2, and one (1) course in group 3.

Group 1: Complete all four (4) of the following:
- PPAD 500 - Research Methods for Public Policy and Administration (3 cr.)
- PPAD 501 - Strategic Management for Government and Nonprofit Organizations (3 cr.)
- PPAD 506 - Essentials of Public Policy and Administration (3 cr.)
- PPAD 514 - Human Resource Management for Government and Nonprofit Organizations (3 cr.)

Group 2: Complete one (1) of the following:
- PPAD 504 - Essentials of Financial Planning and Management for Government and Nonprofit Organizations (3 cr.)
- PPAD 512 - Management of Development Programs (3 cr.)
- PPAD 513 - Comparative Public Governance (3 cr.)

Group 3: Complete one (1) of the following:
- PPAD 508 - Qualitative Analysis for Policy and Administration (3 cr.)
- PPAD 509 - Applied Quantitative Analysis (3 cr.)

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• PPAD 515 - Public Policy Analysis and Program Evaluation (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 3 concentration course, if not taken as a core course (i.e., a course may be counted toward only one requirement).

MPA Concentration 1: Management of Public Sector Reform -- 5 courses (15 credits) required

**Group 1: Required for all students in the concentration**
- PPAD 518 - Governance, Accountability, and Stakeholder Negotiations (3 cr.)

**Group 2: Complete one (1) of the following:**
- PPAD 519 - Leadership and Communication for Public Affairs (3 cr.)
- PPAD 523 - Citizen-centered government (3 cr.)
- PPAD 525 - Reforming Delivery of Social Services (3 cr.)

**Group 3: Complete 2-3 of the following in consultation with departmental advisor:**
- PPAD 505 - Institutions, Democratization, and Public Policy (3 cr.)
- PPAD 508 - Qualitative Analysis for Policy and Administration (3 cr.)
- PPAD 510 - Organizational Behavior for Government and Nonprofit Management (3 cr.)
- PPAD 511 - Administrative Environment and Public Policy in Egypt and the Middle East (3 cr.)
- PPAD 512 - Management of Development Programs (3 cr.)
- PPAD 513 - Comparative Public Governance (3 cr.)
- PPAD 520 - Global Health Issues and Policies (3 cr.)
- PPAD 524 - Globalization and Development (3 cr.)
- PPAD 570 - Special Topics in Public Policy and Administration (1-3 cr.)
- PPAD 575 - Independent Study in Public Policy and Administration (1-3 cr.)
- PPAD 590 - Practicum (3 cr.)

**Group 4 (option available to students completing 2 courses only in Group 3):**
Complete 1 course in another department selected in consultation with departmental advisor. Students are strongly encouraged to take a course in another School of Global Affairs and Public Policy department or center if possible and in particular students in this concentration are strongly recommended to take at least one course in law as a concentration elective.

MPA Concentration 2: Management of Nonprofit and Development Organizations -- 5 courses (15 credits) required

**Group 1: Required for all students in concentration**
- PPAD 517 - Non-profit Management (3 cr.)

**Group 2: Complete one (1) of the following:**
- PPAD 516 - Core Concepts and Applications for Social and Environmental Policy (3 cr.)
- PPAD 526 - Corporate Social Responsibility and NGO Partnerships (3 cr.)

**Group 3: Complete 2-3 of the following in consultation with departmental advisor:**
- PPAD 505 - Institutions, Democratization, and Public Policy (3 cr.)
- PPAD 508 - Qualitative Analysis for Policy and Administration (3 cr.)
- PPAD 510 - Organizational Behavior for Government and Nonprofit Management (3 cr.)
Course Offerings:

- PPAD 511 - Administrative Environment and Public Policy in Egypt and the Middle East (3 cr.)
- PPAD 512 - Management of Development Programs (3 cr.)
- PPAD 513 - Comparative Public Governance (3 cr.)
- PPAD 520 - Global Health Issues and Policies (3 cr.)
- PPAD 523 - Citizen-centered government (3 cr.)
- PPAD 524 - Globalization and Development (3 cr.)
- PPAD 525 - Reforming Delivery of Social Services (3 cr.)
- PPAD 520 - Global Health Issues and Policies (3 cr.)
- PPAD 570 - Special Topics in Public Policy and Administration (1-3 cr.)
- PPAD 575 - Independent Study in Public Policy and Administration (1-3 cr.)
- PPAD 590 - Practicum (3 cr.)

Group 4 (option available to students completing 2 courses only in Group 3):
Complete 1 course in another department selected in consultation with departmental advisor. Students are strongly encouraged to take a course in another School of Global Affairs and Public Policy department or center if possible.

Practicum (PPAD 590): 3 credits

Students are strongly encouraged to undertake a practicum within their concentration, ideally in conjunction with their thesis work.

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 500, a required core course, but may prepare an alternative thesis proposal if desired. Students must enroll in PPAD 599 (Research Guidance and Thesis) and identify a thesis supervisor in the semester during which they plan to present their proposal for approval, whether or not they plan to use the draft proposal prepared in PPAD 500. Once the proposal is approved, students are required to enroll in PPAD 598, 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 599. Students must pay 3 credits of tuition for the first enrollment in PPAD 598 and 599 and thereafter pay 1 credit of tuition for each Fall and Spring semester, until the thesis is successfully defended and approved by the Dean. Students planning to complete their thesis and graduate in the summer or to get approval for their proposal in order to enroll in 598 in the Fall must enroll in PPAD 599 in the summer term and pay 3 credits if this is their first enrollment in 599 or 1 credit of tuition if they have completed the first 599 enrollment.

PPAD 598, the thesis research seminar, is designed to support the applied research required for the thesis and the writing of the thesis itself. It provides a forum for students to present and discuss their work and for colleagues to support and critique their work. The course does not have assigned readings, but students will be required to read and comment on the work of other students, both orally and in writing, and to present draft thesis chapters.

Dual Degree Option BSc/CENG-MPA

Master's Program in Development Practice (MDP) Option
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 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. Those interested in this option are required to complete a summer work assignment for Fall practicum 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. The program prepares students for careers in public service 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 MDP option 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. The following course sequence has been developed for the MDP option, but students should consult their advisor in CENG to ensure that all SSE requirements are met:

**SEMESTER IX**

- CENG 424 Methods & Equipment for Construction II
- xxxx xxx Eng. Concentration 1 elective
- CENG 448 Financial Management and Accounting in Construction (MPA credit)
- CENG xxx Elective (1)
- CENG 431 Intro. to Transportation
- CENG 490 Senior Thesis I (Capstone Core Level I)
- CENG 497 Industrial Training (Practicum)

**SEMESTER X**

- xxxx xxx Engineering Concentration 2
- CENG 567 Construction Leadership and Management/Elective 2
- CENG 491 Senior Thesis II (Capstone Core Level II)
- PPAD 506 Essentials of Public Policy and Administration (MPA credit)
- PPAD 500 Research Methods for Public Policy and Administration (MPA credit)
- xxxx xxx Science elective (from MDP list)
- Summer internship – public/NGO management focus and participation in MDP colloquium (MPA credit through 590)

**SEMESTER XI**

- PPAD 590 Practicum (Capstone Level II) (MPA Credit)
- ENGR 516 Engineering for Sustainable Development (MPA Credit)
- PPAD 570 Global Classroom (MPA Credit)
- xxxx xxx Science elective (from MDP list)
- PPAD 598 Thesis Research Seminar (MPA Credit)

**SEMESTER XII**

- PPAD 514 Human Resource Management for Government and Nonprofit Organizations (MPA Credit)
- PPAD 516 Core Concepts and Applications for Social and Environmental Policy (MPA Credit)
- PPAD 517 NGO Management (MPA Credit)
- PPAD 599 Thesis (MPA Credit)

Summer thesis work, if needed, and participation in MDP colloquium
Lists of MDP-relevant courses will be provided to students in the program prior to registration for each semester, based on offerings available in the appropriate departments.

**Master of Public Policy**

**Public Policy, with concentrations in Social and Environmental Policy, Government Promotion and Regulation of the Private Sector, and Media Policy (MPP)**

**Master of Public Policy**

The Master of Public Policy 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 positions in public service and for careers as policy analysts. Students, who are generally in the early part of their career at entry, pursue careers in government, nonprofit organizations, international development agencies, academia, consulting firms, and the private sector.

**Program objectives**

The mission of the MPP Program is to support evidence-based policy-making and better public governance in Egypt and the Middle East by preparing professionals for careers in public service with the highest ethical standards, strong competencies in public governance, excellent leadership and communication skills, capability to develop and use evidence and analysis in public service settings, and a commitment to building a better future for the people of Egypt and the region.

**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 (33 credit hours)**

Students seeking the degree of Master of Public Policy must complete 33 credit hours plus a thesis. The program core, required of all students, consists of 6 courses (18 credits). Students must complete a concentration of 5 courses (15 credits). Students may elect either the concentration in Social and Environmental Policy or the concentration in Government Regulation and Promotion of the Private Sector. Students are required to declare their concentration before beginning their second semester of enrollment in the program and to identify an area of professional concentration at that time. In addition to coursework, students must complete a thesis consistent with department and university
Catalog 2012-2013 Extract

guidelines and complete at least one enrollment in each of the mandatory thesis sequence courses (598 and 599, both non-credit).

Core Requirement (18 credit hours):

Students must complete three (3) courses in group 1, two (2) courses in group 2, and one (1) course in group 3.

Group 1: Complete all three (3) of the following:
- PPAD 500 - Research Methods for Public Policy and Administration (3 cr.)
- PPAD 502 - Economics for Public Policy Analysis (3 cr.)
- PPAD 503 - Role of Government in a Market-Oriented Economy (3 cr.)

Group 2: Complete two (2) of the following:
- PPAD 505 - Institutions, Democratization, and Public Policy (3 cr.)
- PPAD 506 - Essentials of Public Policy and Administration (3 cr.)
- PPAD 507 - Government Finance for Policy Analysis (3 cr.)
- PPAD 515 - Public Policy Analysis and Program Evaluation (3 cr.)
- PPAD 517 - Non-profit Management (3 cr.)
- PPAD 518 - Governance, Accountability, and Stakeholder Negotiations (3 cr.)
- PPAD 519 - Leadership and Communication for Public Affairs (3 cr.)

Group 3: Complete one (1) of the following:
- PPAD 508 - Qualitative Analysis for Policy and Administration (3 cr.)
- PPAD 509 - Applied Quantitative Analysis (3 cr.)

NOTE: Students with limited preparation management and social science are strongly encouraged to enroll in PPAD 506; conversely, students with a background in management and/or social science may not enroll in PPAD 506 for credit toward the MPP. Students with strong preparation in economics may substitute any course in Group 2 or 3 to complete their Group 1 requirement.

Concentration Requirement (15 credit hours):

Students must complete 5 courses in one of the concentrations below. In addition to the courses shown for each concentration, students may select a course from the core list shown above as a Group 3 concentration course if not taken as a core course (i.e., a course may be counted towards only one requirement). Students may substitute up to two courses for those shown with permission of the department. Students who have completed at least 4 core courses and who have a GPA of 3.5 or better may petition the department to complete a concentration in another policy field, such as urban policy or health policy, which must include at least 3 PPAD courses.

MPP Concentration 1: Social and Environmental Policy – 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: Required for all students in concentration
- PPAD 516 - Core Concepts and Applications for Social and Environmental Policy (3 cr.)

Group 2: Complete one (1) of the following:
- PPAD 515 - Public Policy Analysis and Program Evaluation (3 cr.)
- PPAD 520 - Global Health Issues and Policies (3 cr.)
- PPAD 524 - Globalization and Development (3 cr.)
- PPAD 525 - Reforming Delivery of Social Services (3 cr.)
• PPAD 526 - Corporate Social Responsibility and NGO Partnerships (3 cr.)

**Group 3: Complete 1-3 of the following:**
• PPAD 501 - Strategic Management for Government and Nonprofit Organizations (3 cr.)
• PPAD 504 - Essentials of Financial Planning and Management for Government and Nonprofit Organizations (3 cr.)
• PPAD 505 - Institutions, Democratization, and Public Policy (3 cr.)
• PPAD 508 - Qualitative Analysis for Policy and Administration (3 cr.)
• PPAD 509 - Applied Quantitative Analysis (3 cr.)
• PPAD 510 - Organizational Behavior for Government and Nonprofit Management (3 cr.)
• PPAD 511 - Administrative Environment and Public Policy in Egypt and the Middle East (3 cr.)
• PPAD 517 - Non-profit Management (3 cr.)
• PPAD 518 - Governance, Accountability, and Stakeholder Negotiations (3 cr.)
• PPAD 519 - Leadership and Communication for Public Affairs (3 cr.)
• PPAD 521 - Core Concepts and Applications for Government Regulation (3 cr.)
• PPAD 522 - Core Concepts and Applications for Government Promotion of the Private Sector (3 cr.)
• PPAD 523 - Citizen-centered government (3 cr.)
• PPAD 570 - Special Topics in Public Policy and Administration (1-3 cr.)
• PPAD 575 - Independent Study in Public Policy and Administration (1-3 cr.)
• PPAD 590 - Practicum (3 cr.)

**Group 4 (option available to students completing 1-2 courses only in Group 3):**
Complete 1-2 courses in another department selected in consultation with departmental advisor. Students are strongly encouraged to take at least one (1) course in another School of Global Affairs and Public Policy department or center if possible.

**MPP Concentration 2: Government Promotion and Regulation of the Private Sector – 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 two (2) of the following:**
• PPAD 521 - Core Concepts and Applications for Government Regulation (3 cr.)
• PPAD 522 - Core Concepts and Applications for Government Promotion of the Private Sector (3 cr.)
• PPAD 507 - Government Finance for Policy Analysis (3 cr.)

**Group 2: Complete two (2) courses from the offerings of the Law and/or Economics Departments**
Must be selected in consultation with your advisor; students with limited backgrounds in law or economics may take one course at the 400 level in either department.

**Group 3: Complete 1 of the following:**
• PPAD 501 - Strategic Management for Government and Nonprofit Organizations (3 cr.)
• PPAD 504 - Essentials of Financial Planning and Management for Government and Nonprofit Organizations (3 cr.)
• PPAD 505 - Institutions, Democratization, and Public Policy (3 cr.)
• PPAD 508 - Qualitative Analysis for Policy and Administration (3 cr.)
• PPAD 509 - Applied Quantitative Analysis (3 cr.)
• PPAD 510 - Organizational Behavior for Government and Nonprofit Management (3 cr.)
• PPAD 511 - Administrative Environment and Public Policy in Egypt and the Middle East (3 cr.)
• PPAD 518 - Governance, Accountability, and Stakeholder Negotiations (3 cr.)
• PPAD 519 - Leadership and Communication for Public Affairs (3 cr.)
• PPAD 570 - Special Topics in Public Policy and Administration (1-3 cr.)
• PPAD 575 - Independent Study in Public Policy and Administration (1-3 cr.)
• PPAD 590 - Practicum (3 cr.)

MPP Concentration 3: Media Policy - 5 courses (15 credits) required

Group 1: Required for all students in the concentration:

• JRMC 444 - Media Law and Policy (3 cr.)
• JRMC 550 - Seminar in International Communication (3 cr.)
• JRMC 570 - Seminar in Mass Communication and National Development (3 cr.)

Group 2: Complete two of the following:

• JRMC 420 - Media Management (3 cr.)
• JRMC 502 - Current Issues in Mass Communication (3 cr.)
• PPAD 511 - Administrative Environment and Public Policy in Egypt and the Middle East (3 cr.)
• LAW 510 - Introduction to International Human Rights and Humanitarian Law (3 cr.)

Practicum (PPAD 590): 3 credits

Students are strongly encouraged to undertake a practicum within their concentration, ideally in conjunction with their thesis work.

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 500, a required core course, but may prepare an alternative thesis proposal if desired. Students must enroll in PPAD 598 (Research Guidance and Thesis) and identify a thesis supervisor in the semester during which they plan to present their proposal for approval, whether or not they plan to use the draft proposal prepared in PPAD 500. Once the proposal is approved, students are required to enroll in PPAD 598, 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 599. Students must pay 3 credits of tuition for the first enrollment in PPAD 598 and 599 and thereafter pay 1 credit of tuition for each Fall and Spring semester, until the thesis is successfully defended and approved by the Dean. Students planning to complete their thesis and graduate in the summer or to get approval for their proposal in order to enroll in 598 in the Fall must enroll in PPAD 599 in the summer term and pay 3 credits if this is their first enrollment in 599 or 1 credit of tuition if they have completed the first 599 enrollment.

PPAD 598, the thesis research seminar, is designed to support the applied research required for the thesis and the writing of the thesis itself. It provides a forum for students to present and discuss their work and for colleagues to support and critique their work. The course does not have assigned readings, but students will be required to read and comment on the work of other students, both orally and in writing, and to present draft thesis chapters.

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 total 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 Objectives

The objectives of the Master of Science in Biotechnology are:

1. To introduce students to a combination of fundamentals and frontline applications in the field of biotechnology.
2. To introduce students to regulatory affairs, intellectual property issues, and ethics related to different aspects of biotechnology.
3. To introduce students to principles and requirements of bio-entrepreneurship.
4. To provide the students with a deep understanding of the research techniques and data analysis in the area of specialization.
5. To train students to solve biotechnology-related problems, think critically, function well in a team, and communicate effectively.
6. To train students at a high standard of written and oral communication skills on technical matters.

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. 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 sciences or engineering, 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 12 credit hours of core courses and 12 credit hours of electives.

Core Courses (12 credit hours)

To be chosen from the following courses:

- BIOT 501 - Biochemistry (3 cr.)
- BIOT 502 - Cell and Molecular Biology (3 cr.)
- BIOT 503 - Biotechnology (3 cr.)
- BIOT 504 - Experimental Biotechnology (3 cr.)
- BIOT 505 - Basics of Bioentrepreneurship (3 cr.)

Biotechnology Electives (12 credit hours)
Student may select from the following list of courses:

- BIOT 511 - Bioengineering (3 cr.)
- BIOT 521 - Fundamentals of Bioinformatics (3 cr.)
- BIOT 531 - Molecular Diagnosis (3 cr.)
- BIOT 533 - Pharmacogenomics and Pharmacogenetics (3 cr.)
- BIOT 541 - Molecular Genetics (3 cr.)
- BIOT 543 - Microbial Biotechnology (3 cr.)
- BIOT 551 - Selected Topics in Biotechnology (3 cr.)

Notes:

Students may also take a maximum of one 400-level course in sciences or engineering, or other related areas subject to their advisor’s approval.

Thesis (9 credit hours)

Each student must submit a thesis topic that has been approved by a faculty supervisor normally after acquiring 12 credit hours of course work. Since various research topics are addressed in a sequence of two seminar courses, the student must register for the first (BIOT590) before submitting a thesis topic while the second (BIOT591) must be taken during the execution of the thesis research. To ensure adequate faculty consultation, two semesters of the graduate thesis course (BIOT599) are required. After that, the course may be taken for one credit hour each semester until completion of the program requirements.

- BIOT 590 - Graduate Seminar I (2 cr.)
- BIOT 591 - Graduate Seminar II (1 cr.)
- BIOT 599 - Research Guidance and Thesis (3 cr. + 3 cr.)

Chemistry, with concentration in Food Chemistry (M.Sc.)

Master of Science in Chemistry

The Master of Science program in Chemistry provides postgraduate education to prepare 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 total of 33 credit hours is required for the Master of Science degree. This consists of 24 credits hours of courses and 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 an 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, 12 credit hours chosen from the specialization courses, and 3 credit hours of electives.

**Core Courses (9 credit hours)**

To be chosen from the following courses:

- CHEM 501 - Biochemistry (3 cr.)
- CHEM 502 - Organometallics (3 cr.)
- CHEM 503 - Advanced Organic Chemistry (3 cr.)
- CHEM 504 - Methods of Structure Determination (3 cr.)

**Food Chemistry Concentration Courses (12 credit hours)**

To be chosen from the following courses:

- CHEM 511 - Applied Food Microbiology (3 cr.)
- CHEM 512 - Food Safety Assurance (3 cr.)
- CHEM 513 - Beverage Manufacturing (3 cr.)
- CHEM 514 - Chemical Changes In Food During Processing (3 cr.)
- CHEM 515 - Food Additives (3 cr.)
- CHEM 516 - Food Fermentation (3 cr.)
- CHEM 517 - Sensory Evaluation of Food Products (3 cr.)
- CHEM 518 - Functional Foods and Nutraceuticals (3 cr.)
- CHEM 519 - Practical Approaches to Food Analysis (3 cr.)

**Chemistry Electives (3 credit hours)**

A minimum of one course is selected as elective. No more than one 400-level course in sciences or engineering, or other related areas, not in the student’s undergraduate major, may be taken for graduate credit subject to advisor approval. Students may also select from the following list of courses:

- CHEM 551 - Selected Topics in Chemistry (3 cr.)
- CHEM 552 - Independent Study in Chemistry (3 cr.)

**Thesis (9 credit hours)**
Each student must submit a thesis topic that has been approved by a faculty supervisor normally after acquiring 12 credit hours of course work. Since various research topics are addressed in a sequence of two seminar courses, the student must register for the first (CHEM 590) before submitting a thesis topic while the second (CHEM 591) must be taken during the execution of the thesis research. To ensure adequate faculty consultation, two semesters of the graduate thesis course (CHEM 599) are required. After that, the course may be taken for one credit hour each semester until completion of the program requirements.

- CHEM 590 - Graduate Seminar I (2 cr.)
- CHEM 591 - Graduate Seminar II (1 cr.)
- CHEM 599 - Research Guidance and Thesis (3 cr. + 3 cr.)

**Computer Science (M.Sc.)**

**Master of 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.

**Courses (24 credit hours)**

A minimum of eight courses (24 credit hours) is required: four core courses (12 credit hours), and four electives (12 credit hours).

**Core Courses (12 credit hours)**

All candidates must take the following four core courses:

- CSCE 525 - Algorithms and Complexity Theory (3 cr.)
- CSCE 530 - Advanced Processor Architecture (3 cr.)
- CSCE 545 - Distributed Systems (3 cr.)
- CSCE 565 - Advanced Artificial Intelligence (3 cr.)

**Elective Courses (12 Credit hours)**

- CSCE 527 - Neural Networks and Genetic Algorithms (3 cr.)
- CSCE 529 - Design and Analysis of Parallel Algorithms (3 cr.)
- CSCE 532 - Parallel Computer Architecture (3 cr.)
• CSCE 535 - High Speed Networks (3 cr.)
• CSCE 541 - Advanced Software Engineering (3 cr.)
• CSCE 543 - Advanced Software Quality (3 cr.)
• CSCE 555 - Computer Graphics and Animation (3 cr.)
• CSCE 561 - Knowledge Engineering (3 cr.)
• CSCE 563 - Digital Image Processing (3 cr.)
• CSCE 564 - Web Mining (3 cr.)
• CSCE 567 - Computer Vision (3 cr.)
• CSCE 569 - Natural Language Processing and Machine Translation (3 cr.)
• CSCE 585 - Selected Topics in Computer Science (3 cr.)

Thesis (8 Credit hours)

The graduate thesis work is an important and required part of the master's degree program. Each student must submit a thesis topic that has been approved by a faculty supervisor, normally after 12 credit hours. Various research topics are discussed in the seminar courses. To ensure adequate faculty consultation on the thesis, the student must register for the graduate thesis for at least two semesters. The Computer Science seminar is a two-semester course (1 credit hour per semester) designed to prepare students for research in Computer Science. The seminar must be taken by all students. The first seminar will help the student select a topic for his/her thesis and must be taken before submitting a thesis topic. In the second seminar, the student will present a report on his/her thesis progress.

Example of a Program Completion Plan:

<table>
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<th>Semester</th>
<th>1:</th>
<th>3 graduate courses</th>
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<th>courses</th>
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<tr>
<td>Semester 2:</td>
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<td>+ seminar P1</td>
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</tr>
<tr>
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<td>graduate courses</td>
<td>+ Thesis</td>
<td></td>
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<td>Semester 4:</td>
<td>Thesis + seminar P2</td>
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</table>

Construction Engineering (M.Sc.)

The Master of Science program in Construction Engineering is administered by the Construction and Architectural 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 to provide the graduates of the program with:

• A broad knowledge of modern computational and experimental methods in engineering.

• Extensive knowledge in construction management & systems and in structural engineering & construction materials

• In-depth understanding of the research techniques and data analysis in construction engineering

• 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

A candidate for the master’s program in Construction Engineering must have a B.Sc. degree in civil, construction or architectural engineering. Students who have some deficiency in their undergraduate training but are well-qualified in other respects may be admitted provisionally. The Department of Construction and Architectural Engineering 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 (6 credit hours)

All students select two out of the following four ENGR core courses:

- ENGR 511 - Computational Methods in Engineering (3 cr.)
- ENGR 512 - Experimental Methods in Engineering (3 cr.)
- ENGR 516 - Engineering for a Sustainable Environment (3 cr.)
- ENGR 518 - Engineering Statistics (3 cr.)

II- Concentration Courses (12 credit hours)

Students should select a minimum of four courses from any of the courses of the following subfields in Construction Engineering:

Construction Management and Systems

- CENG 570 - Advanced Construction Management (3 cr.)
- CENG 571 - Advanced Systems Analysis for Construction Engineering (3 cr.)
- CENG 572 - Claims and Disputes in the Construction Industry (3 cr.)
- CENG 574 - Methods and Equipment for Construction (3 cr.)
- CENG 575 - Techniques of Planning, Scheduling and Control (3 cr.)
- CENG 576 - Advanced Systems for Construction (3 cr.)
- CENG 578 - Resource Management for Construction Projects (3 cr.)

Structural Engineering and Construction Materials

- CENG 573 - Advanced Construction and Building Materials (3 cr.)
- CENG 577 - The Finite Element Method in Structural Engineering (3 cr.)
- CENG 579 - Assessment, Protection and Repair of Structures (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 400-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.
A minimum of one course must be selected from the concentration courses in Construction Engineering

- CENG 592 - Advanced Topics in Construction Engineering (3 cr.)

May include:

- Geotechnical Engineering
- Construction Technology Analysis and Development
- Advanced Structural Design and Construction

Thesis

Graduate thesis work is an important and required part of the Construction Engineering Master of Science degree program. Each student must submit a thesis topic that has been approved by a faculty advisor by the end of the first academic year. Various research topics are discussed in ENGR 590 and 591, Graduate Thesis Seminar I and II. Students must register in ENGR 590 before submitting a thesis topic and in ENGR 591 during execution of the thesis research to present their thesis plan. To ensure adequate faculty consultation on the thesis, the student must register for CENG 599, Graduate Thesis, by the completion of 18 credit hours. Students must register in CENG 599 for at least two semesters. The first two registrations in CENG 599 must be for three credit hours, after that CENG 599 is taken for one credit hour each semester until completion of the program requirements.

Electronics Engineering (M. Sc.)

A candidate for the master’s program in Electronics Engineering must have a degree in electrical or computer engineering or related discipline. Students who have some deficiency in their undergraduate training but are well-qualified in other respects may be admitted provisionally. The Electronics Engineering Department may prescribe a program of noncredit work to make up for the deficiency.

1. Program Objectives

The objectives of the Master of Science Degree in Electronics Engineering are to provide the graduates of the program with:

- A broad knowledge of modern computational and experimental methods in engineering.
- Extensive knowledge in one of the following specializations: VLSI and nanosystems, communication systems, microwave and RF systems, digital and network systems.
- Deep understanding of the research techniques and data analysis in the area of specialization.
- 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.
2. Admission

A candidate for the master’s program in Electronics 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 Engineering Department may prescribe a program of noncredit work to make up for the deficiency.

3. 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 one out of the following four ENGR core courses:

- ENGR 511 - Computational Methods in Engineering (3 cr.)
- ENGR 512 - Experimental Methods in Engineering (3 cr.)
- ENGR 516 - Engineering for a Sustainable Environment (3 cr.)
- ENGR 518 - Engineering Statistics (3 cr.)

Concentration Courses** (21 credit hours)

Candidates must select at least five courses out of the following EENG course list:

- EENG 510 - Advanced Solid-State Devices (3 cr.)
- EENG 516 - Analog Integrated Circuit Design (3 cr.)
- EENG 517 - Digital Integrated Circuit Design (3 cr.)
- EENG 518 - Advanced Integrated Circuit Design (3 cr.)
- EENG 520 - Advanced Digital Communications (3 cr.)
- EENG 521 - Wireless Communication Systems (3 cr.)
- EENG 522 - Stochastic Processes for Engineers (3 cr.)
- EENG 524 - Enabling Technologies for High Date Rate Communications (3 cr.)
- EENG 525 - Digital Signal Processing (3 cr.)
- EENG 526 - Information Theory and Coding (3 cr.)
- EENG 530 - Advanced Computer Networks (3 cr.)
- EENG 541 - Microwave Circuit Analysis and Design (3 cr.)
- EENG 547 - RF and Microwave Systems (3 cr.)
- EENG 548 - RF Integrated Circuit Design (3 cr.)
- EENG 549 - Antennas Design and Applications (3 cr.)
- EENG 553 - Fault-tolerant Computing and Reliability Modeling (3 cr.)
- EENG 556 - Networked Control Systems Design & Applications (3 cr.)
- EENG 594 - Advanced Topics in Electronics Engineering (3 cr.)
**Note:**

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:

1. one 400-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 (EENG 580) (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 EENG department.

4. Thesis (9 credit hours)

Graduate thesis work is an important and required part of the Electronics Engineering Master of Science degree program. Each student must submit a thesis topic that has been approved by a faculty advisor by the end of the first academic year. Various research topics are discussed in ENGR 590 (2 credits) and 591 (1 credit), Graduate Thesis Seminar I and II. Students must register in ENGR 590 before submitting a thesis topic and in ENGR 591 during execution of the thesis research to present their thesis plan. To ensure adequate faculty consultation on the thesis, the student must register for EENG 599, Graduate Thesis, by the completion of 18 credit hours. Students must register in EENG 599 for at least two semesters. The first two registrations in EENG 599 must be for three credit hours, after that EENG 599 is taken for one credit hour each semester until completion of the program requirements.

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 provide the graduates of the program with:

- A broad knowledge of modern computational and experimental methods in engineering.
- Extensive knowledge in fundamental environmental engineering science, the interactions of pollutants in water, air, and subsurface environments, and the design of treatment/pollutant remediation systems.
- In-depth understanding of the research methods and data analysis in one of the areas of environmental engineering noted above.
- An ability to solve unstructured engineering problems of social significance, think critically, and function well in a team.
- A high and ethical standard of written and oral communication on technical matters.

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 (6 credit hours)

All students select two out of the following four ENGR core courses:

- ENGR 511 - Computational Methods in Engineering (3 cr.)
- ENGR 512 - Experimental Methods in Engineering (3 cr.)
- ENGR 516 - Engineering for a Sustainable Environment (3 cr.)
- ENGR 518 - Engineering Statistics (3 cr.)

II- Concentration Courses (12 credit hours)

Students should select a minimum of four courses from the following environmental engineering courses:

- ENVE 561 - Water Quality Control (3 cr.)
- ENVE 562 - Unit Operations in Environmental Engineering (3 cr.)
- ENVE 564 - Air Pollution Control Engineering (3 cr.)
- ENVE 566 - Solid and Hazardous Wastes Engineering (3 cr.)
- ENVE 567 - Environmental Chemistry (3 cr.)
- ENVE 569 - Groundwater Hydrology and Contamination (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 director’s approval. No more than one 400-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.

Thesis

Graduate thesis work is an important and required part of the environmental engineering master’s degree program. Each student must submit a thesis topic that has been approved by a faculty advisor by the end of the first academic year. Various research topics are discussed in ENGR 590, Graduate Thesis Seminar. Students must complete ENGR 590 before registering for thesis credits. To ensure adequate faculty consultation on the thesis, the student must register for ENVE 599, Research Guidance Thesis, by the completion of 18 credit hours. Students must register in ENVE 599 continuously and for at least two semesters. Each of the first two registrations in ENVE 599 must be for three credit hours, after that ENVE 599 is taken for one credit hour each semester until completion of the program requirements.
Finance, with concentrations in Corporate Finance, and Investments (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.

Admission

All applicants must satisfy the university’s graduate admission requirements and obtain an acceptable score on the Graduate Management Admission Test (GMAT) or Graduate Record Examinations (GRE). 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. No previous working experience is needed.

To obtain the MSc in Finance degree, students must complete 37 credit hours of which 31 credit hours of course work and six credit hours of thesis. Students with relevant background can waive up to two core courses but must complete a minimum of 31 credit hours (courses and thesis) to be awarded the degree. A research methodology course will be mandatory.

The program will consist of 11 for-credit courses plus a thesis designed to be completed in two full years.

MSc Core Courses (18 credits)

Students must complete six core courses before attempting to take any of the elective courses. Students with relevant background can waive up to two core courses. The core courses are:

- ACCT 501 - Financial Reporting and Analysis (3 cr.)
- ECON 418 - Econometric Methods (3 cr.)
- FINC 527 - Managerial Economics (3 cr.)
- FINC 540 - Financial Management (3 cr.)
- FINC 541 - Investments (3 cr.)
- OPMG 507 - Introduction to Business Statistics (3 cr.)

MSc Electives (12 credits)

The student must complete all core courses before attempting to take any of the elective courses. The student specializes in one of two concentration fields which are Investments and Corporate Finance. The student must take four courses (12 cr.) from his concentration field.

1- Investments Concentration

- FINC 512 - Options and Derivatives (3 cr.)
- FINC 513 - Fixed Income Securities (3 cr.)
- FINC 515 - Portfolio Management (3 cr.)
• FINC 516 - Real Estate Finance (3 cr.)
• FINC 542 - International Financial Markets (3 cr.)
• FINC 543 - Financial Institutions and Markets (3 cr.)
• FINC 570 - Selected Topics in Financial Management (3 cr.)
• FINC 575 - Independent Study in Financial Management (1-3 cr.)

2- Corporate Finance Concentration

• FINC 512 - Options and Derivatives (3 cr.)
• FINC 514 - Financial Risk Analysis (3 cr.)
• FINC 517 - Financial Modeling (3 cr.)
• FINC 542 - International Financial Markets (3 cr.)
• FINC 543 - Financial Institutions and Markets (3 cr.)
• FINC 544 - Corporate Financial Policy (3 cr.)
• FINC 570 - Selected Topics in Financial Management (3 cr.)
• FINC 575 - Independent Study in Financial Management (1-3 cr.)

Research Methodology (1 Credit hour)

A student must take a research methodology course before starting the thesis.

• FINC 590 - Research Methodology (1 cr.)

Thesis (six credit hours)

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 599 - Thesis (6 cr.)

Mechanical Engineering, with specializations in Design, Industrial Engineering, Materials & Manufacturing Engineering, Mechatronics, and Power (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 provide the graduates of the program with:

• A broad knowledge of modern computational and experimental methods in engineering.
• Extensive knowledge in one of the following specializations: design, industrial engineering, materials and manufacturing or power and mechatronics.
• Deep understanding of the research techniques and data analysis in the area of specialization.
• 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

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- Engineering Core Courses (Minimum 3 credit hours)

All students select at least one out of the following four ENGR core courses:

• ENGR 511 - Computational Methods in Engineering (3 cr.)
• ENGR 512 - Experimental Methods in Engineering (3 cr.)
• ENGR 516 - Engineering for a Sustainable Environment (3 cr.)
• ENGR 518 - Engineering Statistics (3 cr.)

II- Mechanical Engineering Core Courses (Minimum 6 credit hours)

Students should select a minimum of two courses from one of the following mechanical engineering courses:

• MENG 517 - Engineering Systems Analysis and Design (3 cr.)
• MENG 522 - Materials in Design and Manufacturing (3 cr.)
• MENG 529 - Failure Analysis and Prevention (3 cr.)
• MENG 542 - Total Quality Management (3 cr.)
• MENG 560 - Applied Control, Vibration and Instrumentations (3 cr.)
• MENG 660 - Sustainability of Thermal Systems (3 cr.)

III- Technical Elective Core Courses (Minimum 9 credit hours in a given area)

Students should select a minimum of three courses from the following elective courses:

• MENG 521 - Advanced Topics in Mechanical Behavior of Engineering Materials (3 cr.)
• MENG 523 - Physical Metallurgy (3 cr.)
• MENG 526 - Computer Methods in Materials Engineering (3 cr.)
• MENG 527 - Composite Materials: Mechanics, Manufacturing, and Design (3 cr.)
• MENG 528 - Advanced Testing and Characterization Techniques (3 cr.)
• MENG 541 - Integrated Manufacturing Systems (3 cr.)
• MENG 543 - Systems Modeling and Optimization (3 cr.)
• MENG 545 - Production Systems Design (3 cr.)
• MENG 548 - Facilities Planning and Design (3 cr.)
• MENG 553 - Advanced Computer Aided Design (3 cr.)
• MENG 554 - Advanced Stress Analysis in Design and Manufacturing (3 cr.)
• MENG 555 - Analysis and Design of Dynamic Systems (3 cr.)
• MENG 557 - Engineering Design Methodologies (3 cr.)
• MENG 558 - Applied Finite Element Analysis for Engineers (3 cr.)
• MENG 561 - Robotics: Kinematics, Dynamics and Control (3 cr.)
• MENG 562 - Embedded Real Time Systems (3 cr.)
• MENG 563 - Modern Control Design (3 cr.)
• MENG 564 - Autonomous Robotics: Modeling, Navigation and Control (3 cr.)
• MENG 573 - Cogeneration and Energy Storage (3 cr.)
• MENG 575 - CFD and Turbulence Modeling (3 cr.)

IV- General Elective Courses (Maximum 6 credit hours)

The courses are selected from a set of graduate courses in all engineering disciplines, physical sciences, social sciences, management and other related graduate or 400-level courses subject to advisor and chair’s approval.

Thesis

Graduate thesis work is an important and required part of the Mechanical Engineering Master of Science degree program. Each student must submit a thesis topic that has been approved by a faculty advisor by the end of the first academic year. Various research topics are discussed in ENGR 590 and 591, Graduate Thesis Seminar I and II. Students must register in ENGR 590 before submitting a thesis topic and in ENGR 591 during execution of the thesis research to present their thesis plan. To ensure adequate faculty consultation on the thesis, the student must register for MENG 599, Graduate Thesis, by the completion of 18 credit hours. Students must register in MENG 599 continuously and for at least two semesters. The first two registrations in MENG 599 must be for three credit hours, after that MENG 599 is taken for one credit hour each semester until completion of the program requirements.

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 total 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:

The Masters of Science in Nanotechnology graduates scientists and engineers who:

1. Have the knowledge of the enabling technologies and the key aspects relevant to application in nanotechnology
2. Foster a strong culture of interdisciplinary research and development at AUC, Egypt and the region
3. Engage in advanced academic and research careers
4. Excel in an interdisciplinary environment both as individuals and within a team
5. Seize and develop commercial opportunities in the fast-advancing nanotechnology field locally and globally.

Admissions

A bachelor’s degree in sciences or engineering, with minimum GPA of 3.0 out of 4.0 is required for admissions into the nanotechnology master’s program. Admission is also subject to the general university requirements for graduate program. 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.

Courses (24 credit hours):

The program of study is planned with the faculty advisor, and should include a minimum of 9 hours of core courses and a minimum of 12 credit hours of electives:

I. Core Courses (at least 9 credit hours)

- NANO 501 - Advanced Quantum Mechanics (3 cr.)
- NANO 502 - Simulation and Modeling for Nanoscale Materials and Systems (3 cr.)
- NANO 503 - Advanced Testing and Characterization Techniques (3 cr.)
- NANO 504 - Fabrication of Nanomaterials For Films And Devices (3 cr.)
- NANO 505 - Nanochemistry (3 cr.)
- NANO 506 - Management and Economics of Nanotechnology (3 cr.)

II. Nanotechnology Elective courses (at least 12 credit hours)
A minimum of 12 credit hours are required from this list of courses.

Students may also take a maximum of one 400-level course in Sciences and Engineering, or other related areas subject to their advisor's approval.

- NANO 521 - MEMS/NEMS Technology and Devices (3 cr.)
- NANO 522 - Electronic Transport in Semiconductors (3 cr.)
- NANO 531 - Nanomaterials, Synthesis, Processing and Applications (3 cr.)
- NANO 532 - Nanocomposite Science and Technology (3 cr.)
- NANO 533 - Materials for Energy Conversion and Storage (3 cr.)
- NANO 541 - The Chemistry of Nanostructures (3 cr.)
- NANO 542 - Nanoelectrochemistry (3 cr.)
- NANO 551 - Nanotechnology Applications in Construction Materials (3 cr.)
- NANO 552 - Nanotechnology in Studying Damage and Failure in Structures (3 cr.)
- NANO 561 - Advanced Solid-State Devices (3 cr.)
- NANO 562 - Advanced Integrated Circuit Design (3 cr.)
- NANO 571 - Bionanotechnology (3 cr.)
- NANO 592 - Selected Topics in Nanotechnology (3 cr.)

Thesis (9 credit hours)

Each student must submit a thesis topic that has been approved by a faculty supervisor by the end of the first academic year. Various research topics are discussed in NANO 590 and 591, Graduate Thesis Seminar I and II, respectively. Students must register for Graduate Thesis Seminar I (NANO 590) before submitting a thesis topic while Graduate Thesis Seminar II (NANO 591) should be taken during the execution of the thesis research work. To insure adequate faculty consultation on the thesis, the student must register for the Research Thesis Guidance course (NANO 599) by the completion of 18 credit hours. The NANO 599 course must be registered over two consecutive semesters after which the course may be registered for one credit hour each semester until completion of the program requirement.

- NANO 590 - Graduate Thesis Seminars I (2 cr.)
- NANO 591 - Graduate Thesis Seminar II (1 cr.)
- NANO 599 - Research Guidance Thesis (3 cr.)

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 32 credit hours is required for the Master of Science degree. This consists of 24 credit hours of courses and 8 credit hours of thesis work.

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 12 credit hours of core courses, 3-6 credit hours of core elective courses, and 6-9 credit hours of Physics electives.

Core Courses (12 credit hours)

- PHYS 501 - Mathematical Physics (3 cr.)
- PHYS 502 - Classical Electrodynamics (3 cr.)
- PHYS 504 - Classical Mechanics (3 cr.)
- PHYS 506 - Advanced Quantum Mechanics (3 cr.)

Core Elective Courses (3-6 credit hours)

Choice of courses with consultation of advisor.

- PHYS 507 - Computational Physics (3 cr.)
- PHYS 508 - Advanced Experimental Techniques (3 cr.)
- PHYS 509 - Advanced Thermodynamics and Statistical Mechanics (3 cr.)

Physics Electives (6-9 credit hours)

A maximum of 3 credit hours of the physics electives can be taken from graduate level courses in other related areas subject to the advisors' approval.

- PHYS 510 - Introduction To Solids (3 cr.)
- PHYS 512 - Electronic Transport in Semiconductor (3 cr.)
- PHYS 513 - Theory of Solids (3 cr.)
- PHYS 549 - Passive Microwave Circuits (3 cr.)
- PHYS 556 - MEMS/NEMS Technology and Devices (3 cr.)
- PHYS 561 - Independent Studies (1-3 cr.)
- PHYS 562 - Selected topics in Physics (3 cr.)

Thesis (8 credit hours)

Each student must submit a thesis topic that has been approved by a faculty supervisor, normally after acquiring 12 credit hours of course work. Since various research topics are addressed in a sequence of two seminar courses, the student must register for the first before submitting a thesis topic while the second must be taken during the execution of the thesis research. To ensure adequate faculty consultation, two semesters of the graduate thesis course are required.

- PHYS 590 - Graduate Seminar I (1 cr.)
- PHYS 591 - Graduate Seminar II (1 cr.)
- PHYS 599 - Research Guidance and Thesis (3 cr. + 3 cr.)

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 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 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. Have broad knowledge in both the theoretical and the practical skills of RCSS interdisciplinary field.
2. Integrate fundamental and advanced knowledge to solve complex interdisciplinary problems in RCSS field,
3. Undertake interdisciplinary research, find new knowledge, analyze and document results, apply and communicate the results reflecting knowledge depth of the research in RCSS field,
4. Work independently as well as collaboratively within interdisciplinary teams and be prepared to be team leaders,
5. Demonstrate competitive professional advancement, pursue higher graduate degrees and engage in advanced academic and research in areas of their interest within industry, research centers, and academia both in local and global environment.

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 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 501 - Robotics: Kinematics, Dynamics and Control (3 cr.)
- RCSS 502 - Embedded Real Time Systems (3 cr.)
- RCSS 503 - Modern Control Design (3 cr.)
- RCSS 504 - Applied Estimation (3 cr.)

II. Group II (12 credit hours)

A minimum of 12 credit hours are required from this list of courses:

- RCSS 521 - Intelligent and Autonomous Robotic Systems (3 cr.)
- RCSS 522 - Mechatronics Innovations and Experimental Robotics (3 cr.)
- RCSS 523 - Bioinspired Robotics and Multi Robotic Systems (3 cr.)
- RCSS 524 - Robotics and Intelligent Automated Manufacturing (3 cr.)
- RCSS 531 - Teleoperation, Haptic Systems and Collaborative Control (3 cr.)
- RCSS 532 - Robust and Optimal Control (3 cr.)
- RCSS 533 - Nonlinear and Adaptive Control (3 cr.)
- RCSS 534 - Networked Control Systems: Design and Applications (3 cr.)
- RCSS 541 - Smart Systems and Computational Intelligence (3 cr.)
- RCSS 542 - MEMS/NEMS Technology and Devices (3 cr.)
- RCSS 543 - Image Analysis and Computer Vision (3 cr.)
- RCSS 544 - Sensors, Perception and Smart Systems (3 cr.)
- RCSS 545 - Advanced Artificial Intelligence (3 cr.)
- RCSS 592 - 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 400-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 an important part of the requirements for the Master of Science degree program in RCSS. Each student must submit a thesis topic that has been approved by a faculty advisor by the end of the first academic year. Various research topics are discussed in RCSS 590 and 591, Graduate Thesis Seminar I and II. Students must register in RCSS 599 before submitting a thesis topic and in RCSS 591 during execution of the thesis research to present their thesis plan. To ensure adequate faculty consultation on the thesis, the student must register for RCSS 599, Graduate Thesis, by the completion of 18 credit hours. Students must register in RCSS 599 continuously and for at least two semesters. The first two registrations in RCSS 599 must be for three credit hours, after that RCSS 599 is taken for one
credit hour each semester until completion of the thesis requirements.

- RCSS 590 - Graduate Thesis Seminar I (2 cr.)
- RCSS 591 - Graduate Thesis Seminar II (1 cr.)
- RCSS 599 - Research Guidance Thesis (3 cr.)

Graduate Diploma

Community Psychology (Graduate Diploma)

International Counseling and Community Psychology (ICCP)

The ICCP program will place its graduates at the forefront of advancing global trends towards multi-cultural and systemic psychological practice that promotes culturally relevant counseling and community intervention in Egypt and the region. Graduates will be the first practitioners trained in Egypt and the region to provide a multilayered range of individual and community level interventions to assist people struggling with issues affecting mental health, including mental illness and psychosocial issues.

Graduate Diploma in Community Psychology

A Diploma offers students who desire practitioner training within one year an essential opportunity for higher education.

Admission

The applicant should have a minimum of 3.0 GPA in undergraduate studies; if the student has an MA in a related field already, a 3.0 GPA will also be expected at that level. The applicant should have completed a minimum of 15 credits in psychology or related social/behavioral sciences, or an advanced degree related to community research/ intervention. Previous coursework or work experience in statistics and research methods is expected. The applicant should have minimum 2 years relevant work experience.

Language Requirement

The applicant should demonstrate proficiency in the English language in accordance with AUC standards.

Courses (28 credit hours)

Course work for the Graduate Diploma requires the completion of 28 credits as follows:
1. Core courses

9 credits Required / 3 courses

- PSYC 502 - Community Psychology and Systems Theory (3 cr.)
- PSYC 503 - International and Multicultural Psychology (3 cr.)
- PSYC 505 - Ethics and Professional Issues (3 cr.)

2. Specialization courses

9 credits Required / 3 courses

- PSYC 525 - Consultation to non-Profit Organizations (3 cr.)
- PSYC 530 - Community Assessment and Program Evaluation (3 cr.)
- PSYC 535 - Prevention and Intervention in Communities (3 cr.)

3. Elective

3 credits Required / 1 course

4. Practium

6 credits required/ 2 courses.

- PSYC 586 - Practicum I in Community Psychology (3 cr.)
- PSYC 587 - Practicum II in Community Psychology (3 cr.)

5. Internship/Final Project

1 credit Required:

- PSYC 589 - Professional Portfolio (1 cr.)

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 in consideration the vocational and intellectual interest of the student. Students will have a choice of four graduate courses in ECLT and two graduate courses in specified Departments/Programs of HUSS.

- 1 ECLT course in Period/Genre/Theme/Author. 3 cr.
- 1 ECLT course in Literary Criticism/Hermeneutics/Philosophical Dimension of Literature. 3 cr.
- 2 ECLT courses in Selected Topics in Comparative Literature. 6 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
  Forced Migration and Refugee Studies
  International Human Rights Law
  Sociology/Anthropology

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 500-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.

**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 inter-disciplinary 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.

Applicants to the M.A. in Economics in International Development must obtain an acceptable score on the Graduate Record Exam (GRE) within the first semester of enrollment in the program. Students are strongly urged to apply for the GRE exam immediately upon receipt of their admission letter in order to allow enough time for the reservation of an exam slot and the receipt of the results by AUC.

**Courses**

A minimum of 18 credit hours, consisting of six core courses that must include two non-economics courses, as follows:

- ECON 500 - The Economic Setting for Development (3 cr.)
- ECON 512 - Economic Growth & Development (3 cr.)
- ECON 526 - Development Research Workshop (3 cr.)
- ECON 505 - Advanced International Trade (3 cr.)
- ECON 519 - Project Evaluation (3 cr.)
- POLS 502 - Scope and Method of Developmental Analysis (3 cr.)

Either

- ECON 505 - Advanced International Trade (3 cr.)
  Or
- ECON 519 - Project Evaluation (3 cr.)
- POLS 502 - Scope and Method of Developmental Analysis (3 cr.)

One SOC/ANTH course from the following:

- SOC/ANTH 530 - Theorizing the State (3 cr.)
- SOC/ANTH 535 - World Systems and Development (3 cr.)
- SOC/ANTH 560 - Population Dynamics (3 cr.)

**Note**

Students awarded the Diploma may apply for admission to the M.A. in Economics International Development.
European Studies (Graduate Diploma)

This diploma is administered through the Department of History. It offers a broad program of interdisciplinary studies with an emphasis on the current European institutions and policies of Europe. The program of seminars and taught courses is designed as an informative background for those entering professional fields where a working knowledge of Europe will be an advantage. The program takes two semesters to complete.

Admission

An applicant is expected to have completed an undergraduate degree with a GPA of 3.00 or equivalent. The language of instruction is English in which students must be thoroughly competent.

Undergraduate students, although not eligible for the program, may with permission of the instructor take courses from the program, excepting those taught by the Law Department.

European Studies Courses

Students take a total of six courses. Three courses of three credit hours each are required, of which one is an external seminar. Two of the three required courses are conducted with the participation of representatives of the European Union. Students will in addition select three electives from the courses available for this program.

Required courses:

- EUST 506 - Seminar on Practical Diplomacy (Arranged with European embassies and institutions) (3 cr.)
- EUST 508 - Seminar on the European Union (3 cr.)

Select Either:

- EUST 504 - European Union Law (3 cr.)
- EUST 513 - The European Systems of Human Rights Protection (3 cr.)

Electives

- ECLT 517 - Nineteenth-Century Writers (3 cr.)
- ECLT 542 - Readings in French Literature (3 cr.)
- ECLT 543 - Readings in British Literature (3 cr.)
- HIST 511 - Special Topics in Nineteenth and Twentieth Century European Studies (3 cr.) May be taken when content relevant to the Diploma.
- POLS 544 - European Politics (3 cr.)
- POLS 571 - Seminar: Special Topics in International Relations (3 cr.) (May be taken when topic concerns Europe).

Select one of the following

- EUST 504 - European Union Law (3 cr.)
- LAW 504 - European Union Law (3 cr.)
Family Counseling (Graduate Diploma)

International Counseling and Community Psychology (ICCP)

The ICCP program will place its graduates at the forefront of advancing global trends towards multi-cultural and systemic psychological practice that promotes culturally relevant counseling and community intervention in Egypt and the region. Graduates will be the first practitioners trained in Egypt and the region to provide a multilayered range of individual and community level interventions to assist people struggling with issues affecting mental health, including mental illness and psychosocial issues.

Graduate Diploma in Family Counseling

A Diploma offers students who desire practitioner training within one year an essential opportunity for higher education.

Admission

The applicant should have a minimum of 3.0 GPA in undergraduate studies; if the student has an MA 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 15 credits in psychology or related behavioral sciences, or an advanced degree related to mental health service. The applicant should have minimum 2 years relevant work experience.

Language Requirement

The applicant should demonstrate proficiency in the English language in accordance with AUC standards.

Courses (34 credit hours)

Course work for the Graduate Diploma requires the completion of 34 credits as follows:

1. Core courses

15 credits Required / 5 courses

- PSYC 500 - Fundamentals of Counseling (3 cr.)
- PSYC 502 - Community Psychology and Systems Theory (3 cr.)
- PSYC 503 - International and Multicultural Psychology (3 cr.)
- PSYC 504 - Advanced Human Growth and Development (3 cr.)
- PSYC 505 - Ethics and Professional Issues (3 cr.)
2. Specialization courses

12 credits Required / 4 courses

- PSYC 506 - Psychopathology and Resilience across Cultures (3 cr.)
- PSYC 510 - Counseling: Models and Methods (3 cr.)
- PSYC 515 - Counseling Assessment: International Perspectives (3 cr.)
- PSYC 545 - Seminar in Cross-Cultural Family Studies (3 cr.)

3. Practicum

6 credits required/ 2 courses

- PSYC 580 - Practicum I in Counseling Psychology (3 cr.)
- PSYC 581 - Practicum II in Counseling Psychology (3 cr.)

4. Internship/Final Project

1 credit/ Required:

- PSYC 589 - Professional Portfolio (1 cr.)

**Forced Migration and Refugee Studies (Graduate Diploma)**

**Specialized Graduate Diploma in Forced 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) within the field of humanities and or Social Sciences and meet the university’s language proficiency exam.

**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 507 - Introduction to Forced Migration and Refugee Studies (3 cr.)
- MRS 518 - International Refugee Law (3 cr.)
- MRS 576 - Methods of Research with Forced Migrants & Refugees: Issues in Forced Migration (3 cr.)
- MRS 512 - Psychosocial Issues in Forced Migrants (3 cr.)
One elective must be chosen from the CMRS list of electives offered each semester. One elective can be chosen from the LAW department from among the following International Human Rights courses:

- LAW 514 - Human Rights in the Middle East (3 cr.)
- LAW 516 - Economic, Social, and Cultural Rights (3 cr.)
- LAW 519 - Human Rights in Africa (3 cr.)

Time Line

Completion of the Graduate Diploma in Forced Migration and Refugee Studies will normally take 1 year. It does not require the completion of a thesis. Students who finish the diploma can develop it into an MA by taking the two extra required courses of the MA program and complete a thesis.

Gender and Women’s Studies in the Middle East and North Africa (Graduate Diploma)

Course Requirements

Six courses (18 credit hours) are required for the diploma. Diploma students must take two required courses (GWST 500 and GWST 505) and four 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.

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.

Requirements
The Graduate Diploma requires 18 credit hours.

**Two courses are required:**

- LAW 500 - Legal Research and Writing (3 cr.)

One out of the following two courses:

- LAW 502 - Comparative Law (3 cr.)
- LAW 509 - International Law (3 cr.)

**Electives**

Students will be able to take up to four courses as electives. 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 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. The fulfillment of the requirements of the Graduate Diploma, 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 gayid giddan (very good) or a grade point average of 3.0. Applicants with deficiencies in their preparation may be required to take appropriate course 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.

**Requirements**

The Graduate Diploma requires 18 credit hours.

**There are four required courses:**
- LAW 509 - International Law (3 cr.)
- LAW 510 - Introduction to International Human Rights and Humanitarian Law (3 cr.)

And Two out of the following three courses:

- LAW 513 - The European System of Human Rights Protection (3 cr.)
- LAW 514 - Human Rights in the Middle East (3 cr.)
- LAW 519 - Human Rights in Africa (3 cr.)

* The remaining two courses are electives. The Law Department’s approval is required for electives offered by other departments.

Degree Time Framework

Fulfilling the Graduate Diploma in International Human Rights Law normally calls for one year of study.

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 102.

Courses

Five courses are required for the Diploma, from at least three departments. Students can take a maximum of two courses at the 400 level. Students must take three of the following courses:

- ARIC 451 - Islamic Institutions (3 cr.)
- ARIC 543 - Seminar on the Twentieth-Century Middle East (3 cr.)
  or HIST 543
- ECON 511 - Economic Development in Middle East Countries (3 cr.)
• MEST 569 - A Critical Introduction to Middle East Studies (3 cr.)
• POLS 535 - Middle East Politics (3 cr.)
• SOC/ANTH 503 - Middle Eastern Societies and Cultures (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 or Anthropology/Sociology.

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 500-level physics courses. No more than two 400-level courses, not previously taken, may be considered for credit. Successfully completed 500-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.

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.

Psychosocial Interventions for Forced Migrants and Refugees (Graduate Diploma)
Specialized Graduate Diploma in Psychosocial Intervention for Forced Migrants and Refugees

The diploma is offered by the Center for Migration and Refugee Studies (CMRS) in collaboration with the Psychology unit of the SAPE department.

Admission

Applicants seeking admission to the Graduate diploma in Psychosocial Intervention for forced migrants and refugees should have an undergraduate degree of high standing (no less than a GPA of 3.00) within the field of humanities and/or Social Sciences and meet the university’s language proficiency exam. Pre-requisites may be assigned, depending on the student’s academic background. Students with related work, research or volunteer experience will be given priority.

Applicants must display through a written personal statement in their applications the following traits: leadership, compassion, cultural sensitivity, social responsibility, emotional maturity, good mental health, and ethical standards. Recommendation letters will be required.

Graduates of this new specialized 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. These interventions can be implemented during and after emergencies in urban, rural or camp locations. They will include but not be limited to the provision of humanitarian relief that supports human rights and dignity, provision of basic psychological first aid and psychosocial support, facilitation of psycho-education and support for families and groups, community and child focused activities in support of psychosocial well-being, advocacy, referral, protection, psycho-education and peace building.

Course Requirements

The specialized graduate diploma in applied psychosocial intervention requires the successful completion of 6 courses with 19 credit hours. These will consist of 5 core courses, plus one elective. The practicum course:

- MRS 513 - Practicum in Psychosocial Interventions for Forced Migrants and Refugees (2 cr.) will be taken twice, once in the Fall and once in Spring; each semester will count for 2 credit hours.

The remaining four core courses are:
- MRS 507 - Introduction to Forced Migration and Refugee Studies (3 cr.)
- MRS 512 - Psychosocial Issues in Forced Migrants (3 cr.)
- PSYC 502 - Community Psychology and Systems Theory (3 cr.)
- MRS 514 - Psychosocial Interventions for Forced Migrants and Refugees (3 cr.)

The one elective can be selected based on student interests, with approval from the Director of the psychosocial program.

Time Line

The Graduate Diploma in Psychosocial Intervention 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. Students who finish the diploma can develop it into an MA by taking the MA required courses and completing a thesis.
On the other hand, following completion of the Graduate Diploma in Psychosocial Intervention for forced migrant and refugees, if a student wants to undertake the FMRS Diploma in refugee studies, he/she will need to take one or two courses only of the four core courses depending on the electives taken in the psychosocial diploma plus two electives of the FMRS diploma.

**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.

**TAFL (Graduate Diploma)**

**Complete the following six TAFL courses:**

The diploma program in TAFL is designed for qualified teachers of Arabic who meet the same admission requirements as those for the masters degree. The diploma is awarded to those who successfully complete the following six TAFL courses:

- TAFL 502 - Assessment in Language Learning (3 cr.)
- TAFL 507 - Computer Assisted Language Learning (CALL)/Computer Operations Techniques (3 cr.)
- TAFL 510 - Methods of Teaching a Foreign Language I (3 cr.)
- TAFL 511 - Methods of Teaching a Foreign Language II (3 cr.)
- TAFL 516 - The Linguistics of Arabic (3 cr.)

**Notes**

One three-hour elective course 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 502, 510, 516, 565, 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.
The Diploma is awarded to those who successfully complete the following six TESL courses:

- Two three-hour additional courses to be decided upon by the student in consultation with the academic adviser
- TESL 500 - English Grammar (3 cr.)
- TESL 501 - Principles of Linguistic Analysis (3 cr.)
- TESL 503 - Second Language Acquisition (3 cr.)
- TESL 510 - Methods of TESOL I (3 cr.)

A maximum of one appropriate course may be accepted with departmental approval, as transfer credit toward the Diploma in lieu of the following:

- TESL 501 - Principles of Linguistic Analysis (3 cr.)
- TESL 503 - Second Language Acquisition (3 cr.)
- TESL 510 - Methods of TESOL I (3 cr.)
- TESL 511 - Methods of TESOL II (3 cr.)
- or an acceptable elective

Doctorate of Philosophy (Ph.D.)

Applied Sciences, with specializations in Biotechnology, Computer Science 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 will be administered by the Doctoral Program Steering Committee which has a representation of one faculty from the various departments in the School of Sciences and Engineering.

This program offers a Ph.D. degree in Applied Sciences with specializations in:

- Nanotechnology,
- Biotechnology,
- Chemistry,
- or Computer Science.

Admission Requirements
M.Sc. in an Engineering or Science discipline
- Demonstrated proficiency in English language as determined by AUC graduate admissions
- Obtain an acceptable score in the Graduate Record Exam (GRE)

Program Objectives

The mission of the Ph.D. program in Applied Sciences and Engineering is to provide in-depth training to students in the natural sciences, modern engineering, and computer science and in the conduct of original research leading to a doctoral dissertation.

The primary goal of the program is to provide students with an opportunity to contribute to the advancement of knowledge in the field of applied sciences and engineering. The program is aimed at providing students with the opportunity to develop their professional knowledge and expertise to a high caliber and to qualify for leadership positions in teaching, in research, in administration and management and in policy analysis and program development. The program caters to demands of industry and research institutes and places a strong emphasis on original thinking, professional behavior and ethical conduct. The objectives of the program are for students to acquire

1. A broad analytic understanding of advanced experimental, theoretical and computational methods in the applied sciences and engineering
2. Substantive knowledge of some field or area of practice (e.g., nanotechnology, biotechnology, computer science, environmental engineering, etc.).
3. Competence to conduct independent, empirical research that extends the knowledge base of the field of interest.
4. Ability to generate new ideas, convince others that their ideas are worth pursuing, do the necessary research to demonstrate that their ideas are viable, and communicate the results of their research in the public domain.

Program Outcomes

Upon completing the degree requirements for the Ph.D. Program in Applied Sciences and Engineering graduating students should have the ability to:

1. Pursue a career in academia in teaching and/or research.
2. Pursue a career in industrial research and development (R&D).
3. Identify well-defined science and/or engineering problems of importance to the profession or the community, as well as generate new ideas and approaches to resolve such problems.
4. Apply advanced experimental, analytical and computational techniques to solve complex science problems.
5. Convince others that their ideas are worth pursuing and explore funding opportunities for their research.
6. Initiate scientific collaborations schemes that advance their research endeavors.
7. Successfully communicate their results to constituencies of various technical backgrounds and fields of specialty.
8. Make significant contributions to their field of specialization and profession through their own continued research, writing, teaching, and practice.
9. Implement the code of ethics within the study and work environments.

Doctoral of Philosophy Degree Requirements:

Doctoral qualification decisions are made by the Doctoral Program Steering Committee. Students going through this program are expected to successfully complete the following requirements:
1. **Pass the required course work with a GPA 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. Students who change their major track from that used for their master’s degree to a new track for their Ph.D. degree may have to take more than thirty-six (36) hours to fulfill the course requirements. Because of the interdisciplinary nature of the program and in order to ensure sufficient breadth of study, doctoral students must include in the program of study at least one graduate course for a minimum of 3 hours of credit in areas outside one’s main track. In addition the student must complete 3 credit hours of Seminar courses and register for thirty-three (33) credit hours of Dissertation research work. Courses for each track will be listed at the 500 and 600 levels in addition to remedial courses to be taken at the 400 level whenever deemed necessary.

**The Academic Advisor and the Research Advising Committee:**

The academic advisor is determined by the major track of the student, and is particularly important for assistance in the preliminary course planning of a student’s Ph.D. program. Each major track has at least one faculty member advisor to be identified by the Doctoral Program Steering Committee (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 Advising Committee, which consists of the Chair of the Committee (Dissertation Advisor) and two other members. This committee will play 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 a faculty member willing to serve as the Chair of the Research Advising Committee and to choose in consultation with her/him the other members. In most cases the Chair of the Committee will eventually become the dissertation advisor.

**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 Advising Committee. The final Plan of Study will be drafted in consultation with the Research Advising Committee. A final up-to-date copy must be submitted before the student applies for Candidacy.

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 track. It
is the student’s responsibility to make sure that all requirements are met. Any departure from the requirements must be requested by written petition to be approved by the Doctoral Program Steering Committee.

**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. At least twelve (12) weeks prior to the examination, the student must submit a request indicating her/his intention to take the examination. The Ph.D. Qualifying Examination will be administered by an Examining Committee consisting of the Research Advising Committee in addition to two other examiners to be identified by the Doctoral Program Steering Committee. Following the examination, the Examining Committee will submit an evaluation of the student’s performance to the Doctoral Program Steering Committee.

**The Doctoral Candidacy and the Thesis Proposal Presentation:**

To proceed towards the Ph.D. Candidacy the student has to write a thesis research proposal under the guidance of the Dissertation Advisor and will give a Thesis Proposal Presentation in front of the Research Advising Committee. Upon the acceptance of the proposal by the Research Advising Committee, the student makes an oral presentation of the thesis 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 Doctoral Program Steering Committee. In case the student does not present an acceptable proposal, the student must take immediate steps to refine the proposal in consultation with the chair and other committee members. The Thesis Proposal Presentation requirement is completed when the Research Advising Committee chair reports a successful proposal presentation to the Office of the Registrar.

Following acceptance of the thesis proposal, the Dissertation Defense Committee is finalized. This usually consists of the three members of the Research Advising Committee in addition to two external examiners. The student should submit a written request to the Doctoral Program Steering Committee to approve the proposed Dissertation Defense Committee. The membership of this Committee is communicated to the SSE Dean and the Dean of Graduate Studies for approval.

**The Dissertation and Its Defense --- Final Oral Defense:**

Upon completion, the dissertation must receive a written evaluation from each member of the Dissertation Defense Committee and must be defended orally in an open examination before the committee. Following the successful Final Oral Defense, the student must consult with the dissertation advisor(s) about any changes required by the committee, and must make these changes before final submission of the thesis to the Dean of Graduate Studies.

**Course and Research Requirements**

Minimum number of credit hours beyond the B.Sc. degree: 72

- Dissertation hours: 33 (BIOT 699, NANO 699, CSCE 699)
- Seminar hours: 3
- 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 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 hours of credit to be counted towards the Ph.D. degree

**Case 2:** M.Sc. in a different Applied Science discipline

A candidate may receive up to 12 hours of credit to be counted towards the Ph.D. degree

A plan of study will be developed under guidance of the academic advisor of the student at the time of admission and may be modified later on by her/his Research Advising Committee. Courses are to be selected from the following:

### I- Engineering and Applied Sciences core

**Admission Case 1:** at least 3 credits (1 course)

**Admission Case 2:** at least 6 credits (2 courses)

- BIOT 521 - Fundamentals of Bioinformatics (3 cr.)
- CSCE 527 - Neural Networks and Genetic Algorithms (3 cr.)
- CSCE 561 - Knowledge Engineering (3 cr.)
- CSCE 565 - Advanced Artificial Intelligence (3 cr.)
- CSCE 664 - Advanced Data Mining (3 cr.)
- EENG 522 - Stochastic Processes for Engineers (3 cr.)
- ENGR 511 - Computational Methods in Engineering (3 cr.)
- ENGR 512 - Experimental Methods in Engineering (3 cr.)
- ENGR 518 - Engineering Statistics (3 cr.)
- ENVE 562 - Unit Operations in Environmental Engineering (3 cr.)
- NANO 502 - Simulation and Modeling for Nanoscale Materials and Systems (3 cr.)
- NANO 503 - Advanced Testing and Characterization Techniques (3 cr.)
- NANO 504 - Fabrication of Nanomaterials For Films And Devices (3 cr.)
- MACT 604 - Advanced Numerical Methods (3 cr.)
- MACT 605 - Advanced Probability with Engineering Applications (3 cr.)
- MENG 543 - Systems Modeling and Optimization (3 cr.)
- MENG 681 - Stochastic Simulation (3 cr.)
- PHYS 502 - Classical Electrodynamics (3 cr.)
- RCSS 504 - Applied Estimation (3 cr.)
- RCSS 541 - Smart Systems and Computational Intelligence (3 cr.)

### II- Applied Sciences Specialization courses

Dependant on the admission status the student may take the following number of credit hours from the listed of courses. At least one course should be a 600-level course

- Admission Case 1: at least 6 credit hours (2 courses)
- Admission Case 2: at least 12 credit hours (4 courses)

All master’s 500-level courses offered by the following graduate programs: Biotechnology (BIOT), Chemistry (CHEM), Computer Science (CSCE), Nanotechnology (NANO) and Physics (PHYS). In addition, the students should take at least one 600-level course from the following list:

- BIOT 511 - Bioengineering (3 cr.)
Catalog 2012-2013 Extract

- BIOT 543 - Microbial Biotechnology (3 cr.)
- BIOT 601 - Current Topics in Biotechnology (3 cr.)
- BIOT 602 - Reading and Conference Course (3 cr.)
- BIOT 620 - Computational Genomics and Transcriptomics (3 cr.)
- CHEM 603 - Bioseparation Processes for Food and Pharmaceutical Industries (3 cr.)
- CHEM 615 - Principles and Applications of Mass Spectrometry (3 cr.)
- CSCE 642 - Mobile and Pervasive Computing (3 cr.)
- CSCE 692 - Advanced Selected Topics in Computer Science (3 cr.)
- EENG 661 - Nanoscale CMOS (3 cr.)
- NANO 621 - Nanophotonics (3 cr.)
- NANO 630 - Biomaterials (3 cr.)
- NANO 642 - Nanocatalysis (3 cr.)
- NANO 505 - Nanochemistry (3 cr.)
- NANO 640 - Nanoporous Materials (3 cr.)
- PHYS 602 - Classical Electrodynamics II (3 cr.)
- PHYS 641 - Integrated Photonics (3 cr.)
- PHYS 642 - Computational Electromagnetics (3 cr.)
- PHYS 662 - Advanced Selected Topics in Physics (3 cr.)

III- Interdisciplinary Course Requirement

To ensure sufficient breadth of study, students must include in their program of study at least one graduate course for a minimum of 3 hours of credit in areas outside their specialization.

IV- Dissertation (Minimum of 36 credit hours)

Dissertation work includes completion of:

- Graduate Thesis Seminar I, 2 cr. (According to discipline student should select: BIOT, CHEM, CSCE, ENGR, NANO, PHYS or RCSS 590)
- Graduate Advanced Research Seminar (PHDS 691), 1 cr.

Research Guidance Dissertation, a minimum of 33 cr. (BIOT 699, CSCE 699, or NANO 699)

To achieve the Ph.D. Candidacy the student has to write a thesis research proposal under the guidance of the Dissertation Advisor and will give a Thesis Proposal Presentation in front of the Research Advising Committee. Upon the acceptance of the proposal by the Research Advising Committee, the student makes an oral presentation of the thesis research proposal, including relevant background material. The Research Advising Committee will report their recommendation to the Doctoral Program Steering Committee. In case the student does not present an acceptable proposal, the student must take immediate steps to refine the proposal in consultation with the chair and other committee members. The Thesis Proposal Presentation requirement is completed when the Research Advising Committee chair reports a successful proposal presentation to the Office of the Registrar.

Following acceptance of the thesis proposal, the Dissertation Defense Committee is formed from the three members of the Research Advising Committee in addition to two external examiners. The student should submit a written request to the Doctoral Program Steering Committee to approve the proposed Dissertation Defense Committee. The membership of this Committee is communicated to the SSE Dean and the Dean of Graduate Studies for approval.

Upon completion, the dissertation must receive a written evaluation from each member of the Dissertation Defense Committee and must be defended orally in an open examination before the committee. Following the successful Final
Oral Defense, the student must consult with the dissertation advisor(s) about any changes required by the committee, and must make these changes before final submission of the thesis to the Dean of Graduate Studies.

Engineering, with specializations in Construction Engineering, Electronics Engineering, Environmental Engineering and Mechanical Engineering (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 will be administered by the Doctoral Program Steering Committee which has a representation of one faculty from the various departments in the School of Sciences and Engineering.

This program offers a Ph.D. degree Engineering with specializations in:

- Mechanical Engineering,
- Construction Engineering,
- Electronics Engineering,
- Robotics, Control and Smart Systems,
- or Environmental Engineering.

Admission Requirements

- M.Sc. in an Engineering discipline
- Demonstrated proficiency in English language as determined by AUC graduate admissions
- Obtain an acceptable score in the Graduate Record Exam (GRE)

Program Objectives

The mission of the Ph.D. program in Applied Sciences and Engineering is to provide in-depth training to students in the natural sciences, modern engineering, and computer science and in the conduct of original research leading to a doctoral dissertation.

The primary goal of the program is to provide students with an opportunity to contribute to the advancement of knowledge in the field of applied sciences and engineering. The program is aimed at providing students with the opportunity to develop their professional knowledge and expertise to a high caliber and to qualify for leadership positions in teaching, in research, in administration and management and in policy analysis and program development. The program caters to demands of industry and research institutes and places a strong emphasis on original thinking, professional behavior and ethical conduct. The objectives of the program are for students to acquire
1. A broad analytic understanding of advanced experimental, theoretical and computational methods in the applied sciences and engineering
2. Substantive knowledge of some field or area of practice (e.g., electronics engineering, environmental engineering, etc.).
3. Competence to conduct independent, empirical research that extends the knowledge base of the field of interest.
4. Ability to generate new ideas, convince others that their ideas are worth pursuing, do the necessary research to demonstrate that their ideas are viable, and communicate the results of their research in the public domain.

Program Outcomes

Upon completing the degree requirements for the Ph.D. Program in Applied Sciences and Engineering graduating students should have the ability to:

1. Pursue a career in academia in teaching and/or research.
2. Pursue a career in industrial research and development (R&D).
3. Identify well-defined science and/or engineering problems of importance to the profession or the community, as well as generate new ideas and approaches to resolve such problems.
4. Apply advanced experimental, analytical and computational techniques to solve complex science and/or engineering problems.
5. Convince others that their ideas are worth pursuing and explore funding opportunities for their research.
6. Initiate scientific collaborations schemes that advance their research endeavors.
7. Successfully communicate their results to constituencies of various technical backgrounds and fields of specialty.
8. Make significant contributions to their field of specialization and profession through their own continued research, writing, teaching, and practice.
9. Implement the code of ethics within the study and work environments.

Doctoral of Philosophy Degree Requirements:

Doctoral qualification decisions are made by the Doctoral Program Steering Committee. Students going through this program are expected to successfully complete the following requirements:

1. **Pass the required course work with a GPA 3.0 or higher:** This insures 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. Students who change their major track from that used for their master’s degree to a new track for their Ph.D. degree may have to take more than...
thirty-six (36) hours to fulfill the course requirements. Because of the interdisciplinary nature of the program and in order to ensure sufficient breadth of study, doctoral students must include in the program of study at least one graduate course for a minimum of 3 hours of credit in areas outside one’s main track. In addition the student must complete 3 credit hours of Seminar courses and register for thirty-three (33) credit hours of Dissertation research work. Courses for each track will be listed at the 500 and 600 levels in addition to remedial courses to be taken at the 400 level whenever deemed necessary.

The Academic Advisor and the Research Advising Committee:

The academic advisor is determined by the major track of the student, and is particularly important for assistance in the preliminary course planning of a student’s Ph.D. program. Each major track has at least one faculty member advisor to be identified by the Doctoral Program Steering Committee (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 Advising Committee, which consists of the Chair of the Committee (Dissertation Advisor) and two other members. This committee will play 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 a faculty member willing to serve as the Chair of the Research Advising Committee and to choose in consultation with her/him the other members. In most cases the Chair of the Committee will eventually become the dissertation advisor.

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 Advising Committee. The final Plan of Study will be drafted in consultation with the Research Advising Committee. A final up-to-date copy must be submitted before the student applies for Candidacy.

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 track. It is the student’s responsibility to make sure that all requirements are met. Any departure from the requirements must be requested by written petition to be approved by the Doctoral Program Steering Committee.

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. At least twelve (12) weeks prior to the examination, the student must submit a request indicating her/his intention to take the examination. The Ph.D. Qualifying Examination will be administered by an Examining Committee consisting of the Research Advising Committee in addition to two other examiners to be identified by the Doctoral Program Steering Committee. Following the examination, the Examining Committee will submit an evaluation of the student’s performance to the Doctoral Program Steering Committee.

The Doctoral Candidacy and the Thesis Proposal Presentation:

To proceed towards the Ph.D. Candidacy the student has to write a thesis research proposal under the guidance of the Dissertation Advisor and will give a Thesis Proposal Presentation in front of the Research Advising Committee. Upon the acceptance of the proposal by the Research Advising Committee, the student makes an oral presentation of the
thesis 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 Doctoral Program Steering Committee. In case the student does not present an acceptable proposal, the student must take immediate steps to refine the proposal in consultation with the chair and other committee members. The Thesis Proposal Presentation requirement is completed when the Research Advising Committee chair reports a successful proposal presentation to the Office of the Registrar.

Following acceptance of the thesis proposal, the Dissertation Defense Committee is finalized. This usually consists of the three members of the Research Advising Committee in addition to two external examiners. The student should submit a written request to the Doctoral Program Steering Committee to approve the proposed Dissertation Defense Committee. The membership of this Committee is communicated to the SSE Dean and the Dean of Graduate Studies for approval.

The Dissertation and Its Defense --- Final Oral Defense:

Upon completion, the dissertation must receive a written evaluation from each member of the Dissertation Defense Committee and must be defended orally in an open examination before the committee. Following the successful Final Oral Defense, the student must consult with the dissertation advisor(s) about any changes required by the committee, and must make these changes before final submission of the thesis to the Dean of Graduate Studies.

Course and Research Requirements

Minimum number of credit hours beyond the B.Sc. degree: 72

Dissertation hours 33 (CENG 699, EENG 699, ENVE 699, MENG 699)

Seminar hours 3

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 of the student at the time of admission.

Case 1: M.Sc. in the same Engineering discipline

A candidate may receive up to 24 hours of credit to be counted towards the Ph.D. degree

Case 2: M.Sc. in a different Engineering discipline

A candidate may receive up to 12 hours of credit to be counted towards the Ph.D. degree

A plan of study will be developed under guidance of the academic advisor of the student at the time of admission and may be modified later on by her/his Research Advising Committee. Courses are to be selected from the following:

I- Engineering and Applied Sciences core

Admission Case 1: at least 3 credits (1 course)

Admission Case 2: at least 6 credits (2 courses)

- BIOT 521 - Fundamentals of Bioinformatics (3 cr.)
• CSCE 527 - Neural Networks and Genetic Algorithms (3 cr.)
• CSCE 561 - Knowledge Engineering (3 cr.)
• CSCE 565 - Advanced Artificial Intelligence (3 cr.)
• CSCE 664 - Advanced Data Mining (3 cr.)
• EENG 522 - Stochastic Processes for Engineers (3 cr.)
• ENGR 511 - Computational Methods in Engineering (3 cr.)
• ENGR 512 - Experimental Methods in Engineering (3 cr.)
• ENGR 518 - Engineering Statistics (3 cr.)
• ENVE 562 - Unit Operations in Environmental Engineering (3 cr.)
• NANO 502 - Simulation and Modeling for Nanoscale Materials and Systems (3 cr.)
• NANO 503 - Advanced Testing and Characterization Techniques (3 cr.)
• NANO 504 - Fabrication of Nanomaterials For Films And Devices (3 cr.)
• MACT 604 - Advanced Numerical Methods (3 cr.)
• MACT 605 - Advanced Probability with Engineering Applications (3 cr.)
• MENG 543 - Systems Modeling and Optimization (3 cr.)
• MENG 681 - Stochastic Simulation (3 cr.)
• PHYS 502 - Classical Electrodynamics (3 cr.)
• RCSS 504 - Applied Estimation (3 cr.)
• RCSS 541 - Smart Systems and Computational Intelligence (3 cr.)

II- Engineering Specialization courses

Dependant on the admission status the student may take the following number of credit hours from the listed of courses. At least one course should be a 600-level course

Admission Case 1: at least 6 credit hours (2 courses)

Admission Case 2: at least 12 credit hours (4 courses)

All Masters 500-level courses offered by the following graduate programs: Construction Engineering (CENG), Environmental Engineering (ENVE), Electronics Engineering (EENG), Mechanical Engineering (MENG) and Nanotechnology (NANO). In addition the students should take at least one 600-level course from the following list:

• EENG 622 - Advanced Topics in Wireless Communications (3 cr.)
• EENG 661 - Nanoscale CMOS (3 cr.)
• ENVE 662 - Advanced Treatment Processes (3 cr.)
• ENVE 680 - Independent Study in Environmental Engineering (3 cr. Max.)
• ENVE 692 - Advanced Selected Topics in Environmental Engineering (3 cr.)
• CENG 611 - Structural Stability (3 cr.)
• CENG 612 - Structural Dynamics (3 cr.)
• CENG 613 - Earthquake Engineering and Seismic Design (3 cr.)
• CENG 631 - Specialty Materials for Construction (3 cr.)
• CENG 632 - Highways Pavement Systems and Design (3 cr.)
• CENG 679 - Preserving, Repair and Sustainability of Structures (3 cr.)
• CENG 680 - Independent Study in Structural and Material Engineering (3 cr. max.)
• CENG 692 - Advanced Selected Topics in Structural and Material Engineering (3 cr.)
• MENG 615 - Continuum Mechanics (3 cr.)
• MENG 620 - Nonlinear and Adaptive Control (3 cr.)
• MENG 660 - Sustainability of Thermal Systems (3 cr.)
• MENG 670 - Advanced Transport Phenomena (3 cr.)
• NANO 621 - Nanophotonics (3 cr.)
• NANO 642 - Nanocatalysis (3 cr.)
• RCSS 692 - Advanced Selected Topics in Robotics, Control and Smart Systems (RCSS) (3 cr.)

* Environmental Engineering students can also register for online graduate course offerings through a cooperative program between AUC’s Department of Construction and Architectural Engineering and Iowa State University’s Department of Civil, Construction and Environmental Engineering. Sample courses are as follows:

• CE 521: Environmental Biotechnology
• CE 522: Water Pollution Control Processes
• CE 569: Environmental Geotechnology
• CE 571: Surface Water Hydrology

III- Interdisciplinary Course Requirement

To ensure sufficient breadth of study, students must include in their program of study at least one graduate course for a minimum of 3 hours of credit in areas outside their specialization.

• PHDS/PHDE 601 - Systems and Computational Biology (3 cr.)

IV- Dissertation (Minimum of 36 credit hours)

Dissertation work includes completion of:

• Graduate Thesis Seminar I, 2 cr. (According to discipline student should select: BIOT, CHEM, CSCE, ENGR, NANO or RCSS 590)
• Graduate Advanced Research Seminar (PHDE 691), 1 cr.
Research Guidance Dissertation, a minimum of 33 cr. (CENG 699, EENG 699, ENVE 699, or MENG 699)

To achieve the Ph.D. Candidacy the student has to write a thesis research proposal under the guidance of the Dissertation Advisor and will give a Thesis Proposal Presentation in front of the Research Advising Committee. Upon the acceptance of the proposal by the Research Advising Committee, the student makes an oral presentation of the thesis research proposal, including relevant background material. The Research Advising Committee will report their recommendation to the Doctoral Program Steering Committee. In case the student does not present an acceptable proposal, the student must take immediate steps to refine the proposal in consultation with the chair and other committee members. The Thesis Proposal Presentation requirement is completed when the Research Advising Committee chair reports a successful proposal presentation to the Office of the Registrar.

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Other Courses of Study

Development Studies at AUC (Graduate)

School of Business
School of Humanities and Social Sciences

Development Studies is a rapidly growing area of study concerned with the long-term social, political and economic changes taking place in the Global South. The field is interdisciplinary and multidisciplinary within the social sciences, drawing on the perspectives of anthropology, economics, gender and women’s studies, political science, public policy and administration, and sociology in order to understand the complexities of poverty and inequality, population growth, political economy, globalization, international division of labor, structural adjustment, war and human rights, democratization, civil society and NGOs, social justice, and sustainable and alternative forms of development.

Examining questions of development in the Middle East and Africa, in particular, and the Global South more broadly is an AUC strength. Several departments and research centers at AUC offer students opportunities to pursue advanced degrees and to participate in collaborative applied projects and scholarly research in development studies.

Graduate Programs:

- Economics in International Development (MA and graduate diploma)
- Gender and Women’s Studies (MA and graduate diploma)
- Gender and Development in the Middle East/North Africa Track
- Migration and Refugee Studies (MA and graduate diploma)
- Political Science (MA and graduate diploma)
  Professional Development Specialization
- Public Policy and Administration (MPPA and graduate diploma)
- Sociology-Anthropology (MA)

Research Centers:

- The Cynthia Nelson Institute for Gender & Women’s Studies
- Desert Development Center
- Migration and Refugee Studies Center
- John D. Gerhart Center for Philanthropy and Civic Engagement
- Social Research Center

Premedical Track

Coordinator: R. Siam (Biology)

The Biology department is coordinating the premedical track. For details refer to the specific program "Premedical Track". The Biology degree incorporates all premedical courses while leading to a Bachelor of Science in Biology.
The Premedical track is open to all AUC undergraduate students. The track provides basic biological and physical science courses that prepare students for admission into medical schools abroad. Most US and Canadian medical schools require completion of a Bachelor degree that includes the required courses for admission. The liberal art education at AUC provides the well-rounded education required by medical schools.

Premedical students will have to fulfill all requirements for a degree in their major and those of the premedical track. Premedical students are assigned an advisor from the Department of Biology to guide with course requirements for medical school admissions, Medical College Admission Test (MCAT), medical school applications and extracurricular activities.

Requirements:

42-50 credits are required for the premedical track:

- BIOL 104 - The Unity of Life (3 cr. + 1 cr. lab)
- BIOL 211 - Cell Biology (3 cr. + 1 cr. lab)
- BIOL 221 - Genetics (3 cr. + 1 cr. lab)
- CHEM 105 - General Chemistry I (3 cr.)
- CHEM 106 - General Chemistry II (3 cr.)
- CHEM 115L - General Chemistry Laboratory (1 cr.)
- CHEM 116L - General Chemistry Laboratory (1 cr.)
- CHEM 203 - Organic Chemistry I (3 cr.)
- CHEM 306 - Organic Chemistry II (3 cr.)
- CHEM 310L - Organic Chemistry I Laboratory (1 cr.)
- CHEM 316L - Organic Chemistry II Laboratory (1 cr.)
- MACT 131 - Calculus I (0/3)
- MACT 132 - Calculus II (3 cr.)
- PHYS 111 - Classical Mechanics, Sound and Heat (3 cr.)
- PHYS 112 - Electricity and Magnetism (3 cr.)
- PHYS 123L - General Physics Laboratory I (1 cr.)
- PHYS 124L - General Physics Laboratory II (1 cr.)

Notes:

Students applying for admission into certain medical schools may be required to take additional courses.

Rhetoric and Composition

Core Curriculum Requirements

Students must fulfill 9 credits in Rhetoric and Composition, in two ways:

- RHET 101 - Approaches to Critical Writing (3 cr.)
- RHET 102 - Effective Argument (3 cr.)
- RHET 201 - Research Writing (3 cr.)

Or

- A 300 or 400 level writing course (3 cr.) (e.g., RHET 320, 321, 322, 400, or 410)
  and:
  - RHET 102 - Effective Argument (3 cr.)
  - RHET 201 - Research Writing (3 cr.)

**Course Prefix Identification**

Courses are identified by a prefix, which is related to the department offering the course, and a number, which describes the level of the course. Courses numbered 100-199 are freshman-level courses normally not open to juniors or seniors. Courses numbered 200-299 and 300-399 are normally taken by sophomore and junior students. Courses numbered 400-499 are designated for seniors, although superior students of sophomore or junior standing may be admitted by permission of the department offering the course. Also, in some departments, graduate students may earn a limited number of credits in 400-level courses. Courses numbered 500-699 are open to graduate students. Not all departmental prefixes represent fields in which a degree is offered; some represent minors and others only courses.

Courses numbered 500-599 are listed in the graduate section and 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:

<table>
<thead>
<tr>
<th>Department</th>
<th>PREFIX</th>
<th>Descriptive</th>
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<tbody>
<tr>
<td>Graduate School of Education</td>
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<td>Education</td>
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<td>School of Business</td>
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<td>Department of Accounting</td>
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<td>Department of Management</td>
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<td>Management</td>
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<td></td>
<td>MOIS</td>
<td>Management of Information Systems</td>
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<td>Marketing</td>
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<td>Journalism and Mass Communication</td>
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<td>Middle East Studies Program</td>
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<td>Prince Alwaleed Bin Talal Bin Abdulaziz Alsaud Center for American Studies and Research</td>
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**School of Humanities and Social Sciences**

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<td>Department of Rhetoric and Composition</td>
<td>RHET</td>
<td>Rhetoric and Composition</td>
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</tbody>
</table>
| Department of Sociology, Anthropology, Psychology, and Egyptology | ANTH EGPT PSYC SOC SOC/ANTH | Anthropology
<p>|                                                     | EGSPT   | Egyptology                               |
|                                                     | PSYC    | Psychology                               |
|                                                     | SOC     | Sociology                                |
|                                                     | SOC/ANTH| Anthropology/Sociology                   |
| The Arabic Language Institute                        | ALNG    | Arabic Language Credit Courses           |
|                                                     | ALIN    | Arabic Language Intensive                |
|                                                     | ALIS    | Arabic Language Intensive Summertime      |
|                                                     | ALWT    | Arabic Writing Courses                   |
|                                                     | CASA    | Center for Arabic Studies Abroad         |
|                                                     | TAFL    | Teaching Arabic as a Foreign Language    |
| The English Language Institute                       | ENGL    | English                                  |
|                                                     | LING    | Linguistics                              |
|                                                     | TESL    | Teaching English for Other Languages     |</p>
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**Core Curriculum**

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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

ACCT 201 - Financial Accounting

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.

(3 cr.)

ACCT 202 - Managerial Accounting

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.

Prerequisites
ACCT 201

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.

(3 cr.)

ACCT 301 - Intermediate Accounting I
Description
An in-depth coverage of accounting valuation processes, accounting income measurement, and disclosure issues in financial reports.

Prerequisites
ACCT 201 and MACT 112.

When Offered
Offered in fall and spring.

Notes
Enrollment 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.

(3 cr.)

ACCT 302 - Intermediate Accounting II

Description
A continuation of Intermediate Accounting I (ACCT 302), focusing on the liabilities and equity sections in various types of ownership.

Prerequisites
ACCT 301

When Offered
Offered in fall and spring.

Notes
Enrollment 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.

(3 cr.)

ACCT 303 - Advanced Accounting

Description
Specialized topics in partnership accounting, agency and branch accounting, mergers and acquisitions, consolidated statements, fiduciary accounting, fund and non-profit accounting.

Prerequisites
ACCT 302

When Offered
Offered in fall and spring.

Notes
Enrollment 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.

(3 cr.)

ACCT 304 - Cost Accounting

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.

Prerequisites
ACCT 202

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.

(3 cr.)

ACCT 305 - Auditing

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.

Prerequisites
ACCT 302

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.

(3 cr.)

ACCT 306 - Principles of Taxation

Description
Taxation of various business entities and the investors who own them, both in the US and Egypt. Practical cases covering tax planning, tax rules and regulations are highlighted.

Prerequisites
ACCT 302 and MGMT 311.

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.

(3 cr.)

ACCT 401 - Contemporary Issues in Auditing

Description
This course highlights the governance aspects of the auditing function and its role in promoting financial transparency. Topics covered will include fraud auditing, advanced audit sampling techniques, auditing in IT environments, and the auditor's professional responsibilities.

Prerequisites
ACCT 305
When Offered
Offered in spring.
(3 cr.)

ACCT 402 - Special Topics in Tax Accounting

Description
Practical and theoretical training in the more common and important provisions of the tax codes. Tax case research and preparation are emphasized.
Prerequisites
ACCT 306
When Offered
Offered in spring.
(3 cr.)

ACCT 403 - Contemporary Issues in Accounting

Description
This is a research and readings capstone course which integrates all branches of Accounting. Emphasis is on developing the research skills to deal with current and prospective issues and problems of accounting.
Prerequisites
Graduating Senior.
When Offered
Offered in fall and spring.
(3 cr.)

ACCT 470 - Special Topics in Accounting

Description
Considers selected topics of current relevance in Accounting.
Prerequisites
Prerequisite: Consent of Instructor.
When Offered
Offered occasionally.
Notes
Enrollment 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.
(3 cr.)

ACCT 475 - Independent Study in Accounting

Description
Guided readings, research, and discussions on specific selected topic in Accounting.
Prerequisites
Prerequisites: Senior standing and consent of ACCT unit head and chair.
When Offered
Offered occasionally.
Notes
Enrollment 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.

(1-3 cr.)

**ACCT 501 - Financial Reporting and Analysis**

**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.

(3 cr.)

**ACCT 502 - Managerial Accounting for Decision Making**

**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.

**Prerequisites**
ACCT 501

**When Offered**
Offered in fall and spring

(3 cr.)

**AENG 222 - Architecture: Art or Engineering**

**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.

**Cross-listed**
Same as ARTV 222.

(3 cr.)

**AENG 234 - Human Aspects in Architectural Design**

**Description**
Introduction to architectural design related environment-behavior issues. Introduction to architectural programming and post-occupancy evaluation. Human aspects in design: perception, behavioral uses of spaces, users needs, ergonomics, proximics. Design for the disabled. Effects of cultural processes on architecture and urban design. Use of environment-behavior research methods in architecture and urban design. Design applications of theoretical concepts into design projects.
AENG 250 - Foundations of 3-Dimensional Design

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.

Cross-listed
Same as ARTV 250.

Hours
Four-hour studio period.
3 cr.

AENG 251 - Introduction to Architectural Design

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.

Prerequisites
AENG 273 and ARTV 221.

Hours
One-hour class period and three-hours studio period.

When Offered
Offered in fall and spring.
(3 cr.)

AENG 268 - Surveying for Architects

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.

Prerequisites
MACT 132

Hours
Three-hour lab period.
(1 cr.)

AENG 273 - Digital Representation Tools for Architects
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.

Prerequisites
ENGR 115

Hours
One-hour class period and three-hour lab period.

When Offered
Offered in fall and spring.

(2 cr.)

AENG 321 - Introduction to Architectural Engineering

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.

Prerequisites
CENG 215

When Offered
Offered in fall and spring.

Notes
(Two-hours lecture period and three-hour lab period)

(3 cr.)

AENG 323 - Construction Materials and Quality Control

Description

Prerequisites
ENGR 229

Hours
Two one-hour class periods and three-hour lab period.

When Offered
Offered in fall and spring.

(3 cr.)

AENG 326 - Environmental Control Systems and Sustainable Design

Description
Basic principles and application of environmental systems: acoustic, lighting, HVAC, energy use, and their integration with the building envelop. Performance of the building envelopes materials and assemblies. Introduction to LEED and similar systems. Sustainable design principles and its applications. Sustainable design project.
AENG 351 - Architectural Design Studio I

**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.

**Prerequisites**
AENG 234 and AENG 251

**Hours**
Six-hour studio period.

**When Offered**
Offered in fall and spring.

(4 cr.)

AENG 352 - Architectural Design Studio II

**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.

**Prerequisites**
ARTV 314, AENG 250 and AENG 351

**Hours**
Six-hour studio period.

**When Offered**
Offered in fall and spring.

(4 cr.)

AENG 368 - Housing Design and Geographic Information Systems

**Description**
Prerequisites
AENG 268 and AENG 351

Hours
Three-hour studio period and three hour lab period.

When Offered
Offered in fall and spring.

(3 cr.)

AENG 420 - Design of Interior Spaces

Description

Prerequisites
CENG 215 or AENG 273

Hours
One-hour lecture and three-hour Studio.

When Offered
Offered in fall and spring.

(3 cr.)

AENG 426 - Building Service Systems and Building Systems Integration

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.

Prerequisites
AENG 326

Hours
Two-hour class period and three-hour lab period.

(3 cr.)

AENG 428 - Detail Design and Finishes in Buildings

Description

Prerequisites
CENG 423

Hours
Four hours studio period.

When Offered
Offered in fall and spring.

(3 cr.)

AENG 429 - Design Development and Construction Documents
Description

Prerequisites
AENG 428

Hours
Six-hour studio period.

When Offered
Offered in fall and spring.

(3 cr.)

AENG 441 - Professional Practice, Design Management and Codes

Description

Prerequisites
AENG 251 and CENG 441

Hours
One hour class period and 1.5 hours studio period.

When Offered
Offered in fall and spring.

(2 cr.)

AENG 453 - Architectural Design Studio III

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.

Prerequisites
AENG 326 and AENG 352.

Hours
Six-hour studio period.

When Offered
Offered in fall and spring.

(4 cr.)

AENG 454 - Architectural Design Studio IV

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.

**Prerequisites**
AENG 453 and CENG 306

**Hours**
Six-hour studio period.

**When Offered**
Offered in fall and spring.

(4 cr.)

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**AENG 455 - Architectural Design Studio V**

**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.

**Prerequisites**
AENG 426, AENG 454 and AENG 473

**Hours**
Six-hour studio period.

**When Offered**
Offered in fall and spring.

(4 cr.)

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**AENG 456 - Architectural Design Studio VI**

**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.

**Prerequisites**
AENG 455, AENG 468, ARIC 205 and EGPT 203

**Hours**
Six-hour studio period.

(4 cr.)

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**AENG 468 - Urban Design and Landscape Architecture**

**Description**

**Prerequisites**
AENG 368

**Hours**
One-hour class period and three-hour studio period.

**When Offered**
Offered in fall and spring.
(3 cr.)

**AENG 473 - Digital Design Studio and Workshop**

**Description**

**Prerequisites**
AENG 251

**Hours**
Three-hour studio period and three-hour lab period.

**When Offered**
Offered in fall and spring.
(3 cr.)

**AENG 480 - Special Problems in Architectural Engineering**

**Description**
Independent study in various problem areas of construction may be assigned to individual students or groups. Readings assigned and frequent consultations held.

**Prerequisites**
Prerequisite: consent of instructor and department chair on the basis of a well-defined proposal.

**When Offered**
Offered in fall and spring.

**Repeatable**
May be repeated for credit if content changes.
(1-3 cr.)

**AENG 490 - Senior Project I**

**Description**
A capstone project. Topics are selected by students from a set defined by advisors and according to their area of interest. Project analysis and research. Developing project brief through definition of the needs of society, users and clients. Preparation of space and functional programs. In depth studies of specific design aspects.

**Prerequisites**
AENG 455

**Hours**
Three-hour studio period.

**When Offered**
Offered in fall and spring.
(2 cr.)

**AENG 491 - Senior Project II**
Description
A continuation of senior project I. Comprehensive architectural design demonstrating an understanding of the different conceptual and technical aspects of architecture. In depth analysis and design study for specific aspects of the project.

Prerequisites
AENG 420, AENG 456, AENG 490

Hours
Eight-hour studio period.

When Offered
Offered in fall and spring.

(AE 494) - Selected Topics in Architectural Engineering

Description
Specialized topics in Architectural engineering will be selected and presented.

Prerequisites
Prerequisite: senior standing.

When Offered
Offered in fall and spring.

(AE 496) - Internship in Construction Projects

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 and evaluated.

Prerequisites
CENG 423

When Offered
Offered in fall.

(AE 497) - Internship in Technical Drawing and Design

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. A complete account of the experience is reported, presented and evaluated. Introduction to professional ethics, professional judgment and the social responsibilities of architects.

Prerequisites
AENG 429

When Offered
Offered in fall and spring.

(ALIN 101-102-103-104) - Elementary Modern Standard Arabic

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.

(3 cr. each)

**ALIN 105-106 - Elementary Listening**

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.

(2-3 cr. each)

**ALIN 111-112-113 - Elementary Colloquial Arabic**

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.

(3-4 cr. each)

**ALIN 121-122 - Elementary Writing**

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.
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.

(2-3 cr. each)

**ALIN 131-132 - Elementary Printed Media**

**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.

(2-3 cr. each)

**ALIN 133-134 - Elementary Aural Media**

**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.

**Prerequisites**
ALIN 131.

**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.

(2-3 cr. each)

**ALIN 171-172 - Readings in the Qur'an**

**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.

**Hours**
Each course meets three to 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.

(2-4 cr. each)

ALIN 191-192 - Supervised Studies

Description
Study of a selected topic according to the students' level and interests. 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.

Hours
Each course meets two to seven hours per week

When Offered
Offered in fall and spring.

Repeatable
May be repeated for credit when content changes

(1-4 cr. each)

ALIN 201-202-203-204 - Intermediate Modern Standard Arabic

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.

(3 cr. each)

ALIN 205-206 - Intermediate Grammar

Description
Examines the basic features of Arabic grammar with particular attention to the system of i'rab. Reference is also made to the Western system of grammatical terminology.

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.

(2-3 cr. each)
ALIN 207-208 - Intermediate Spoken Modern Standard Arabic (MSA)

**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.

(2-3 cr. each)

ALIN 209-210 - Intermediate Listening and Speaking

**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.

(2-3 cr. each)

ALIN 211-212 - Intermediate Colloquial Arabic

**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.

(3-4 cr. each)

ALIN 221-222 - Intermediate Writing

**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.

(2-3 cr. each)

**ALIN 223-224 - Intermediate Business Writing**

Description
Introduces the Arabic used in business and commerce, focusing on the technical terms and formulas common to these fields. Includes bills, invoices, checks, memos, orders, applications, recruitment and product advertisement, complaints, etc.

Hours
Each course meets three hours per week.

When Offered
Offered occasionally

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.

(2 cr. each)

**ALIN 225-226 - Intermediate Reading and Writing**

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.

(3 cr. each)

**ALIN 231-232 - Intermediate Printed Media**

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.

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.

(2-3 cr. each)

**ALIN 233-234 - Intermediate Aural Media**

**Description**
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 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.

(2-3 cr. each)

**ALIN 241-242 - Intermediate Translation**

**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.

(2-3 cr. each)

**ALIN 251 - Readings in the Modern Arabic Short Story**

**Description**
Introduces students to the genre through the reading of some representative works.

**Hours**
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.

(2-3 cr.)

**ALIN 252 - Readings in Modern Arabic Literature**

**Description**
Selections from a variety of prose writings.

**Hours**
Course meets three or five hours per week.

**When Offered**
Offered in 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.

(2-3 cr.)

**ALIN 271-272 - Readings in the Qur’an**

**Description**
Introduces a wide selection of verses, thoroughly addressing grammatical and syntactical issues. Trains students to recite with great precision.

**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.

(2-3 cr. each)

**ALIN 281-282 - Political Texts**

**Hours**
Each course meets three or five hours per week.

**When Offered**
Offered in fall and spring.

**Notes**
Acquaints students with the terminology and style of selected political texts. Covers elections, the party system, public policy, etc.

(2-3 cr. each)

**ALIN 283 - Readings in Economics**
Description
Acquaints students with the terminology and style of economic texts through the reading and discussion of selected articles on Egyptian and international economic issues.

Hours
Course meets three hours per week

When Offered
Offered in 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.

(2 cr. each)

**ALIN 284 - Introduction to Egyptian Culture - Intermediate**

Description
Develops language through further understanding of culture. Introduces different aspects of Egyptian culture, with emphasis on customs, traditions, family, the role of religion in society, women and social strata. Medium of instruction is combination of both intermediate Modern Standard and Egyptian Spoken Arabic. Uses authentic material whether recorded or written to encourage discussion.

Prerequisites
Prerequisite: Intermediate level in Arabic or consent of program director.

Hours
Class meets 3 or 5 hours per week.

When Offered
Offered in fall and spring.

(2-3 cr.)

**ALIN 291-292 - Supervised Studies**

Description
Study of a selected topic according to the students' level and interests. 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.

Hours
Each course meets two to seven hours per week

When Offered
Offered in fall and spring.

Repeatable
May be repeated for credit when content changes

(1-4 cr. each)

**ALIN 301-302 - Advanced Modern Standard Arabic**

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.

(3 cr. each)

ALIN 305-306 - Advanced Arabic Grammar

Description
Examines the complexities of Arabic grammar through textual analysis.

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.

(2-3 cr. each)

ALIN 307-308 - Advanced Spoken Modern Standard Arabic (MSA)

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.

(2-3 cr. each)

ALIN 309-310 - Advanced Listening and Speaking

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

Prerequisites
ALIN 209-210 or consent of instructor.

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.

(2-3 cr. each)

**ALIN 311-312 - Advanced Colloquial Arabic**

**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.

(3-4 cr. each)

**ALIN 321-322 - Advanced Writing**

**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.

(2-3 cr. each)

**ALIN 323-324 - Advanced Business Writing**

**Description**
Explores writing for sophisticated business and commercial situations. Includes agenda and minutes, tax declarations,
contracts, by-laws, etc.

**Prerequisites**
ALIN 224

**Hours**
Each course meets three hours per week.

**When Offered**
Offered occasionally

**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.
(2 cr. each)

**ALIN 325-326 - Advanced Reading and Writing**

**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.

**Prerequisites**
ALIN 225-226 or consent of instructor.

**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.

(3 cr. each)

**ALIN 331-332 - Advanced Printed Media**

**Description**
Introduces more complex and analytical articles and editorials from the Arabic press. Further develops students' ability to skim.

**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.

(2-3 cr. each)

**ALIN 333-334 - Advanced Aural Media**

**Description**
Trains students to take notes while listening to broadcasts. Expands their range of vocabulary and develops their ability to listen to lengthier passages.

**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.
(2-3 cr. each)

**ALIN 341-342 - Advanced Translation**

**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.

(2-3 cr. each)

**ALIN 351 - Readings in the Modern Arabic Short Story**

**Description**  
Covers the historical development of style and thought among modern short story writers. Acquaints students with the influence of social factors on the works discussed.

**Hours**  
Course meets three 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.

(3 cr.)

**ALIN 352 - Readings in Modern Arabic Literature**

**Description**  
Selections from a variety of prose writings: short stories, novels, plays, and poetry by writers from different Arab countries.

**Hours**  
Course meets three hours per week

**When Offered**  
Offered in 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.

(3 cr.)

**ALIN 353-354 - Readings in the Modern Arabic Novel**
Description
Introduces students to the genre through the reading of some representative novels or plays written by well known Arab writers.

Hours
Each course meets three hours per week.

When Offered
Offered occasionally.

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.

(3 cr. each)

**ALIN 361-362 - Modern Arabic Texts**

Description
Exposes students to a wide selection of modern non-fiction, increasing their range of vocabulary and acquainting them with the style of the essay.

Hours
Each course meets three hours per week.

When Offered
Offered occasionally.

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.

(3 cr. each)

**ALIN 365-366 - Classical and/or Medieval Texts**

Description
Introduces students to the vocabulary and style of classical and/or medieval Arabic. Each course meets three hours per week.

When Offered
Offered occasionally.

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.

(3 cr. each)

**ALIN 371-372 - Qur’anic Studies**

Description
Permits an in-depth reading and discussion of Qur’anic passages in addition to the tafsir of some verses. Addresses finer grammatical and syntactical issues as necessary, and refines students' reading and recitation.

Hours
Each course meets three hours per week.

When Offered
Offered occasionally.

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.

(3 cr. each)

**ALIN 381-382 - Political Texts**

Description
An issue-oriented course which explores the writings of modern political scientists.

Hours
Each course meets three 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.

(3 cr. each)

**ALIN 383 - Readings in Economics**

Description
Exposes students to a wider variety of texts. Focuses on discussion and analysis of the readings.

Hours
Course meets three hours per week.

When Offered
Offered in 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.

(3 cr. each)

**ALIN 384 - Introduction to Egyptian Culture - Advanced**

Description
Further develops language to meet the advanced level of Arabic language students through further understanding of culture. Introduces different aspects of Egyptian culture, emphasis on customs, traditions, family structure, the role of religion in society, women and social strata. Medium of instruction is combination of both advanced Modern Standard and Egyptian Spoken Arabic. Uses authentic material whether recorded or written to encourage discussion.

Prerequisites
Prerequisite: Advanced level in Arabic or consent of program director.

Hours
Class meets 3 or 5 hours per week.

When Offered
Offered in fall and spring.

(2-3 cr.)
ALIN 386-387 - Modern Egyptian History

Description
An introduction to Egyptian history, from Muhammad Ali, the founder of modern Egypt, until the present time.

Hours
Each course meets three hours per week.

When Offered
Offered occasionally.

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.

(3 cr. each)

ALIN 391-392 - Supervised Studies

Description
Study of a selected topic according to the students' level and interests. 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.

Hours
Each course meets two to seven hours per week

When Offered
Offered in fall and spring.

Repeatable
May be repeated for credit when content changes

(1-4 cr. each)

ALIS 101-102-103-104 - Elementary Modern Standard Arabic

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.

(2-3 cr. each)

ALIS 111-112-113 - Elementary Colloquial Arabic

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.

(2-4 cr. each)

ALIS 121-122 - Elementary Writing

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
ALIS 131-132 - Elementary Printed Media

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.

(1-3 cr. each)

ALIS 171-172 - Readings in the Qur’an

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.

(1 cr. each)

ALIS 191-192 - Supervised Studies

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.

(1-4 cr. each)

ALIS 201-202-203-204 - Intermediate Modern Standard Arabic

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.

(2-3 cr. each)

ALIS 211-212 - Intermediate Colloquial Arabic

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.

(2-4 cr. each)

ALIS 221-222 - Intermediate Writing

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. (1-3 cr.

ALIS 231-232 - Intermediate Printed Media

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. (1-3 cr.

ALIS 233-234 - Intermediate Aural Media

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. (1-3 cr.

ALIS 241-242 - Intermediate Translation

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. (1 cr.

ALIS 252 - Readings in Modern Arabic Literature

Description
Selections from a variety of prose writings. Course meets three hours per week. (1 cr.

ALIS 271-272 - Readings in the Qur’an

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. (1-3 cr.

ALIS 291-292 - Supervised Studies

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. (1-4 cr. each)
ALIS 301-302 - Advanced Modern Standard Arabic

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. (2-3 cr. each)

ALIS 311-312 - Advanced Colloquial Arabic

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. (2-3 cr. each)

ALIS 321-322 - Advanced Writing

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. (1-3 cr. each)

ALIS 331-332 - Advanced Printed Media

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. (1-3 cr. each)

ALIS 333-334 - Advanced Aural Media

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. (1-3 cr. each)

ALIS 341-342 - Advanced Translation

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. (1 cr. each)

ALIS 352 - Readings in Modern Arabic Literature

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. (1 cr.)
ALIS 391-392 - Supervised Studies

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.
(1-4 cr. each)

ALNG 101-102-103 - Elementary Arabic

Description
Develops the fundamentals of modern standard Arabic through reading, writing, and oral drill 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, winter, spring and summer.

Notes
Noncredit for Thanawiyya Amma holders.

(3 cr. each per semester)

ALNG 109-110 - Introduction to Colloquial Arabic

Description
Study, by means of phonetic transcription, or the Arabic alphabet, of the basic inflectional and syntactical patterns of Egyptian colloquial Arabic. Two-semester sequence. Each course meets five hours per week. Registration requires permission of the ALNG Director.

When Offered
Offered in fall, winter, spring and summer.

Notes
Noncredit for students from Arab countries and Thanawiyya Amma holders.

(3 cr. each per semester)

ALNG 111-112 - Accelerated Elementary Modern Standard Arabic

Description
ALNG 111 covers material of ALNG 101 and ALNG 102, while ALNG 112 covers the materials of ALNG 103 and ALNG 201. Two-semester sequence. Each 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.

(6 cr. each per semester)

ALNG 199 - Selected Topics
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, spring, summer and winter.

Notes
May be repeated for credit if content changes.
Noncredit for Thanawiyya Amma holders.

(3 cr. per semester)

ALNG 201-202-203 - Intermediate Arabic

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.

Prerequisites
ALNG 103 or placement examination.

When Offered
Offered in fall, spring, summer and winter.

Notes
Noncredit for Thanawiyya Amma holders

(3 cr. each per semester)

ALNG 204-205 - Intermediate Modern Standard Arabic

Description
Increase 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. Two-semester sequence. Each course meets five hours per week. Registration requires permission of the ALNG Director.

Prerequisites
ALNG 203 or placement examination.

When Offered
Offered in fall, winter, spring and summer.

Notes
Noncredit for Thanawiyya Amma holders.

(3 cr. each per semester)

ALNG 206 - Arabic of the News Media

Description
Introduction to the vocabulary and style of the Arabic press. Readings from the daily newspapers and magazines and the other sources. The course meets three hours per week. Registration requires permission of the ALNG Director.

Prerequisites
ALNG 201.

When Offered
Offered in fall and spring.

Notes
Noncredit for Thanawiyya Amma holders

(3 cr. per semester)

**ALNG 210 - Intermediate Egyptian Colloquial Arabic**

**Description**
Concentrates on developing the students' listening and speaking skills in daily life situations through activities and situations and presentations as well as introducing the cultural connotations. The course meets five hours per week. Registration requires permission of the ALNG Director.

**Prerequisites**
ALNG 110, ALNG 109-110

**When Offered**
Offered in fall, winter, spring and summer.

**Notes**
Noncredit for students from the Arab countries and Thanawiyya Amma holders.

(3 cr. per semester)

**ALNG 211-212 - Accelerated Intermediate Modern Standard Arabic**

**Description**
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. ALNG 211 covers material of ALNG 202 and ALNG 203, while ALNG 212 covers the materials of ALNG 204 and ALNG 205. Two-semester sequence. Registration requires permission of the ALNG Director. Each course meets ten hours per week.

**Prerequisites**
ALNG 201 or placement examination.

**When Offered**
Offered in fall and spring.

**Notes**
Noncredit for Thanawiyya Amma holders.

(6 cr. each per semester)

**ALNG 299 - Selected Topics**

**Description**
Study of selected topics for intermediate students. The course meets five hours per week. Registration requires permission of the ALNG Director.

**Hours**
The course meets 5 hours per week.

**When Offered**
Offered in fall, winter, spring and summer.

**Notes**
May be repeated for credit if content changes. Noncredit for Thanawiyya Amma holders.

(3 cr. per semester)
ALNG 301-302 - Advanced Modern Standard Arabic I

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.

Prerequisites
ALNG 205.

When Offered
Offered in fall and spring.

Notes
Noncredit for Thanawiyya Amma holders.

(3 cr. each per semester)

ALNG 303-304 - Advanced Modern Standard Arabic II

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.

Prerequisites
ALNG 302 or ALNG 311.

When Offered
Offered in fall and spring.

Notes
Noncredit for Thanawiyya Amma holders.

(3 cr. each per semester)

ALNG 305 - Independent Study

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.

Prerequisites
Any 200 level Arabic language course.

When Offered
Offered upon request.

Notes
Non-credit for Thanawiyya Amma holders.

(3 cr. per semester)

ALNG 306 - Advanced Arabic of the News Media

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.

**Prerequisites**
ALNG 206

**When Offered**
Offered in fall and spring.

**Notes**
Non-credit for Thanawiyya Amma holders.

(3 cr. per semester)

**ALNG 311-312 - Accelerated Advanced Modern Standard Arabic**

**Description**
The courses aim at preparing advanced, non-native speaking students for upper-division or graduate-level work in the Arabic language. ALNG 311 covers material of ALNG 301 and ALNG 302, while ALNG 312 covers the materials of ALNG 303 and ALNG 304. Two-semester sequence. Each course meets ten hours per week. Registration requires permission of the ALNG Director.

**When Offered**
Offered in fall and spring.

**Notes**
Non-credit for Thanawiyya Amma holders.

(6 cr. each per semester)

**ALNG 399 - Selected Topics**

**Description**
Study of selected topics for advanced students. The course meets five hours per week. Registration requires the permission of ALNG Director.

**When Offered**
Offered in fall, winter, spring and summer.

**Notes**
May be repeated for credit if content changes. Noncredit for Thanawiyya Amma holders.

(3 cr. per semester)

**ALNG 413-414 - Arabic Syntax (Nahw)**

**Description**
Examination of the basic features of Arabic syntax (nahw) with particular reference to the treatment of the subject by Arab grammarians. Reference is also made to the system of terminology adopted for the study of Arabic syntax by Western scholars. The language of instruction is Arabic.

**When Offered**
413 Offered in fall, 414 Offered in spring.

(3 cr. per semester)

**ALNG 415 - Arabic Morphology (Sarf) and Prosody (‘Arud)**

**Description**
Examination of the basic features of Arabic morphology (sarf) and prosody (‘arud) with particular reference to the treatment of the subjects by Arab grammarians. Reference is also made to the system of terminology adopted for the subject by Western scholars.
When Offered
Offered occasionally.

Notes
The language of instruction is Arabic.

(ALNG 425 - Linguistics of Arabic)

Description
Development of the linguistic structure of Arabic and the Arabic of the early Islamic era as described by the early Arab philologists.

When Offered
Offered in alternate years.

(ALNG 426 - The Phonetics of Arabic)

Description
Phonetics of classical Arabic as it is spoken in Egypt; reference to the phonetics of both Egyptian colloquial Arabic and the Arabic of the early Islamic era as described by the early Arab phoneticians.

When Offered
Offered in fall.

(ALWT 221 - From Reading to Writing: Intermediate Level:)

Description
Students scoring less than 70 in the Arabic Writing Placement exam can take this course. 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.

When Offered
Offered in the fall and spring.

(ALWT 321 - From Reading to Writing: High Intermediate Level:)

Description
Students scoring from 70-84 in the Arabic Writing Placement exam can take this course. 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.

When Offered
Offered in the fall and spring.

Notes
The level of material taught is higher than those taught in ALWT 221 but following the same guidelines.

(ALWT 420 - From Reading to Writing: Advanced Level:)

(5 cr.)
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.

Prerequisites
Prerequisite: Score 85 or more in the Arabic Writing Placement Exam or have taken either 221 or 321.

When Offered
Offered in the fall and spring.
3 credits

ALWT 421 - Professional Media Writing:

Description
The course bridges the communication gap between language course work and information transfer needs of media. The course trains the student to write major forms of media writing, including correspondence, memoranda, reports and the like.

Prerequisites
Prerequisite: Score 85 or more in the Arabic Writing Placement Exam or have taken either 221 or 321.

When Offered
Offered in the fall.
3 credits

ALWT 422 - Professional Business Writing:

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.

Prerequisites
Prerequisite: Score 85 or more in the Arabic Writing Placement Exam or have taken either 221 or 321.

When Offered
Offered in the fall and spring.
3 credits

ALWT 423 - Professional Diplomatic Writing:

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.

Prerequisites
Prerequisite: Score 85 or more in the Arabic Writing Placement Exam or have taken either 221 or 321.

When Offered
Offered in the fall and spring.
3 credits

ALWT 462 - Professional Translation in Business:

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.
Prerequisites
ALWT 420 or consent of instructor.

When Offered
Offered in the fall and spring.
3 credits

**ALWT 463 - Diplomatic Professional Translation:**

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.

Prerequisites
ALWT 420 or consent of instructor.

When Offered
Offered in the fall and spring.
3 credits

**ALWT 521 - Professional T.V. Script Writing:**

Description
This course is a continuation of ALWT421. This course train students to write T.V. scripts. It makes them practice interviewing and commenting in Modern Standard Arabic helps them to acquire further knowledge of the various TV language characteristics; go deeper into the issue of culture-bound language in relation to the level of language, and develop a command of a number of techniques for Arabic TV reporting.

Prerequisites
ALWT 421 or consent of instructor.

When Offered
Offered in the spring.
3 credits

**AMST 199 - Selected Topics for Core Curriculum**

Description
Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

(3 cr.)

**AMST 299 - Selected Topics for Core Curriculum**

Description
Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

Prerequisites
RHET 101

(3 cr.)

**AMST 301 - The US Role in Shaping the World Financial and Trading Systems**

Description
The course will look at the role of the U.S. in shaping the world monetary, financial and trading systems. And, in addressing their evolution, the course will focus on how the U.S. power has evolved within notably the post second world war period. The course is also about understanding the functioning of the Bretton Woods institutions and WTO
in the world economic system and the position of developing countries therein.

(3 cr.)

**AMST 310 - American Literature to 1900**

**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**
Cross-listed with ECLT 310.

(3 cr.)

**AMST 311 - Modern American Literature**

**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**
Cross-listed with ECLT 311.

(3 cr.)

**ANTH 199 - Selected Topic for Core Curriculum**

**Description**
Course addressing broad intellectual concerns and accessible to all first-year students as part of the Primary Level Core.

(3 cr.)

**ANTH 202 - Cultural Anthropology**

**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.

(3 cr.)

**ANTH 210 - Arab Society**

**Prerequisites**
RHET 201 or concurrent.

**Cross-listed**
Same as SOC 210.

**When Offered**
Offered in fall and spring.

**Repeatable**
Description and analysis of social and cultural characteristics and problems of contemporary Arab Society, taking into consideration the specific historical, economic, and ideological forces that shape it. The social basis for Arab unity and identity. Introduction to basic concepts and principles for understanding social phenomena.
(3 cr.)

**ANTH 240 - Introduction to Community Development**

**Description**
Introduces 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/SOC 240.

**When Offered**
Offered in fall.
(3 cr.)

**ANTH 299 - Selected Topic for Core Curriculum**

**Description**
Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

**When Offered**
Offered occasionally.
(3 cr.)

**ANTH 302 - Kin and Family in a Global World**

**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 legitimate 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.

**Prerequisites**
Three hours of Social Sciences.

**When Offered**
Offered in alternate years.
(3 cr.)

**ANTH 303 - Social Movements**

**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.

**Prerequisites**
Three hours of Social Sciences.

**Cross-listed**
Same as SOC 303.

**When Offered**
ANTH 309 - History of Social Theory

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.

Prerequisites
Prerequisites: 9 hours of social sciences and junior or senior standing, or consent of instructor.

Cross-listed
Same as SOC 309

When Offered
Offered in fall.
(3 cr.)

ANTH 310 - Contemporary Sociological Theory

Description
The main trends, basic problems, and unresolved issues of post-war sociological thought. Essential aspects of the logic of scientific inquiry; contemporary theories as model building in sociology including new functionalism, critical theory, structuralism and poststructuralism.

Prerequisites
ANTH 309 or consent of instructor.

Cross-listed
Same as SOC 310.

When Offered
Offered in spring.
(3 cr.)

ANTH 311 - Contemporary Anthropological Theory

Description
Introduces major theories and theorists in the recent history of anthropology and provides a broad vision of the development of the discipline and of contemporary anthropological thought. The course also covers the development of the ethnographic method, important paradigms such as structural-functionalism, and recent critical theory.

Prerequisites
ANTH 309 or consent of instructor.

When Offered
Offered in spring
(3 cr.)

ANTH 312 - Peoples and Cultures of the Middle East and North Africa

Description
Basic structure of contemporary societies and cultures of the Middle East and North Africa, with special emphasis on the Arab population. Problems of ecology, economics, social organization, law and politics, religion and patterns of social change.

Prerequisites
3 hours of Social Sciences.

When Offered
ANTH 320 - States, Capital and Rural Lives

Description
Analysis of dynamics of expanding state and capital relations into rural and pastoral communities, with special focus on property and labor relations, the social organization of production and exchange, politics and power relations, and the organization and practice of everyday life. The course draws on comparative ethnographic case studies from around the world.

Prerequisites
Three hours of Social Sciences.

When Offered
Offered in alternate years.

ANTH 321 - The Urban Experience

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 past? 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?

Prerequisites
Three hours of Social Sciences.

Cross-listed
Same as SOC 321.

When Offered
Offered in spring.

ANTH 332 - Social Constructions of Difference: Race, Ethnicity, and Class

Description
The course will first introduce students to the vast theoretical literature on the concepts of race, ethnicity and class 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, ethnic and class identities are shaped by diverse hegemonic systems, modes of resistance, and the structuring of social relations in different societies.

Prerequisites
Three hours of Social Sciences.

Cross-listed
Same as SOC 332.

When Offered
Offered occasionally.

ANTH 340 - Participatory Action Research in Community Settings
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.

Prerequisites
ANTH 240 or consent of the instructor.

Cross-listed
Same as PSYC/SOC 340.

When Offered
Offered in spring.

(3 cr.)

**ANTH 341 - Anthropology and Film**

Description
The history and practice of film in anthropology; film as ethnography; comparison of films and analytical ethnographies. Additional Mandatory Lab Sessions for Film Screening.

Prerequisites
Three hours of Social Sciences.

Cross-listed
Same as FILM 341.

When Offered
Offered occasionally.

(3 cr.)

**ANTH 352 - Language in Culture**

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.

Prerequisites
Three hours of Social Sciences.

Cross-listed
Same as LING 352.

When Offered
Offered occasionally.

(3 cr.)

**ANTH 360 - Gender, Power and Social Change**

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.

Prerequisites
Three hours of Social Sciences.

When Offered
Offered in alternate years.

(3 cr.)
ANTH 370 - Environmental Issues in Egypt

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.

Prerequisites
Three hours of Social Sciences.

Cross-listed
Same as SOC 370.

When Offered
Offered in alternate years.
(3 cr.)

ANTH 372 - Applied Anthropology

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.

Prerequisites
Three hours of Social Sciences.

When Offered
Offered in alternate years.
(3 cr.)

ANTH 380 - Fieldwork Methods

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.

Prerequisites
ANTH 202 and 6 credit hours of social sciences.

When Offered
Offered in fall and spring.
(3 cr.)

ANTH 382 - Peoples and Cultures of Sub-Saharan Africa

Description
Basic structure of contemporary societies and cultures of sub-Saharan Africa with special emphasis on problems of ecology, economics, social organization, law and politics, religion, and patterns of social change.

Prerequisites
Three hours of Social Sciences.

When Offered
Offered in alternate years.
(3 cr.)

ANTH 384 - Peoples and Cultures of Latin America
Description
Basic structure of contemporary societies and cultures of Latin America with special emphasis on problems of ecology, economics, social organization, law and politics, religion, and patterns of social change.

Prerequisites
Three hours of Social Sciences.

When Offered
Offered in alternate years.

(3 cr.)

ANTH 386 - Peoples and Cultures of Asia

Description
Basic structure of contemporary societies and cultures of South, South-East, and East Asia with special emphasis on problems of ecology, economics, social organization, law and politics, religion and patterns of social change.

Prerequisites
Three hours of Social Sciences.

When Offered
Offered in alternate years.

(3 cr.)

ANTH 390 - Selected People and Culture Areas

Description
Areas to be chosen according to specific interest and faculty expertise. Examples of possible areas are: peoples and cultures of the ancient world, of the Mediterranean, and of the United States.

Prerequisites
Three hours of Social Sciences.

When Offered
Offered occasionally.

Repeatable
May be taken for credit more than once if content changes.

(3 cr.)

ANTH 400 - Selected Topics in Anthropology

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.

Prerequisites
Prerequisites: 9 hours of social sciences, and junior or senior standing.

When Offered
Offered occasionally

Repeatable
May be taken for credit more than once if content changes.

(3 cr.)

ANTH 402 - Independent Study

Description
In exceptional circumstances some senior majors with departmental approval may arrange to study beyond the regular course offerings.
Prerequisites
Prerequisites: a minimum B average, consent of the instructor, and approval by the unit head and the department chair.

When Offered
Offered in fall and spring.

Repeatable
May be repeated for credit more than once if content changes.
(1-3 cr.)

ANTH 407 - Psychological Anthropology

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.

Prerequisites
Three hours of Anthropology, 6 hours of Social Sciences, and junior or senior standing.

Cross-listed
Same as PSYC 407.

When Offered
Offered occasionally.
(3 cr.)

ANTH 422 - Religion in a Global World

Description
Comparative study of religion in culture and society. The course will explore a variety of theories and controversies in the anthropological understanding of religion. Emphasis is on how religion may restrict but also empower believers, inform their social identities, and intersect with political and economic practices and institutions in a globalizing world.

Prerequisites
Prerequisites: 9 hours of social sciences and junior or senior standing.

Cross-listed
Same as SOC 422 and EGPT 546.

When Offered
Offered in fall.
(3cr.)

ANTH 425 - Women, Islam and the State

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.

Prerequisites
9 hours of Social Sciences and Junior or Senior standing.

When Offered
Offered annually.
(3 cr.)

ANTH 440-441 - Practicum in Community Development

Description
Two semester, nine month field experience in an approved international development agency, local NGO or other
professional setting approved by faculty supervisor. Supervised by a professional and faculty supervisor.

**Prerequisites**
ANTH 240 ANTH 340

**Cross-listed**
Same as SOC/PSYC 440-441.

**When Offered**
Offered in fall (440) and spring (441).

(6 cr.)

**ANTH 445 - Selected Topics in Coptic Studies**

**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.

**Cross-listed**
Same as ARIC, EGPT, HIST, SOC 445.

**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.

(3 cr.)

**ANTH 450 - Third World Development**

**Description**
Contemporary theories of development as they apply to and illuminate the problems of development in underdeveloped countries. The approach will be interdisciplinary.

**Prerequisites**
Prerequisites: 9 hours of social sciences and junior or senior standing.

**Cross-listed**
Same as SOC 450.

**When Offered**
Offered in fall and spring.

(3 cr.)

**ANTH 455 - Seminar in African Studies**

**Description**
Through the examination of a contemporary topic in African Studies, this interdisciplinary seminar examines epistemological and methodological issues in African Studies such as transformation, resistance, power, technology, and women and development. Original sources will be used to examine the theoretical assumptions, data and methods underlying the literature. Prior course work in African Studies is recommended.

**Prerequisites**
9 hours of Social Sciences and Junior or Senior standing.

**Cross-listed**
Same as SOC 455.
ANTH 460 - Development Studies Seminar

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.

Prerequisites
Prerequisites: 12 hours of social science.

Cross-listed
Same as ECON/POLS/SOC 460.

When Offered
Offered occasionally.

(3 cr.)

ANTH 462 - Economic Anthropology

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.

Prerequisites
Prerequisites: 9 hours of social sciences and junior or senior standing.

When Offered
Offered in alternate years.

(3 cr.)

ANTH 492 - Political Anthropology

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.

Prerequisites
9 hours of Social Sciences and Junior or Senior standing.

When Offered
Offered in alternate years.

(3 cr.)

ANTH 495 - Senior Seminar

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.

Prerequisites
Senior standing and SOC 381 or ANTH 380 or 12 hours of Social Sciences.

Cross-listed
Same as SOC 495.

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.

(3 cr.)

ARIC 100 - Arabs and Muslims Encountering the Other

Description
Surveys Arab-Islamic history from the perspective of the development of the socio-cultural self and its encounters with the Other. Pays special attention to inter-cultural and inter-confessional relations and to how these informed the development of Arab-Islamic identities from the birth of Islam to the colonial period. Major themes include travel and intercultural encounter, polemic, conversion, the treatment of religious minorities, and the colonial subject's view of the West.

(3 cr.)

ARIC 101 - Children's Literature and Cultural Representations

Description
This course introduces students in simplified form and content to contemporary literary and cultural theories pertinent to reading and analyzing children's literature. Topics for discussion will include historical constructions of childhood and the socio-historical contexts for the production of children's literary canon(s). Through readings to familiar classics we will explore how representations in texts for children (both written and visual) have shaped the different ideologies of identity, race, gender, and nation.

(3 cr.)

ARIC 199 - Selected Topic for Core Curriculum

Description
Selected topic in Arab Islamic history for the core curriculum.

(3cr.)

ARIC 201 - Introduction to Classical Arabic Literature

Description
An introduction to the classical Arabic literary tradition through readings of major texts. Prerequisites: Thanawiya 'Amma or placement examination.

When Offered
Offered in fall and spring.

Notes
Taught in Arabic.

(3 cr.)
**ARIC 202 - Introduction to Modern Arabic Literature**

**Description**
An introduction to the literature of the nineteenth and twentieth centuries through readings of major texts.

**Prerequisites:** Thanawiya ‘Amma or placement examination.

**When Offered**
Offered in fall and spring

**Notes**
Taught in Arabic.

(3 cr.)

**ARIC 203 - Classical Arabic Literature in Translation**

**Description**
An introduction to the classical Arabic literary tradition through readings of major texts.

**When Offered**
Offered in fall and spring.

**Notes**
Taught in English, with assigned texts in English translation.

(3 cr.)

**ARIC 204 - Modern Arabic Literature in Translation**

**Description**
An introduction to the literature of the nineteenth and twentieth centuries through readings of major texts.

**When Offered**
Offered in fall and spring.

**Notes**
Taught in English, with assigned texts in English translation.

(3 cr.)

**ARIC 205 - Islamic Architecture, from the Beginnings to the Present Day**

**Description**
An overview of Islamic architecture from Spain to India from the 7th century to the present. Major examples of religious and secular architecture, including mosques, madrasas, palaces and caravanserais.

(3 cr.)

**ARIC 206 - Art and Architecture of the City of Cairo**

**Description**
The artistic heritage of Fustat - Cairo from 641 A.D. to the present, with emphasis on its urban and architectural development.

**When Offered**
Offered in the fall and spring.

**Notes**
Classwork is supplemented by six to eight field trips on Saturday mornings.
(3 cr.)

**ARIC 246 - Survey of Arab History**

**Description**
This course presents the history of the Arab-speaking Middle East from pre-Islamic times to the modern era, with emphasis on some of the principal political, economic, social, religious, and cultural developments and their relevance to the contemporary Middle East. The course introduces students to historiographical 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 required-core.

**Cross-listed**
Same as HIST 246.

**When Offered**
Offered in fall and spring.
(3 cr.)

**ARIC 270-271 - Introduction to Islamic Art and Architecture**

**Description**
Important works in architecture and decorative arts from the seventh century AD to the Ottoman period; artistic achievements of Muslim Spain, North Africa, Syria, Mesopotamia, Iran, and Turkey. ARIC 270 up to 1200 AD onwards.

**Prerequisites**
Prerequisite for ARIC 271: ARIC 270, or ARIC 206.

**When Offered**
Both parts offered each semester.
(3 cr. per semester)

**ARIC 299 - Selected Topic for Core Curriculum**

**Description**
Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

**Prerequisites**
RHET 101

**When Offered**
Offered occasionally.
(3 cr.)

**ARIC 305 - Arabic Literature and Gender**

**Description**
Investigates the construction of gender, both masculine and feminine, through readings in a variety of Arabic discourses.

**When Offered**
Offered in fall.

**Notes**
Taught in Arabic.

(3 cr.)
ARIC 306 - Arabic Literature and Film

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.

Notes
Taught in Arabic.

(3 cr.)

ARIC 307 - The Writer and the State

Description
Explores the nature of the relationship between writers and authority, in allegiance or in opposition.

When Offered
Offered in spring.

Notes
Taught in Arabic.

(3 cr.)

ARIC 308 - Colloquial and Folk Literature

Description
Arabic colloquial and folk literature through the study of various genres.

When Offered
Offered in spring.

Notes
Taught in Arabic.

(3 cr.)

ARIC 309 - Selected Themes and Topics in Arabic Literature

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.

(3 cr.)

ARIC 310 - Selected Themes and Topics in Arabic Literature in Translation
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 and spring.

Repeatable
May be repeated once for credit if content changes

Notes
Taught in English, with assigned texts in English translation.

(3 cr.)

**ARIC 314 - The Arabic Novel**

Description
Study of different trends in the Arabic novel. In-depth reading of major modern Arab novelists.

When Offered
Offered in alternate years.

Notes
Taught in Arabic.

(3 cr.)

**ARIC 315 - Arabic Drama**

Description
Study of Arabic drama through readings of major texts.

When Offered
Offered in alternate years.

Notes
Taught in Arabic.

(3 cr.)

**ARIC 316 - The Arabic Short Story**

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 alternate years.

Notes
Taught in Arabic.

(3 cr.)

**ARIC 319 - Islamic Spain and North Africa (711-1492 A.D.)**

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 319.
(3 cr.)

ARIC 320 - Introduction to Sufism

Description
An introduction to mysticism in its Islamic context: a survey of the historical development of tasawwuf, the main trends in Sufi thought and practice, the role played by Sufis and Sufi brotherhoods in society and the Sufi contributions to Middle Eastern culture.

When Offered
Offered in alternate years.
(3 cr.)

ARIC 321 - Social and Cultural History of the Middle East, 600-1800 A.D.

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.

When Offered
Offered in alternate years.
(3 cr.)

ARIC 322 - Land, Trade and Power: a History of Economic Relations in the Middle East, 600-1800 A.D.

Description
Examination of the major economic structures in the Middle East prior to the modern period: the consideration of land as a major resource, structures for its management and the competition to control it. The organization of trade and commerce, including the role of merchant communities and their place in society.

When Offered
Offered in alternate years.
(3 cr.)

ARIC 323 - Marriage and the Family in the Medieval and Early Modern Middle East

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.
(3 cr.)

ARIC 324 - Non-Muslim Communities in the Muslim World
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
(3 cr.)

ARIC 325 - On The Fringes of Society: Marginals in History

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.
(3 cr.)

ARIC 335 - An Introduction to Islam

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.
(3 cr.)

ARIC 336 - Studies in Ibn Khaldun

Description
Examination of Ibn Khaldun's work, his place in Arab Muslim thought, and his value as a critic of Muslim culture and institutions.

When Offered
Offered in alternate years.
(3 cr.)

ARIC 337 - Shi’i Muslims in History

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.

(3 cr.)

ARIC 343 - Birth of Muslim Community and Rise of the Arab Caliphates
Description
The rise of Islam and Arab expansion, the classical period of Islamic civilization during its first centuries to the period of Abbasid political disintegration.

Cross-listed
Same as HIST 343.

When Offered
Offered in fall.
(3 cr.)

ARIC 344 - Caliphs and Sultans in the Age of Crusades and Mongols

Description
The later Abbasid caliphate, the rise of Shi'ism and the Fatimids, Sunni consolidation under the Seljuks and Ayyubids, external threats to dar al-Islam; the rise of the Mamluks.

Cross-listed
Same as HIST 344.

When Offered
Offered in alternate years.
(3 cr.)

ARIC 345 - Gunpowder Empires: Ottomans, Safavids and Mughols

Description
The decline of the Mamluks; the Timurids in Persia; the age of gunpowder: the Safavid, Ottoman, and Moghul empires and their decline.

Cross-listed
Same as HIST 345.

When Offered
Offered in fall.
(3 cr.)

ARIC 353 - Muslim Political Thought

Description
The development of political theory in Muslim civilization. Analysis of leading schools and individuals.

Prerequisites
ARIC 246 or consent of instructor.

When Offered
Offered in Fall and Spring.

Notes
Source readings in Arabic or in translation.

(3 cr.)

ARIC 354 - Islamic Philosophy

Description
A survey of the rational and spiritual dimension of the Arab-Islamic civilization as shown in the thought and ideas of major theologians, philosophers, and mystics.

Prerequisites
ARIC 246 or ARIC 343 or consent of instructor.

Cross-listed
Same as PHIL 354.

**When Offered**
Offered occasionally.
(3cr.)

**ARIC 355 - State and Society in the Middle East, 1699-1914**

**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.

**Cross-listed**
Same as HIST 355.

**When Offered**
Offered once a year.
(3 cr.)

**ARIC 356 - State and Society in the Middle East, 1906-present**

**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.

**Cross-listed**
Same as HIST 356.

**When Offered**
Offered in fall and spring.
(3 cr.)

**ARIC 357 - Selected topic in Middle East History**

**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 357.

**When Offered**
Offered occasionally.
(3 cr.)

**ARIC 368 - The Art of the Book in the Islamic World**

**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.

**Prerequisites**
ARIC 270 or 271.

**When Offered**
Offered in alternate years
(3 cr.)
ARIC 369 - Islamic Pottery

Description
Techniques, styles and dating of Islamic Pottery. Emphasis on traditional stylistic motifs and external influences across the Islamic world from the 6th to the 18th centuries. Work with the AUC shared collection and visits to local museums will enhance the student's appreciation of the subject.

Prerequisites
ARIC 270 or 271.

When Offered
Offered in alternate years.

(3 cr.)

ARIC 370 - Pre-Islamic Influences on Islamic Art and Architecture

Description
Near Eastern art forms during 200-634 AD. Byzantium, the Mediterranean, Arabia, Syria, and the Copts, Persia and Central Asia, their legacy.

Prerequisites
ARIC 271.

When Offered
Offered in alternate years.

(3 cr.)

ARIC 371-372 - Islamic Architecture in Egypt and Syria

Description
Development of architecture and decorative styles in Egypt and Syria from the Arab to the Ottoman conquests, including, in the second semester, the Mamluk period; field trips to Cairo monuments.

Prerequisites
ARIC 271.

When Offered
371 offered in fall, 372 offered in spring.

(3 cr. per semester)

ARIC 400 - Independent Study

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 majors with a minimum of B average.

(1-3 cr.)

ARIC 401 - Senior Seminar in Arabic Texts

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.

Repeatable
May be repeated once for credit if content changes

Notes
Taught in Arabic

(3 cr.)

ARIC 402 - Senior Seminar in Arabic Literature in Translation

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 spring.

Repeatable
May be repeated once for credit if content changes

Notes
Taught in English, with assigned texts in English translation.

(3 cr.)

ARIC 403 - Arabic Literary Criticism

Description
Arabic critical theory from the classical to the modern period.

When Offered
Offered in alternate years.

Notes
Taught in Arabic.

(3 cr.)

ARIC 404 - Sira, Hadith, and Tafsir

Description
The growth of the biographical literature on the Prophet and its relation to the literature of Hadith and Qur'anic exegesis.

When Offered
Offered in fall.

Notes
Taught in Arabic unless otherwise stated.

(3 cr.)

ARIC 417 - Special Studies in Arabic Texts

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 fulfill the requirements of their specialization.

Repeatable
May be repeated once for credit if content changes.
(3 cr.)

**ARIC 435 - Studies in the Qur’an**

**Description**
The greatest work in Arabic and its influence on Arabic literature and Islamic institutions, with emphasis on methods of interpretation and their development.

**Prerequisites**
Prerequisite: consent of instructor.

**When Offered**
Offered in fall.

(3 cr.)

**ARIC 439 - Islamic Law**

**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.

**Prerequisites**
Prerequisite: consent of instructor.

**When Offered**
Offered in fall and spring.

(3 cr.)

**ARIC 440 - Arabic Historical Literature**

**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.

(3 cr.)

**ARIC 445 - Selected Topics in Coptic Studies**

**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.

**Cross-listed**
Same as ANTH, EGPT, HIST, SOC 445.

**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.
ARIC 451 - Islamic Institutions

Description
Examination of the principal social, legal, and political institutions in medieval Islam, especially those subsumed under shari'a.

Prerequisites
ARIC 343 or ARIC 246 or consent of instructor.

When Offered
Offered in fall.

ARIC 454 - Modern Movements in Islam

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.

Prerequisites
HIST 355 or HIST 356 or equivalent background

Cross-listed
Same as HIST 454.

When Offered
Offered once a year.

ARIC 460 - Selected Topics in Middle Eastern History, 600-1800 AD

Prerequisites
Prerequisite: appropriate course(s) from ARIC 343-345 series or consent of instructor

Cross-listed
Same as HIST 460.

When Offered
Offered in fall and spring.

Repeatable
May be repeated for credit when content changes

ARIC 462 - Selected Topics in the History of the Modern Middle East

Prerequisites
ARIC 355 or ARIC 356, whichever is appropriate or consent of instructor.

Cross-listed
Same as HIST 462.

When Offered
Offered occasionally

Repeatable
May be repeated for credit when content changes

(3 cr.)
ARIC 463 - Selected Topics in the History of Islamic Thought and Institutions

Prerequisites
Prerequisite: consent of instructor.

Cross-listed
Same as HIST 463.

When Offered
Offered in spring.

Repeatable
May be repeated for credit when content changes.

(3cr.)

ARIC 464 - Islamic Art and Architecture in India and Pakistan

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.

Prerequisites
ARIC 465-466 or consent of instructor.

When Offered
Offered occasionally.

(3 cr.)

ARIC 465-466 - Islamic Architecture in Turkey, Persia and Central Asia

Description
First semester: Ghaznavids, Seljuks, and Mongols. Second semester: Timurids, Safavids, and Ottomans

Prerequisites
ARIC 270.

When Offered
Offered in alternate years.

(3 cr.)

ARIC 467 - Islamic Architecture in Spain and North Africa

Description
Religious and secular architecture and decoration of Islamic Spain and North Africa; discussion of formative impulses from Byzantium and Umayyad Syria.

Prerequisites
ARIC 270.

When Offered
Offered occasionally.

(3 cr.)

ARIC 477-478 - Islamic Decorative Arts

Description
Wood carving, ivory, metals, textiles, glass, and carpets of the Islamic world; ornamental elements in common; materials, objects and design.

Prerequisites
ARIC 271.

When Offered
Offered in alternate years.
(3 cr. per semester)

ARIC 504 - Seminar on a Selected Work or Author in Classical Arabic Literature

When Offered
Offered occasionally.
Repeatable
May be repeated for credit when content changes.
(3 cr.)

ARIC 507 - Seminar on Modern Arabic Literature: Nineteenth Century

Description
Aspects of Arabic literature in the nineteenth century.
When Offered
Offered in alternate years.
(3 cr.)

ARIC 508 - Seminar on Modern Arabic Literature: Twentieth Century

Description
Aspects of Arabic literature in the Twentieth century.
When Offered
Offered in alternate years.
(3 cr.)

ARIC 510-511 - Special Studies in Classical Arabic Literature

Description
Reading and papers on selected topics; attendance at a course of undergraduate lectures may be required.
Prerequisites
Prerequisite: consent of instructor.
When Offered
510 offered in fall, 511 offered in spring.
Repeatable
May be repeated for credit when content changes.
(3 cr.)

ARIC 512-513 - Special Studies in Modern Arabic Literature

Description
Reading and papers on selected topics; attendance at a course of undergraduate lectures may be required.
Prerequisites
Prerequisite: consent of instructor.
When Offered
512 offered in fall, 513 offered in spring.
Repeatable
May be repeated for credit when content changes.
(3 cr.)

**ARIC 514 - Bibliography and Manuscript Study**

**Description**
Techniques of working with Arabic manuscripts and scripts, editing, bibliographical study.

**When Offered**
Offered occasionally.
(3 cr.)

**ARIC 521-522 - Special Studies in Islamic Thought and Institutions**

**Description**
Special readings and papers by graduate students who are attending a course of undergraduate lectures.

**Prerequisites**
Prerequisite: consent of instructor.

**When Offered**
521 offered in fall, 522 offered in spring.

**Repeatable**
May be repeated for credit when content changes.
(3 cr.)

**ARIC 524 - Seminar on Selected Topics in Qur’anic Studies**

**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.

**Prerequisites**
ARIC 335 or consent of instructor.

**When Offered**
Offered annually.
(3 cr.)

**ARIC 525 - Seminar on Selected Topics in Sira or Hadith**

**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.

**Prerequisites**
ARIC 335 or consent of instructor.

**When Offered**
Offered annually.
(3 cr.)

**ARIC 526 - Seminar on Selected Topics in Islamic Law and Legal Theory**
Description
Selected topics in Islamic law; e.g. its history, methodologies, specific Islamic legal or political theories (including international relations, minorities, human rights), administration of criminal justice, court systems, reforms in the modern times, principles of jurisprudence (Usul al Fiqh), the concept of social interests, 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.

Prerequisites
ARIC 335 or consent of instructor.

When Offered
Offered annually.
(3 cr.)

ARIC 527 - Selected Topics in Islamic Theology, Sufism or Philosophy

Description
Selected topics focusing on one of the three important areas of Islamic thought (theology, Sufism or philosophy); e.g. 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, including new interpretations of theological questions. This course offers an examination of the principal 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.

Prerequisites
ARIC 335 or consent of instructor.

When Offered
Offered annually.
(3 cr.)

ARIC 528 - Selected Topics in Islamic Studies

Description
Selected Topics in Islamic Studies.

Prerequisites
Pre-requisite: Consent of instructor.

When Offered
Offered in spring.

Repeatable
May be repeated for credit when content changes.
(3 cr.)

ARIC 529 - World Religions and the Study of Religion

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.

Prerequisites
Prerequisite: Enrollment in Islamic Studies MA Program.

Cross-listed
Same as CREL 529.
(3 cr.)

ARIC 530 - Seminar on a Selected Topic in Medieval Arab/Islamic History, 600-1800 A.D.
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.

(3 cr.)

ARIC 542 - Seminar on the Nineteenth-Century Middle East

Description
Readings, discussion, and research.

Cross-listed
Same as HIST 542.

When Offered
Offered in fall.

(3 cr.)

ARIC 543 - Seminar on the Twentieth-Century Middle East

Description
Readings, discussion, and research.

Cross-listed
Same as HIST 543.

When Offered
Offered in spring.

(3 cr.)

ARIC 560 - 561 - Special Studies in Middle Eastern History

Description
Special readings for graduate students who are also attending a course of undergraduate lectures.

Prerequisites
Prerequisite: consent of instructor.

When Offered
560 offered in fall, 561 offered in spring.

Repeatable
May be repeated for credit when content changes.

(3 cr.)

ARIC 572 - Fieldwork in Islamic Architecture

Description
Archaeological methodology; examination of monuments and sites.

When Offered
Offered occasionally.

Repeatable
May be repeated for credit when content changes.

(3 cr.)
ARIC 573 - Seminar on the Architecture of a Selected Period

When Offered
Offered occasionally.

Repeatable
May be repeated for credit when content changes.
(3 cr.)

ARIC 575-576 - Special Studies in Islamic Art and Architecture

Description
Reading and papers on selected topics by graduate students who also attend a course of undergraduate lectures.

Prerequisites
Prerequisite: consent of instructor.

When Offered
575 offered in fall, 576 offered in spring.

Repeatable
May be repeated for credit when content changes.
(3 cr.)

ARIC 580 - Independent Study and Readings

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.

Prerequisites
Prerequisite: consent of unit.

When Offered
Offered occasionally.
(3 cr.)

ARIC 599 - Research Guidance and Thesis

When Offered
Offered in fall and spring.
(no cr.)

ARTV 199 - Selected Topic for Core Curriculum

Description
Course addressing broad intellectual concerns and accessible to all first-year students as part of the Primary Level Core.

When Offered
Offered occasionally.
(3 cr.)

ARTV 200 - Analogue and Digital Practices

Description
This course introduces students to the basic skills in various traditional and contemporary mediums: screen printing, digital photography, digital imaging, video and sound editing. The aim is to offer hands-on basic skills in analogue and digital practices including film, visual arts and graphic design.
Cross-listed
Same as DSGN 200 and FILM 200.

When Offered
Offered in fall and spring.

Notes
*Registration in this course is contingent upon consent of the director of the program

(3 cr.)

ARTV 201 - Introduction to Drawing

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.

Prerequisites
ARTV 200
(3 cr.)

ARTV 202 - Introduction to Painting

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.

Prerequisites
ARTV 201
(3 cr.)

ARTV 203 - Introduction to sculpture/Installation

Description
An introduction to the contemporary practices in Sculpture and installation. Offers a focused practice for students that addresses the origins and history of installation art/sculpture including site-specificity, the context of the gallery/museum, and alternate environments.

Prerequisites
ARTV 200
(3 cr.)

ARTV 204 - Introduction to Time-Based Media

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.

(3 cr.)
ARTV 205 - Introduction to Alternative Practices

Description
Introduces students to alternative practices in contemporary art with an emphasis on social art and activism. Helps students to build awareness of critical debates in contemporary art practice within the context of social media particularly. Classes include workshops on open source practices, Facebook, Skype, and Twitter.

(3 cr.)

ARTV 213 - Introduction to Visual Cultures

Description
Introduces students to the study of visual cultures in such arenas as film and video, photography, painting and sculpture, the built environment, advertising and fashion, and social media/internet. Students will learn how to analyze visual materials across media, interpret meanings, and gain experience in applying critical concepts to these understandings.

Cross-listed
Same as DSGN 213 and FILM 213.

(3 cr.)

ARTV 221 - Technical Drawing for Designers

Description
The focus of this course is to introduce students to the requisite skills of free-hand manual drawing for designers. The course is composed of three primary modules covering the conceptual, technical and media related aspects of free-hand drawing as part of the design process, from first conceptualization and diagramming to drawing from observation through final rendering and representation.

(3 cr.)

ARTV 222 - Architecture: Art or Engineering

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.

Cross-listed
Same as AENG 222.

When Offered
Offered in fall or spring.

(3 cr.)

ARTV 230 - Introduction to Digital Photography

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.

(3 cr.)
ARTV 250 - Fundamentals of 3-Dimensional Design

Description
Basic concept 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.

Cross-listed
Same as AENG 250.

Hours
Four-hour studio period.
(3 cr.)

ARTV 299 - Selected Topic for Core Curriculum

Description
Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

Prerequisites
RHET 101.

When Offered
Offered occasionally.
(3 cr.)

ARTV 311 - Art Studio I

Description
A cross-disciplinary introduction to the basics of visual, conceptual and theoretical language as they relate to multiple types of contemporary studio practices. Concepts/ideas are examined through diverse approaches of painting, drawing, sound, installation/sculpture, video, digital media and alternative practices. A combination of lectures, tutorials, critical reports, and studio practice.

Prerequisites
ARTV 201 or ARTV 202.
(3 cr.)

ARTV 312 - Art Studio II

Description
A practical examination of visual, conceptual and theoretical language, concepts and ideas. Continuation of Art Studio I.

Prerequisites
ARTV 311.
(3 cr.)

ARTV 314 - Modern and Contemporary Architecture

Description
An introduction to the historical development of twentieth-century architecture in the western tradition, including its social, technological, and conceptual aspects. Special emphasis is placed upon studying individual architects, buildings, and theoretical writings.
When Offered
Offered in fall and spring.
(3 cr.)

**ARTV 315 - Art Theory**

**Description**
An in-depth study of artistic practices after 1945, including new media art, performance, internet and installation art, among the more traditional forms of art production, such as painting, sculpture, and photography. The course will address the ways in which these media have transformed the production, reception, and interpretation of art. This course is structured around certain themes, and is theoretical in orientation.

**Prerequisites**
ARTV 213
(3 cr.)

**ARTV 316 - Coptic Art and Architecture**

**Description**
The course offers an interdisciplinary undergraduate course to students majoring in either arts 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 painting, decorative patterns, wood and stone carving.

(3 cr.)

**ARTV 370 - Selected Topics in Art**

**Description**
In-depth examination of specific topics in the studio arts or art history.

**Prerequisites**
Determined by instructor.

**When Offered**
Offered in fall and spring.

**Repeatable**
May be repeated for credit when content is different
(3 cr.)

**ARTV 402 - Independent Study**

**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.

**Prerequisites**
ARTV 311 or ARTV 312.

**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 410 - Contemporary issues in Arab Art

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.

(3 cr.)

ARTV 411 - Studio III

Description
Advanced art studio. Continuation of Art Studio II.

Prerequisites
ARTV 312
(3 cr.)

ARTV 412 - Studio IV

Description
Advanced art studio. Continuation of Art Studio III.

Prerequisites
ARTV 411
(3 cr.)

ARTV 469 - Senior Project (A)

Description
An introduction to the essentials of the creativity process. Through practical assignments, students will gain a clear idea of their own artistic vision. Writing and portfolio assignments as well as visits from professional practicing artists will prepare students for the final senior projects (ARTV470) and for subsequent professional life.

Prerequisites
ARTV 312
When Offered
Offered in fall only.
(3 cr.)

ARTV 470 - Senior Project (B)

Description
Students will research, develop, and exhibit a final body of work that expresses a thorough conceptual and technical process. Writing, professional practice, and career planning will also be emphasized. This course is the equivalent of a “thesis” or a “capstone” class.
Prerequisites
ARTV 469
(3 cr.)

**BIOL 102 - Essentials of Environmental Biology**

**Description**
This course examines basic biology principles as they relate to environmental problems and their solutions. Ecological problems and their underlying current environmental dilemmas will be considered. Depletion and pollution of natural resources and their biological consequences are also studied.

**Prerequisites**
Prerequisite: non-science majors only

**When Offered**
Offered in fall.
(3 cr.)

**BIOL 103 - Introductory Biology**

**Description**
It covers the general aspects of biology including life manifestations and needs, the cell as a unit of life, its structure and function, dynamics of energy utilization and assembly into tissues and organs, physiological processes, and ecological relations.

**Prerequisites**
Prerequisite: non-science majors only.

**When Offered**
Offered in fall, spring and summer

**Notes**
This is a basic biology course for non-science majors. Students taking BIOL 103 may not take BIOL 104

(3 cr. + 1 cr. lab)

**BIOL 104 - The Unity of Life**

**Description**
Introduction to principles of biology, organic and inorganic molecules, membranes and internal structures of cells, photosynthesis, respiration, DNA structure and function, genetic engineering, and the different tissues and organ systems. Laboratories introduce the student to basic principles of plant and animal structure and function and builds on the principles of inheritance to the structure and function of tissues and organ systems.

**When Offered**
Offered in fall, spring and summer.

**Notes**
This course is designed for science majors, but can be taken by anyone interested in studying biology in more depth than Biology 103. It may not be taken by students who have taken BIOL 103 for credit

(3 cr. + 1 cr. lab)

**BIOL 105 - Diversity of Life**

**Description**
Based on the diversity of life: viruses, bacteria, protists, fungi, plants and animals are studied. The course concentrates on development, structure, and function of plants and animals, population genetics, ecology and the environment, and animal behavior. Laboratories introduce students to systematics, evolution, population dynamics, and
modeling of populations of organisms and ecosystems. Some field applications are examined.

**When Offered**
Offered in spring.

**Notes**
This course is designed for science majors, but can be taken by anyone interested in studying biology in more depth than Biology 103.

(3 cr. + 1 cr. lab)

**BIOL 130 - Current Health Issues**

**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.

(4 cr.)

**BIOL 199 - Selected Topic for Core Curriculum**

**Description**
Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

**When Offered**
Offered occasionally.

(3 cr.)

**BIOL 204 - Principles of Systematics**

**Description**
Principles of classification, identification, nomenclature, cladistics, and descriptions of protista, plants, and animals. The taxa of higher levels of selected organisms. Laboratory involves the comparative approach using both specimens and field observations of selected species of plants and animals.

**Prerequisites**
BIOL 105

**When Offered**
Offered in fall.

**Notes**
Field trips are required.

(3 cr. + 1 cr. lab)

**BIOL 210 - Evolution**

**Description**
A study of the history and principles of organic evolution. The evidence for evolution, mechanisms of evolution and population genetics are emphasized.

**When Offered**
Offered in fall.

(3 cr.)
BIOL 211 - Cell Biology

Description
This course is an evolutionary survey of cell specialization of microbes, fungi, plants, and animals. It includes the correlation of microanatomical structures with cellular function and differentiation, teratology, and histology. Laboratories include the identification of basic cell structures and inclusions, tissues and organs, and microscopic preparations.

Prerequisites
BIOL 104 and CHEM 203 or corequisite.
(3 cr. + 1 cr. lab)

BIOL 214 - General Botany

Description
Structure and function of nonvascular and vascular plants. Includes in-depth studies of photosynthesis, metabolism, reproduction, development, physiology, internal transport, evolution, and ecology of plants. Laboratory includes examination of herbaria specimens, growth-chamber experimentation and desert plant ecology and adaptation.

Prerequisites
BIOL 104 and BIOL 105

When Offered
Offered in spring.
(3 cr. + 1 cr. lab)

BIOL 215 - Biophysics

Description
Principles and concepts in the physical analysis of life processes. Fundamental physical and physicochemical treatment of various kinetic processes underlying the normal function of biological systems. Includes mechanics, hydrodynamics, electricity, optics and nuclear physics.

Prerequisites
PHYS 111 and PHYS 123L.
(4 cr.)

BIOL 221 - Genetics

Description
Survey of modern genetics: Mendelian transmission, chromosomes and gene organization, properties of nucleic acids, gene expression, gene regulation, and population genetics. The three-hour laboratory consists of exercises in genetic problem solving, computer simulation and breeding and crossing of fruit flies.

Prerequisites
BIOL 104.
(3 cr. + 1 cr. lab)

BIOL 240 - Ecology

Description
A study of the composition, structure and function of plant and animal communities and the environmental factors regulating their growth and succession. An investigative laboratory emphasizing data collection, analysis and interpretation is included.

Prerequisites
BIOL 105
Notes
Field trips are an integral part of this course.

(3 cr. + 1 cr lab)

BIOL 301 - Animal Physiology

Description
A comparative approach to the nutrient procurement, temperature, osmotic and ionic regulation, regulation of fluids, respiratory, circulatory, and digestive systems, reproduction, hormonal and nervous control, behavior, and biological rhythms of animals. Laboratory emphasizes the physiology of invertebrates and vertebrates.

Prerequisites
BIOL 211
(3 cr. + 1 cr. lab)

BIOL 302 - Environmental Biology for Engineers

Description
This course covers aspects of soil, water, food, and mineral resources management, waste disposal, energy alternatives, population ecology, and environmental ethics with special emphasis on problems encountered by engineers. Laboratory includes field studies of ecosystems, environmental monitoring instrumentation, solar energy techniques, electronic population modeling and techniques used to deal with human consumption of natural resources.

Prerequisites
Prerequisite: Junior or senior standing.
(2 cr. + 1 cr. lab)

BIOL 303 - Developmental Biology

Description
Studies of the embryogenesis of plants and animals. Emphasizes gamete development, fertilization, stages of morphological development, organ system development, and teratology in selected species. Laboratory includes microscopic examination of various stages of development of plant, amphibian, fish, reptile, avian and mammalian species.

Prerequisites
BIOL 211
(3 cr. + 1 cr. lab)

BIOL 304 - Taxonomy

Description
Principles and methods of taxonomy -classification, systematics, phylogeny, nomenclature, phenetics and cladistics - using a selected group of organisms as a paradigm. Laboratory emphasizes the analysis, interpretation and presentation of taxonomic data.

Prerequisites
BIOL 204
(3 cr. + 1 cr. lab)

BIOL 305 - Environmental Biology

Description
Examination of degradation and pollution of natural environments. Aspects of soil, water, food, and mineral resources
management, waste disposal, energy alternatives, population ecology, and environmental ethics. Laboratory to include field studies of ecosystems, environmental monitoring instrumentation, solar energy techniques, electronic population modeling, techniques used to deal with human consumption of natural resources.

**Prerequisites**

BIOL 240 or instructor's consent.  
(3 cr. + 1 cr. lab)

**BIOL 306 - Environmental Biology of the Red Sea**

**Description**

This course is designed to be an interdisciplinary course for students with an interest in coastal and marine environmental issues. Topics covered include marine biology, ecology, geology, paleontology, climatology, and oceanography. Using the Red Sea as a model, students will receive extensive field experience in evaluating the impact of natural phenomena and human activities on coastal and marine environmental planning, management, and monitoring, as well as in the preparation of environmental impact assessments.

**Prerequisites**

Prerequisites: students must be good swimmers and consent of the instructor.

**Notes**

Laboratories and field trips to the Red Sea are essential to the course.

(3 cr. + 1 cr. lab)

**BIOL 307 - Microbiology**

**Description**

Fundamental concepts in morphology, physiology, genetics, immunology, ecology and pathogenic microbiology. Applications of microbiology to medicine, the food industry and biotechnology are taught. Laboratory emphasizes fundamental techniques in culturing, studying and identifying microorganisms.

**Prerequisites**

BIOL 211  
(3 cr. + 1 cr. lab)

**BIOL 312 - Comparative Anatomy**

**Description**

Comparative anatomy of chordates, their evolution, and phylogenetic relationships. Three-hour laboratory includes dissection of chordates.

**Prerequisites**

BIOL 104 and BIOL 105  
(3 cr. + 1 cr. lab)

**BIOL 313 - Invertebrate Zoology**

**Description**

Anatomy, behavior, systematics, and phylogeny of invertebrates are included in the lectures. Three hour laboratory emphasizes morphology and anatomy.

**Prerequisites**

BIOL 105  
(3 cr. + 1 cr. lab)

**BIOL 315 - Biochemistry**
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.

Prerequisites
CHEM 306
Cross-listed
Same as CHEM 315

Hours
Two class periods and one three hour lab period.
(3 cr.)

BIOL 320 - Animal Behavior

Description
Study of ethology with emphasis on its development, control and function. Laboratory includes observations and descriptions, qualification techniques and experimentation.

Prerequisites
BIOL 221
(3 cr. + 1 cr. lab)

BIOL 340 - Quantitative Biology

Description
Application of mathematical and statistical techniques to analyze and interpret data relating to biological inquiries.

Prerequisites
BIOL 240 and MACT 112.

Notes
Extensive use of appropriate computer technology will be applied in recording, cataloguing, analyzing, simulating and reporting data.

(3 cr. + 1 cr. lab)

BIOL 345 - GIS For Biologists

Description
Geographic Information Systems (GIS) for Biologists is designed to introduce the student to the use and application of computer based mapping and analysis technology to ecological data. The application of GIS technology requires program operation skills, computerization of data and relevant biological information. The course is designed to provide "hands-on" skill development in the use and application of GIS.

Prerequisites
Prerequisite: Junior or Senior standing
(4 cr.)

BIOL 350 - Selected Topics in Biotechnology

Description
A practical learning experience in methodology in the various fields of biology, including, but not limited, to virology, bacteriology, parasitology, entomology/acarology, epidemiology, epizootiology, molecular biology, biotechnology, or care of laboratory animals. The student gets hands-on training by interning in an active laboratory under the guidance of an experienced researcher. Under the guidance of a faculty member, 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. The number of credit hours will be determined by the number
of hours worked.

**Prerequisites**
Prerequisites: permission of the instructor.

**Repeatable**
May be repeated for credit if the content changes.
(1-4 cr.)

**BIOL 399 - Guided Studies in Environmental Biology**

**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 as CHEM 399.

**When Offered**
Offered in fall and spring.
(3 cr.)

**BIOL 408 - Selected Topics in Biology**

**Description**
Topics in biology chosen according to the special interests of the student and faculty.

**Prerequisites**
Prerequisite: consent of the instructor.

**Repeatable**
May be repeated for credit more than once if the content changes.
(1-4 cr.)

**BIOL 410 - Guided Studies in Biology**

**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.

**Prerequisites**
Prerequisite: consent of the instructor.
(1-4 cr.)

**BIOL 411 - Molecular Biology of the Gene**

**Description**
A comprehensive course in modern molecular genetics with emphasis on principles, processes, and methodology leading to the formulation of central concepts of molecular genetics. Includes gene regulation and structure, genome organization and molecular evolution.

**Prerequisites**
BIOL 221 and CHEM 203 or corequisite.
(3 cr. + 1 cr. lab)

**BIOL 412 - Molecular Cell Biology**
Description
A comprehensive course in modern molecular biology with emphasis on principles, process, and methodology leading to the formulation of central concepts of cell biology. Includes energy flow within cells, information flow, cancer and growth control.

Prerequisites
BIOL 211 and CHEM 203 or corequisite.
(3 cr. + 1 cr. lab)

BIOL 415 - Immunology

Description
The student is introduced to the function and structure of the immune system at the molecular, cellular, tissue, and organ system levels and the processes involved in the host defense against infection. Laboratories include practical experience with the anatomy and histology of the lymphoid tissues, cell isolation and identification and serological and cellular immune techniques.

Prerequisites
BIOL 211 and CHEM 105
(3 cr. + 1 cr. lab)

BIOL 420 - Genomics and Bioinformatics

Description
This course offers an in depth coverage of the rapidly expanding fields of genomics and bioinformatics. Topics include: the organization and structure of genomes, subdividing the genome, assembling a physical map of the genome, sequencing methods and strategies, genome annotation and bioinformatics, comparative genomics, global expression profiling and applications of genome analysis and genomics.

Prerequisites
BIOL 221
(3 cr. + 1 cr. lab)

BIOL 430 - Tumor Biology

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.

Prerequisites
BIOL 211 and BIOL 221
(3 cr. + 1 cr. lab)

BIOL 440 - Marine Ecology

Description
Examination of the ecology of marine ecosystems. Relationship of physical and chemical processes of marine systems to biological processes in both pelagic and benthic regions. Where possible, examples will be drawn from the Mediterranean and the Red seas.

Prerequisites
BIOL 240 and CHEM 105

Notes
Includes an extended field trip to marine research institute for "hands-on" experience in marine biological research.

(3 cr. + 1 cr. lab)

**BIOL 445 - Desert Ecology**

**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.

**Prerequisites**
BIOL 240
(3 cr. + 1 cr. lab)

**BIOL 495 - Senior Research Thesis**

**Description**
Participating students select a topic according to their field of interest and the availability of advisors and facilities. Students prepare a written report based upon sound literature, laboratory and/or field investigations and present their findings orally in BIOL 496 (Seminar in biology).

**Prerequisites**
Prerequisite: senior standing in biology.

**When Offered**
Offered in fall

**Repeatable**
(2 cr.)

**BIOL 496 - Seminar in Biology**

**Description**
Weekly one hour seminars in different areas of biology and biotechnology to be given by students, faculty and invited speakers from industry and other scientific communities.

**Prerequisites**
BIOL 495

**When Offered**
Offered in the spring.

(1 cr.)

**BIOT 501 - Biochemistry**

**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 501.

(3 cr.)

**BIOT 502 - Cell and Molecular Biology**
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, the passage of information from gene to protein will be addressed.
(3 cr.)

BIOT 503 - Biotechnology

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.
Prerequisites
BIOT 501 and BIOT 502
(3 cr.)

BIOT 504 - Experimental Biotechnology

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.
Prerequisites
BIOT 503
(3 cr.)

BIOT 505 - Basics of Bioentrepreneurship

Description
This course covers four modules: business aspects of biotechnology, regulatory issues, patenting biotechnology inventions, and bioethics.
(3 cr.)

BIOT 511 - Bioengineering

Description
The application of the concepts and methods of the physical sciences and mathematics in an engineering approach to problems in the life sciences.
(3 cr.)

BIOT 521 - Fundamentals of Bioinformatics

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.

**Prerequisites**
Prerequisites: Familiarity with molecular biology, calculus, basic probability and statistics.

(3 cr.)

**BIOT 531 - Molecular Diagnosis**

**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.

(3 cr.)

**BIOT 533 - Pharmacogenomics and Pharmacogenetics**

**Description**
Principles of pharmacology, drug efficacy, pharmacogenetics of major drug groups, application of pharmcogenomics and proteomics to clinical practice.

(3 cr.)

**BIOT 541 - Molecular Genetics**

**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.

(3 cr.)

**BIOT 543 - Microbial Biotechnology**

**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.

(3 cr.)

**BIOT 551 - Selected Topics in Biotechnology**

**Description**
Topics chosen according to special interests of faculty and students.

**Prerequisites**
Pre-requisite: consent of instructor, graduate standing.

**Repeatable**
May be repeated for credit more than once if content changes.

(3 cr.)

**BIOT 580 - Independent Study In Biotechnology**
Description
Independent study in various problem areas of biotechnology 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.

(3 cr.)

BIOT 590 - Graduate Seminar I

Description
Seminars on research topics, research methodology, and thesis writing and presentations given by invited speakers.

(2 cr.)

BIOT 591 - Graduate Seminar II

Description
Seminars on research topics given by invited speakers and on research plans given by students to discuss their thesis topics and the results obtained in their work.

Prerequisites
BIOT 590

(1 cr.)

BIOT 599 - Research Guidance and Thesis

Description
Consultation on problems related to student thesis.

Notes
Must be taken twice for a total of 6 credits.

(3 cr. + 3 cr.)

BIOT 601 - Current Topics in Biotechnology

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.

(3 cr.)

BIOT 602 - Reading and Conference Course

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.

(3 cr.)

BIOT 620 - Computational Genomics and Transcriptomics
Description
The course is designed to provide graduate students with the essential concepts and skills for processing, analyzing, and visualizing biological 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 publicly 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.

Prerequisites
BIOT 521

When Offered
Offered in fall.

(3 cr.)

BIOT 699 - Research Guidance Dissertation

Description
Consultation on problems related to student thesis. To be taken 11 times for credit.

(3 cr.)

CASA 401 - Egyptian Colloquial Arabic

Description
This course further develops students’ skills in Egyptian colloquial Arabic in general while emphasizing the shared features between ECA and MSA. The course concentrates on increasing students’ vocabulary and command of syntax, with a higher level of fluency. The material designed to train students to emulate the speech of educated native speakers in a wide range of social situations.

When Offered
Offered in summer.

(4 cr.)

CASA 411 - Modern Standard Arabic

Description
This course integrates the four language skills to help students develop their ability to produce and comprehend both oral and written discourse at the advanced/advanced high level. The material addresses linguistic needs at this level and provides students with opportunities to further develop their understanding of the various aspects of Egyptian culture.

When Offered
Offered in summer.

(4 cr.)

CASA 501 - Egyptian Colloquial Arabic

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.
(3 cr.)

**CASA 502 - Advanced Egyptian Colloquial Arabic**

**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.
(3 cr.)

**CASA 521 - Listening And Speaking**

**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.
(3 cr.)

**CASA 522 - Academic Listening and Speaking**

**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.

**Prerequisites**
CASA 411 and CASA 521

**When Offered**
Offered in spring.
(3 cr.)

**CASA 531 - Reading, Writing And Vocabulary Building**

**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.

**When Offered**
Offered in fall.
(5 cr.)
CASA 541 - Advanced Writing

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
(3 cr.)

CASA 551 - Advanced Translation

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.
(3 cr.)

CASA 552 - Advanced Media

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.
(3 cr.)

CASA 553 - Selected Topics in Arabic

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.
(3 cr.)

CASA 555 - CASA Students without Borders
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 engagement 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 fall and spring.
(2 cr.)

CENG 215 - Drawing for Construction Engineering and Architecture

Description
Prerequisites
ENGR 115
Hours
One three-hour lab period.
When Offered
Offered in fall and spring.
(1 cr.)

CENG 280 - Construction Surveying

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.
Prerequisites
MACT 132
Hours
Two class periods and three-hour lab period.
When Offered
Offered in fall and spring.
(3 cr.)

CENG 301 - Structural Analysis

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.
Prerequisites
ENGR 212 and ENGR 229 or concurrent
Hours
Three class periods and three-hour tutorial.
When Offered
Offered in fall and spring
(4 cr.)

CENG 302 - Structural Analysis for Architects

Description
Classification of structures with respect to stability and determinacy. Analysis of statically determinate structures under static loads, including: computation of reactions and internal forces in: trusses, beams, frames, arches and cables. Computation of deflections. Analysis of structures using commercial computer software. Assessment of trusses, beams, frames and arches with respect to geometric, loading and supporting conditions.

Prerequisites
ENGR 212

When Offered
Offered in fall and spring
(3 cr.)

CENG 305 - Structural Design for Architects I

Description
Reinforced Concrete Design: properties of concrete, principles of limit states design of beams, loads and load combination, design and reinforcement detailing of: beams, one-way and two-way slabs and short columns. Structural Steel Design: properties of steel, concepts of load and resistance factor design of steel structures, structural systems, computation of loads and load combinations, design of tension members, compression members and beams, behavior of beam-columns, and types of connections.

Prerequisites
CENG 302

When Offered
Offered in fall and spring.
(3 cr.)

CENG 306 - Structural Design for Architects II

Description
Structural systems for gravity loads: flat slab, hollow block slabs, paneled beams, stairs, frames. Structural systems for lateral loads: frames, shear wall and combined systems. Foundation systems: introduction to soil types and soil exploration, foundation design consideration, types of foundation systems, design of shallow foundations.

Prerequisites
CENG 305

When Offered
Offered in fall and spring.
(3 cr.)

CENG 307 - Structural Design

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.

Prerequisites
CENG 301
CENG 311 - Fundamentals of Hydraulic Engineering

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.

Prerequisites
ENGR 261 and ENGR 313 (or concurrent).

Hours
Three class periods and three-hour tutorials.

When Offered
Offered in fall and spring.

(4 cr.)

CENG 323 - Construction Materials and Quality Control I

Description

Prerequisites
ENGR 229

Hours
Three class periods and three-hour lab period.

When Offered
Offered in fall and spring.

(3 cr.)

CENG 325 - Mechanical Engineering in Construction

Description
Introduction to energy transformation systems. Sizing, matching and installation of mechanical, plumbing, heating, ventilation and air conditioning (HVAC) and machining systems.

Prerequisites
ENGR 261

Hours
One class period and three-hour lab period.

When Offered
Offered in fall and spring.

(2 cr.)

CENG 331 - Geology for Engineers

Description
Minerals and rock types, superficial deposits, interpretation of geologic maps, structural geology, geologic exploration, ground water cycle, geology of Egypt and greater Cairo.
Prerequisites
CENG 280

When Offered
Offered in fall and spring.
(2 cr.)

CENG 403 - Design of Steel Structures

Description
Concepts of elastic design of steel structures, type of loading, structural systems for buildings and bridges, elastic design and analysis of structural members, tension members, compression members, beams, columns, and connections.

When Offered
Offered in fall and spring.
(3 cr.)

CENG 411 - Soil Mechanics

Description
Index properties and engineering classification, composition and structure of soils; stresses in soil, stress-strain properties of soils; shear strength, and consolidation. Experimental measurements. Lab and field compaction.

Prerequisites
ENGR 229 and CENG 311

Hours
Two class periods and three-hour lab period.

When Offered
Offered in fall and spring.
(3 cr.)

CENG 423 - Methods and Equipment for Construction I

Description
Site management. Techniques of building construction; methods, materials, tools and equipment; traditional, mechanized and prefabrication construction systems. Construction detailing. Selection, sizing, matching and operation of construction equipment.

Prerequisites
AENG 321 and CENG 305 or CENG 307

Hours
Two class periods and three-hour field trip period.

When Offered
Offered in fall and spring.
(3 cr.)

CENG 424 - Methods and Equipment for Construction II

Description
Civil construction; methods, materials, tools and equipment; traditional and modern construction technologies. Evaluation and selection of appropriate construction technology. Value engineering. Sizing, operation and maintenance of construction equipment.

Prerequisites
CENG 423

When Offered
Offered in fall and spring.
(2 cr.)

CENG 426 - Steel and Concrete Bridges

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.

Prerequisites
CENG 307
(3 cr.)

CENG 427 - Prefabricated, Water and Prestressed Concrete Structures

Description
Prefabricated concrete; design methods, tolerance, floor and roof systems, wall panels and construction joints. Concrete water structures; design considerations and parameters, water tightness, construction of circular and rectangular tanks. Prestressed concrete; basic principles, methods and systems of prestressing, partial loss of prestressing, analysis and design for flexural, shear, bond and bearing.

Prerequisites
CENG 307
(3 cr.)

CENG 428 - Tall Buildings and Large Span Structures

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.

Prerequisites
CENG 306 or CENG 307
When Offered
Offered occasionally.
(3 cr.)

CENG 431 - Transportation Engineering

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.

Prerequisites
ENGR 214 and CENG 323
When Offered
Offered in fall and spring.
(3 cr.)

CENG 441 - Introduction to Construction Management and Cost Estimating

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, financing costs, cost recording and cost accounts, Quality Management, and Safety

**Prerequisites**
ENGR 345

**When Offered**
Offered in fall and spring.
(3 cr.)

### CENG 442 - Construction Project Specifications, Bids, and Contracts

**Description**

**Prerequisites**
CENG 441

**When Offered**
Offered in fall and spring.
(3 cr.)

### CENG 443 - Project Management for Multi-National Environments

**Description**

**Prerequisites**
CENG 441
(3 cr.)

### CENG 444 - Risk Management and Bidding Strategies

**Description**

**Prerequisites**
CENG 441
(3 cr.)

### CENG 445 - Resource Management

**Description**
Introduction to productivity in construction engineering. Conceptual and mathematical formulation of labor, equipment, and material factors affecting productivity. Critical project resources, material management planning and control, procurement and acquisition costs, material management information systems, inventory analysis, inventory factors. Human resources management, manpower planning and organization.

**Prerequisites**
CENG 441
(3 cr.)

CENG 446 - Techniques of Planning, Scheduling and Control

Description
Project definition and work breakdown structure, scheduling and control models, and techniques. Resource allocation
and leveling, optimal schedules, documentation and reporting, cash flow analysis, time and cost control, progress
monitoring and evaluation. Computer applications.

Prerequisites
CENG 441

When Offered
Offered in fall and spring.
(3 cr.)

CENG 447 - Design, Modeling and Simulation of Construction Systems

Description
Design of temporary construction elements: concrete formwork, scaffolding systems, shoring systems, cofferdams,
etc. Sequencing and coordination of construction systems. Computer and physical modeling of construction
processes. Simulation of construction operations.

Prerequisites
CENG 423

Hours
Two one-hour class periods and three-hour lab period.
(3 cr.)

CENG 448 - Financial Management and Accounting for Construction

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.

Prerequisites
CENG 442

When Offered
Offered in fall and spring.
(3 cr.)

CENG 449 - Systems Analysis for Construction Engineering

Description
Introduction to the basic construction systems. The systems analysis approach; multi-objective problems. Decision
analysis; decision making under uncertainty, risk aversion, utility function. Economic considerations for resource
allocation; minimum cost model, maximum output model. Sensitivity analysis; changes in unit costs, changes in
resource constraints. Information management systems.

Prerequisites
ENGR 313 and CENG 446

When Offered
Offered occasionally.
(3 cr.)
CENG 452 - Structural Systems and Advanced Design

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.

Prerequisites
CENG 306 or CENG 307
(3 cr.)

CENG 453 - Construction Materials and Quality Control II

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.

Prerequisites
CENG 323
(3 cr.)

CENG 454 - Structural Mechanics

Description
Review of states of stresses, shear center, principles of fracture mechanics; energy principles with applications to beam deflection and analysis of beams on elastic foundation; principals of structural dynamics; structural stability principles, buckling analysis, and P-Delta effect; introduction to theory of plates and shells.

Prerequisites
CENG 307
(3 cr.)

CENG 461 - Design and Construction of Foundations and Retaining Structures

Description
Earth pressure theories; bases for design of retaining structures; fundamental problems of slope stability; types of foundations systems and design criteria; design of shallow foundations and deep foundations; construction methods; effects of construction of nearby structures.

Prerequisites
CENG 411

When Offered
Offered in fall and spring.
(3 cr.)

CENG 462 - Applications in Geotechnical Engineering

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.

Prerequisites
CENG 461 or concurrent.

**When Offered**
Offered occasionally.
(3 cr.)

**CENG 471 - Environmental and Sanitary Engineering**

**Description**

**Prerequisites**
CENG 311
When Offered
Offered in fall and spring.
(3 cr.)

**CENG 472 - Design of Water Resources Systems**

**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.

**Prerequisites**
CENG 411
When Offered
Offered occasionally.
(3 cr.)

**CENG 473 - Unit Operations in Environmental Engineering**

**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.

**Prerequisites**
CENG 471 concurrent.

**Cross-listed**
Same as ENVE 562 but with additional requirements for graduate students.
(3 cr.)

**CENG 474 - Computer-aided design of environmental and sanitary systems**

**Description**

**Prerequisites**
CENG 311
(3 cr.)

**CENG 475 - Solid and Hazardous Wastes Engineering**
Description

Prerequisites
Pre-requisites: Senior standing.

Cross-listed
Same as ENVE 566, but with additional requirements for graduate students.
(3 cr.)

CENG 479 - Assessment, Protection and Repair of Structures

Description
Types, mechanisms and analysis 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.

Prerequisites
CENG 307 and CENG 323

Cross-listed
Same as CENG 579, but with additional requirements for graduate students.
(3 cr.)

CENG 480 - Special Problems in Construction Engineering

Description
Independent study in various problem areas of construction may be assigned to individual students or groups.

Prerequisites
Prerequisite: consent of instructor and department chair on the basis of a well-defined proposal.

When Offered
Offered in fall and spring.

Repeatable
May be repeated for credit if content changes.

Notes
Readings assigned and frequent consultations held.

(1-3 cr.)

CENG 481 - Highway Facilities

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.

Prerequisites
CENG 431

When Offered
Offered occasionally.
(3 cr.)

CENG 490 - Senior Project I
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.

Prerequisites
Prerequisite: completion of 78 credits in major.

When Offered
Offered in fall and spring.

(1 cr.)

CENG 491 - Senior Project II

Description
An applied capstone 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.

Prerequisites
Prerequisite: CENG 490.

When Offered
Offered in fall and spring.

(2 cr.)

CENG 494 - Selected Topics in Construction Engineering

Description
Specialized topics in construction engineering will be selected and presented.

Prerequisites
Prerequisite: senior standing.

When Offered
Offered in fall and spring.

(3 cr.)

CENG 497 - Practical Training

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.

Prerequisites
Prerequisite: completion of 96 credit hours.

When Offered
Offered in fall.

(1 cr.)

CENG 530 - Contracts in Construction Industry

Description
Introduction to the basic construction industry and its problems. 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 contracts used in construction. Bidding logistics. Legal organizational structures. Different types and uses of specifications.

(3 cr.)
CENG 531 - Construction Management

Description
Introduction to construction management: participants involved types of construction project life cycle. Estimating techniques and procedure: approximate estimating, quantity surveying, detailed estimating procedure, costing of labor, material, equipment, overhead costs, financing costs, cost recording and cost accounts, Quality Management, and Safety Management.
(3 cr.)

CENG 532 - Planning, Scheduling and Control

Description
Project definition and work breakdown structure, scheduling and control models and techniques. Resource allocation and leveling, optimal schedules, documentation and reporting, time and cost control, progress monitoring and evaluation. Computer applications.
(3 cr.)

CENG 533 - Management for Multi-National Environments

Description
Prerequisites
CENG 531
When Offered
Offered in fall and spring.
(3 cr.)

CENG 534 - Risk Management and Bidding Strategies

Description
Prerequisites
CENG 531
When Offered
Offered in fall and spring.
(3 cr.)

CENG 535 - Claims and Disputes in the Construction Industry

Description
The course provides an in-depth coverage of the litigious environment within the construction industry, appropriate techniques to handle such litigations. Claims and disputes from both owners and contractors perspectives. Techniques of scheduling as mechanisms for the efficient resolution of claims.
Prerequisites
CENG 531.
When Offered
Offered in fall and spring.
(3 cr.)

CENG 536 - Systems Analysis for Construction

Description
Integration and application of systems science, operations research and systems methodologies. Design, production, and maintenance of efficient and reliable systems. Introduction to mathematical models. The formulation of the linear programming models. Solving of linear programming models using the graphical solution method, simplex technique, transportation and assignment problem. Decision making under uncertainty, minimum cost model, and sensitivity analysis.

Prerequisites
CENG 532
(3 cr.)

CENG 537 - Resource Management for Construction Projects

Description
Resource management as part of the construction management process. Productivity in construction; conceptual and mathematical formulation of labor, equipment, and materials factors affecting productivity. Management of materials; scheduling, handling, utilization, procurement and acquisition costing, material management information systems, inventory analysis. Management of labor; productivity, ergonomics, utilization, costing, manpower planning and organization. Management of equipment; acquisition, production rates, utilization, matching, costing. Critical project resources.
(3 cr.)

CENG 538 - Procurement of Assets & Services for Construction Projects

Description
Articulation of requirements for new facilities and needs, facility definition and delivery, effective search and definition of resources, management of the process of acquisition, negotiation approaches and strategies, alternative solution and value optimization. International and local case studies.
(3 cr.)

CENG 567 - Construction Leadership and Management Skills

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.

Prerequisites
Prerequisite: consent of instructor.

Notes
Not open for credit for M.S. students.
(3 cr.)

CENG 570 - Advanced Construction Management
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 viewpoints 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.

Prerequisites
Prerequisite: consent of instructor.
(3 cr.)

CENG 571 - Advanced Systems Analysis for Construction Engineering

Description

Notes
Not open for students with MENG 517.
(3 cr.)

CENG 572 - Claims and Disputes in the Construction Industry

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.
(3 cr.)

CENG 573 - Advanced Construction and Building Materials

Description
Recent developments in the areas of concrete, highway materials and metals. Examples are concrete admixtures, lightweight 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.
(3 cr.)

CENG 574 - Methods and Equipment for Construction

Description
Civil construction; methods, materials, tools and equipment; traditional and modern construction technologies. Evaluation and selection of appropriate construction technology. Value engineering. Sizing, operation and maintenance of construction equipment. (Not open for AUC graduates.)

Cross-listed
Same as CENG 424 with special course assignments for graduate students.
(3 cr.)
CENG 575 - Techniques of Planning, Scheduling and Control

Description
Project definition and work breakdown structure, scheduling and control models and techniques. Resource allocation and leveling, optimal schedules, documentation and reporting services, time and cost control, progress monitoring and evaluation. Computer applications. (Not open for AUC graduates.)

Cross-listed
Same as CENG 446 with special course assignments for graduate students.
(3 cr.)

CENG 576 - Advanced Systems for Construction

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, formwork systems, construction technique specialized equipment, deep excavation, dewatering.

Prerequisites
Prerequisite: consent of instructor.
(3 cr.)

CENG 577 - The Finite Element Method in Structural Engineering

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.

Prerequisites
Prerequisite: consent of instructor.
(3 cr.)

CENG 578 - Resource Management for Construction Projects

Description
Resource management as part of the construction management process. Management of materials; scheduling, handling, utilization, costing. Management of labor; tabulation, productivity, ergonomics, utilization, costing. Management of equipment; acquisition, production rates, utilization, matching, costing. Techniques of managing the three resources as an integral part of construction management.

Prerequisites
Prerequisite: graduate standing.
(3 cr.)

CENG 579 - Assessment, Protection and Repair of Structures

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.
Cross-listed
Same as CENG 479 with special course assignment for graduate students.
(3 cr.)

CENG 580 - Independent Study in Construction Engineering

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).

(3 cr.)

CENG 592 - Advanced Topics in Construction Engineering

Description
Topics to be chosen every year according to specific interests.

Prerequisites
Prerequisite: consent of instructor.

Repeatable
May be taken for credit more than once if content changes.

(3 cr.)

CENG 599 - Research Guidance Thesis

Description
Consultation on problems related to student thesis. Must be taken twice for credit.

(3 cr.)

CENG 611 - Structural Stability

Description

Prerequisites
Consent of instructor.

(3 cr.)

CENG 612 - Structural Dynamics

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.

Prerequisites
Consent of instructor.
(3 cr.)

**CENG 613 - Earthquake Engineering and Seismic Design**

**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.

**Prerequisites**
Consent of instructor.
(3 cr.)

**CENG 631 - Specialty Materials for Construction**

**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.

**Prerequisites**
Consent of instructor.
(3 cr.)

**CENG 632 - Highways Pavement Systems and Design**

**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 friction, design criteria, methods of design, design of joints. Design project.

**Prerequisites**
Consent of instructor.
(3 cr.)

**CENG 679 - Preserving, Repair and Sustainability of Structures**

**Description**

**Prerequisites**
CENG 579 or Equivalent Course/Experience
(3 cr.)
CENG 680 - Independent Study in Structural and Material Engineering

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.

(3 cr. max.)

CENG 692 - Advanced Selected Topics in Structural and Material Engineering

Description
Topics chosen according to special interests of faculty and students. May be repeated for credit more than once if content changes.

(3 cr.)

CENG 699 - Research Guidance Dissertation

Description
Consultation on problems related to student thesis. To be taken 11 times for credit.

(3 cr.)

CHEM 103 - Chemistry and Society

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

Prerequisites
Not for credit for Science, Engineering and Computer Science Majors

When Offered
Offered in fall and spring.

Notes
Not for credit for Science, Engineering and Computer Science majors

(3 cr.)

CHEM 104 - Man and the Environment

Description

When Offered
Offered in fall, spring and occasionally in summer.

Notes
Not for credit for science, engineering and computer science majors.

(3 cr.)
CHEM 105 - General Chemistry I

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.

Prerequisites
Thanawiya Amma Science or equivalent.

When Offered
Offered in fall, spring and occasionally in summer and winter.

(3 cr.)

CHEM 106 - General Chemistry II

Description
Gases; thermochemistry; liquids and solids, properties of solutions; introduction to chemical kinetics, chemical equilibria, environmental pollution.

Prerequisites
CHEM 105

When Offered
Offered in fall and spring.

(3 cr.)

CHEM 115L - General Chemistry Laboratory

Description
Selected experiments in inorganic and organic chemistry.

Prerequisites
Thanawiya Amma Science or equivalent

Hours
One three-hour lab period

When Offered
Offered in fall and spring and occasionally in summer and winter.

(1 cr.)

CHEM 116L - General Chemistry Laboratory

Description
Semi-micro qualitative analysis of selected salts and mixtures

Prerequisites
CHEM 115L

Hours
One three-hour laboratory period.

When Offered
Offered in fall and spring.

(1 cr.)

CHEM 199 - Selected Topic for Core Curriculum

Description
Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

When Offered
Offered occasionally.
(3 cr.)

**CHEM 203 - Organic Chemistry I**

**Description**
Aliphatic and aromatic hydrocarbons, stereochemistry and conformational analysis, ionic and free-radical substitution and addition reactions.

**Prerequisites**
CHEM 105

**When Offered**
Offered in fall.
(3 cr.)

**CHEM 205 - Environmental Analytical Chemistry**

**Description**
Introduction; analytical environmental data: assessment and interpretation, titrimetry, chromatography, atomic spectrometry, mass spectrometry, potentiometric techniques, thermal techniques. Specific applications to the environment.

**Prerequisites**
CHEM 106

**Notes**
This course is not available for credit for students who take CHEM 311. Some laboratory demonstrations will be provided.

(3 cr.)

**CHEM 206 - Analytical Chemistry I**

**Description**

**Prerequisites**
CHEM 106 and to be taken concurrently with CHEM 216L

**When Offered**
Offered in spring.
(2 cr.)

**CHEM 207 - Chemical Industries**

**Description**
An overview of major chemical industries, global and local production, major products and their production, selected from: metals petrochemicals, agrochemicals, dyes, pharmaceuticals, plastics, glass, ceramics, cement. Quality assurance.

**Prerequisites**
CHEM 106

**When Offered**
Offered in fall.
Field trips to local industries.

(3 cr.)

**CHEM 216L - Volumetric and Gravimetric Analysis**

**Description**
Acid-base, oxidation-reduction, complexometric and precipitation titrations; gravimetric analysis; potentiometric titrations.

**Prerequisites**
CHEM 116L and concurrent with CHEM 206

**Hours**
Two three-hour periods.

**When Offered**
Offered in spring.

(2 cr)

**CHEM 220 - Introduction to Food Chemistry**

**Description**
Introduction of the chemistry associated with the structure and the functions of food components and systems. The course also addresses the beneficial and detrimental changes that occur in foods during processing, storage and utilization.

**Prerequisites**
CHEM 105.

(3 cr.)

**CHEM 301 - Seminar in Science and Technology**

**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.

**Prerequisites**
Junior standing

**When Offered**
Offered occasionally

(1 cr.)

**CHEM 303 - Thermodynamics**

**Description**
Gas laws, state variables and equations of state, energy and the first law, thermochemistry; entropy and the second and the third laws; spontaneity and equilibrium; phase equilibria.

**Prerequisites**
MACT 231 CHEM 206 and concurrent with CHEM 313L.

**When Offered**
Offered in fall.

(3 cr.)

**CHEM 304 - Physical Chemistry I**
**Description**  
Chemical potential and equilibria, solutions and colligative properties, electrolytes, electrochemical cells. Kinetic Theory of Gases.

**Prerequisites**  
CHEM 303, PHYS 112 and concurrent with CHEM 314L.

**When Offered**  
Offered in spring.

(3 cr.)

**CHEM 306 - Organic Chemistry II**

**Description**  
Stereochemistry, aromaticity, electrophilic aromatic substitution; spectroscopy and structure; SN1, SN2, E1, and E2 reactions.

**Prerequisites**  
CHEM 203

**When Offered**  
Offered in spring.

(3 cr.)

**CHEM 307 - Production Basics for Chemical Industries**

**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.

**Prerequisites**  
CHEM 106.

**When Offered**  
Offered every other semester.

(3 cr.)

**CHEM 309 - Inorganic Chemistry I**

**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.

**Prerequisites**  
CHEM 106 and junior standing.

**When Offered**  
Offered in fall.

(3 cr.)

**CHEM 310L - Organic Chemistry I Laboratory**

**Description**  
Characterization of organic compounds by classification tests.

**Prerequisites**  
CHEM 116L and CHEM 306.
CHEM 311 - Analytical Chemistry II

**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.

**Prerequisites**
CHEM 206 and CHEM 216L.

**Hours**
Two class periods and one three-hour lab period.

**When Offered**
Offered in fall.

(1 cr.)

CHEM 312 - Archaeological Chemistry I

**Description**

**Prerequisites**
CHEM 106.

**When Offered**
Offered occasionally.

(3 cr.)

CHEM 313L - Thermodynamics Laboratory

**Description**
Experiments in physical chemistry, thermodynamics and error analyses.

**Prerequisites**
CHEM 106, CHEM 216L and concurrent with CHEM 303.

**When Offered**
Offered in fall.

(1 cr.)

CHEM 314L - Physical Chemistry I Laboratory

**Description**
Experiments in electrochemistry. One three-hour lab period.

**Prerequisites**
CHEM 313L and concurrent with CHEM 304.

**When Offered**
Offered in spring.

(1 cr.)

CHEM 315 - Biochemistry
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.

Prerequisites
CHEM 306

Cross-listed
Same as BIOL 315.

Hours
Two class periods and one three hour lab period.

When Offered
Offered in fall.

(3 cr.)

CHEM 316L - Organic Chemistry II Laboratory

Description
Systematic identification of organic compounds, analysis of mixtures (qualitative and quantitative).

Prerequisites
CHEM 310L

When Offered
Offered in spring.

(1 cr.)

CHEM 318L - Inorganic Chemistry Laboratory

Description
Preparations, reactions, and characterization of some inorganic compounds; ion-exchange; chromatography; measurements of stability constants.

Prerequisites
CHEM 216L

When Offered
Offered in fall.

(1 cr.)

CHEM 320 - Food Science and Technology

Description
An overview of the interdisciplinary nature of food science. Key food commodities and food composition with an emphasis on the functional properties of each commodity. The chemical and physical properties of foods. An overview of food regulation. Concepts and applications of food processing, biotechnology, sensory evaluation, food packaging and food product development. Global food situation with an emphasis on the Egyptian context.

Prerequisites
CHEM 105.

(3 cr.)

CHEM 325 - Clinical Chemistry I

Description
Prerequisites
CHEM 311 or concurrently, CHEM 313L or consent of instructor

Hours
Two class periods and one three-hour lab period.

When Offered
Offered in spring.
(3 cr.)

CHEM 399 - Guided Studies in Environmental Sciences

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 399.

When Offered
Offered in fall and spring.
(3 cr.)

CHEM 402 - Physical Chemistry II

Description
Chemical kinetics and dynamics, photochemistry, heterogeneous and homogeneous catalysis, surface chemistry including adsorption, crystal structure.

Prerequisites
CHEM 304, MACT 233 and concurrent with CHEM 412L.

When Offered
Offered in fall.
(3 cr.)

CHEM 403 - Introduction to Quantum Mechanics and Spectroscopy

Description
Basic concepts and theory of quantum mechanics, applications to atomic and molecular spectroscopy.

Prerequisites
CHEM 304 (or concurrent) and PHYS 214.

When Offered
Offered in spring.
(3 cr.)

CHEM 406 - Organic Chemistry III

Description
A continuation of the chemistry of monofunctional and polyfunctional compounds, including the chemistry of carbanions, condensation reactions, nucleophilic addition and multistep syntheses.

Prerequisites
CHEM 306

When Offered
Offered in spring.
(3 cr.)
CHEM 407 - Food Processing and Preservation

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.

Prerequisites
CHEM 106.

When Offered
Offered in fall.

(3 cr.)

CHEM 408 - Inorganic Chemistry II

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.

Prerequisites
CHEM 309

When Offered
Offered in spring.

(3 cr.)

CHEM 410 - Archaeological Chemistry II

Description

Prerequisites
CHEM 312

When Offered
Offered occasionally.

Notes
Pore size distribution studies.

(3 cr.)

CHEM 412L - Physical Chemistry II Laboratory

Description
Experiments in physical chemistry emphasizing chemical kinetics.

Prerequisites
CHEM 314L and concurrent with CHEM 402.

Hours
One three-hour lab period.

When Offered
Offered in fall.

(1 cr.)
CHEM 414 - Selected Topics in Chemistry

Description
Topics chosen according to special interests of faculty and students.

Prerequisites
Prerequisite: consent of instructor.

When Offered
Offered occasionally.

Repeatable
May be repeated for credit more than once if content changes
(1-3 cr.)

CHEM 416L - Organic Syntheses

Description
Organic Synthesis of compounds through one step or multistep, using different techniques for separation and purification. Several spectroscopic tools, (MS, IR, NMR & C13) are used to confirm the structure of synthesized compounds.

Prerequisites
CHEM 316L and CHEM 406.

When Offered
Offered in fall.
(2 cr.)

CHEM 425 - Clinical Chemistry II

Description

Prerequisites
CHEM 325

Hours
Two class periods and one three-hour lab period

When Offered
Offered in fall.
(3 cr.)

CHEM 430L - Advanced Practical Organic Chemistry

Description
Advanced organic multistep syntheses, identification of products by spectroscopy, semimicro quantitative determination of organic compounds.

Prerequisites
CHEM 416L and consent of instructor.

When Offered
Offered occasionally.
(3 cr.)

CHEM 435 - Advanced Organic Chemistry
Description
Specialized topics in the field of organic chemistry chosen according to specific interests; e.g., polynuclear aromatic compounds, heterocyclic compounds, carbohydrates, proteins, nucleic acids, physical organic chemistry.

Prerequisites
CHEM 406 consent of instructor.

When Offered
Offered occasionally.

(3 cr.)

CHEM 440 - Molecular Symmetry and Applications

Description
Molecular symmetry: basic principles and applications, molecular vibrations, construction of hybrid orbitals, delocalized molecular orbitals with emphasis on pi orbitals, ligand field spectra and construction of energy-level diagrams.

Prerequisites
CHEM 309 and consent of instructor.

When Offered
Offered occasionally.

(3 cr.)

CHEM 444 - Independent Study

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.

Prerequisites
Prerequisite: consent of instructor, senior standing.

Repeatable
May be taken more than once if content changes.

Notes
A student may earn up to a total of three credits.

(1-3 cr.)

CHEM 450 - Electrochemistry

Description
Electrochemical processes, irreversible electrodes and cells; dissolution and corrosion of metals; passivity, electrolytic reduction and oxidation; applications of electrochemistry to include fuel cells, electrodialysis, electrophoresis, molten salt cells.

Prerequisites
CHEM 304, CHEM 314L, and consent of instructor.

Hours
Three class periods or two class periods and one three-hour lab period.

When Offered
Offered occasionally.

(3 cr.)

CHEM 495 - Senior Thesis and Seminar
Description
Methods used in obtaining and reporting the results of research. Each student selects a topic in his/her field of interest under the supervision of a faculty member, prepares an outline, assembles a bibliography, and makes a study plan to be followed in preparing his project. After finishing the project, each participant then makes an oral presentation of his/her chosen topic. A written thesis has to be completed after criticism and suggestions.

Prerequisites
Prerequisite: senior standing.

When Offered
Offered in fall and spring.

Notes
May be substituted by a 400-level course in chemistry or other sciences with the approval of the department.

(3 cr.)

CHEM 501 - Biochemistry

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 501.

(3 cr.)

CHEM 502 - Organometallics

Description
Structure and properties of different types of organometallic compounds, types of ligands, bonding, reactivity of organotransition metal compounds, applications in synthesis and catalysis.

(3 cr.)

CHEM 503 - Advanced Organic Chemistry

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.

(3 cr.)

CHEM 504 - Methods of Structure Determination

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.

Prerequisites
CHEM 440 or consent of instructor.

(3 cr.)
CHEM 511 - Applied Food Microbiology

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.
(3 cr.)

CHEM 512 - Food Safety Assurance

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.
(3 cr.)

CHEM 513 - Beverage Manufacturing

Description
This course covers chemistry and technology of beverages and drinks with respect to beverage chemistry, processing, preservation and quality control. Characteristics of raw materials and the relationship of end product characteristics to product formulation, processing and storage will be addressed. Emphasis will be placed upon the safety of products and maintaining or enhancing their health nutritional properties. Other topics include production, marketing and distribution both locally and globally, impact of processing techniques on the nutritional qualities of beverages.
(3 cr.)

CHEM 514 - Chemical Changes In Food During Processing

Description
This course consists of two lectures and one laboratory session per week. It is designed to provide the students with in-depth information on the principles of food selection and food preparation. This course covers the physical, chemical, and nutritional changes which occur in food during storage, cooking, processing and preservation.
(3 cr.)

CHEM 515 - Food Additives

Description
This course consists of two lectures and one laboratory session per week. The course will present the principles and discuss 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.
(3 cr.)

CHEM 516 - Food Fermentation
Description
Food fermentations by microorganisms play central roles in the processing and preservation of foodstuffs. The typical flavor and other sensory characteristics of fermented foods depend on the formation of specific fermentation products. This course covers the study of microorganisms responsible for fermentation, the biochemistry of microbial fermentations and the industrial aspects of the fermentation process. It also seeks to deliver up-to-date knowledge and practical training on various technologies of food fermentation.

(3 cr.)

CHEM 517 - Sensory Evaluation of Food Products

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.

(3 cr.)

CHEM 518 - Functional Foods and Nutraceuticals

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 health products and their influence on the development and commercialization of these products in global markets will be presented.

(3 cr.)

CHEM 519 - Practical Approaches to Food Analysis

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.

(3 cr.)

CHEM 551 - Selected Topics in Chemistry

Description
Topics include: polymer science, quantum chemistry and spectroscopy, and molecular symmetry and applications.
Prerequisites
Consent of instructor

(3 cr.)
CHEM 552 - Independent Study in Chemistry

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.

Prerequisites
Consent of instructor.
(3 cr.)

CHEM 590 - Graduate Seminar I

Description
Seminars on research topics, research methodology, and thesis writing and presentations given by invited speakers.
(2 cr.)

CHEM 591 - Graduate Seminar II

Description
Seminars on research topics given by invited speakers and on research plans given by students to discuss their thesis topics and the results obtained in their work.

Prerequisites
CHEM 590.
(1 cr.)

CHEM 599 - Research Guidance and Thesis

Description
Consultation on problems related to student thesis. Must be taken twice for a total of 6 credits.
(3 cr. + 3 cr.)

CHEM 603 - Bioseparation Processes for Food and Pharmaceutical Industries

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.

Prerequisites
Consent of instructor.

When Offered
Offered in fall and spring.
(3 cr.)

CHEM 615 - Principles and Applications of Mass Spectrometry
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.

Prerequisites
CHEM 504
(3 cr.)

CORE 199 - Selected Topic for Core Curriculum

Description
Course addressing broad intellectual concerns and accessible to all students, irrespective of major.
(3 cr.)

CORE 299 - Selected Topic for Core Curriculum

Description
Course addressing broad intellectual concerns and accessible to all students, irrespective of major.
Prerequisites
RHET 101
(3 cr.)

CORE 499 - Selected Topic for Core Curriculum

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.
Prerequisites
RHET 201
(3 cr.)

CREL 135 - Dimensions of the Sacred: Exploring Religious Experience

Description
What defines religion? What might explain the practically universal impulse to recognize the divine? This course investigates a variety of religions, according to common dimensions held by them that run across cultures: the social; the ethical; the doctrinal; the ritual; the mythic; the experiential; and the artistic.
(3 cr.)

CREL 210 - Religions of the World

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.
(3 cr.)
CREL 212 - The Quest for the Historical Jesus

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.

Cross-listed
Same as HIST 212.

When Offered
Offered occasionally
(3 cr.)

CREL 220 - Hinduism and Buddhism in India

Description
This course will explore the major dimensions of the two most important religions in India from 1500 BCE to 1000 CE. Along with providing an introduction to these two traditions, the course will give particular attention to the ways in which these religions have interacted historically.

(3 cr.)

CREL 230 - Pilgrimage Traditions in the World's Religions

Description
This course examines pilgrimage as a unifying theme in exploration of human religiosity. While we will focus on what are called "ritual pilgrimages", such as the Islamic hajj, we will also explore pilgrimage more metaphorically, by looking at the allegorical, mythological, and visionary journeys. As frameworks for our analyses, we will also look at humanistic and social scientific interpretive and theoretical models concerning pilgrimage.

(3 cr.)

CREL 299 - Selected Topics for Core Curriculum

Description
Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

Prerequisites
RHET 101

When Offered
Offered occasionally.
(3 cr.)

CREL 320 - Masters, Saints, and Saviors: Sacred Biography in the World's Religions

Description
This course will explore one of the most important subjects in religious literature, the lives of great spiritual figures. We will investigate a variety of biographical and autobiographical materials from several different religious traditions, examining both form and function and testing whether or not we can make useful cross-cultural comparisons.

(3 cr.)

CREL 333 - Zionism and Modern Judaism
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.
Cross-listed
Same as HIST 333.
(3 cr.)

CREL 529 - World Religions and the Study of Religion

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.
Prerequisites
Prerequisite: Enrollment in the Islamic Studies MA program.
Cross-listed
Same as ARIC 529.
(3 cr.)

CSCE 102 - Introduction to Computers and their Applications

Description
Introduction to computer-related terms and concepts. Scope limitations of the computer capabilities. Ethics and social impact of using computers. Basic skills related to the familiarity and efficient use of computer input/output devices, operating systems and computer communications. Training on popular computer applications (e.g. word processing, spread sheet, database and presentation graphics). Limited programming experience in a high-level language.
When Offered
Offered in fall and spring.
Notes
This course is intended for arts students.
(3 cr.)

CSCE 106 - Fundamentals of Computer Science

Description
Introduction to the discipline of computing. Computer systems, number systems, data representation and basic computer organization. Basic Math concepts, functions and propositional logic. Problem solving, abstraction, design and programming. Selection structures, repetition and loop statements. Modular programming. Basic testing and debugging of programs. Introduction to programming in C++. Professional Ethics for computer professionals.
Prerequisites
Prerequisite: College level preparation course in Mathematics or MACT 100.
When Offered
Offered in fall and spring.
(3 cr.)

CSCE 110 - Programming Fundamentals

Description
Overview of basic programming constructs. Functions, parameter passing and files. Data modeling with arrays,
structures and classes. Pointers and linked lists. Recursion. Basic program design and analysis, testing and debugging techniques. Programming in C++. Program development using modern APIs.

**Prerequisites**
CSCE 106

**When Offered**
Offered in fall and spring.

(3 cr.)

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**CSCE 201 - Information Technology**

**Description**
Module 1: The Components of Information Technology: data technology, processing technology, and networking technology. Module 2: Computer Ethics and Social Issues. Module 3: Business, Economic and Development Impacts of Information Technology. Module 4: Computer Applications (in which students will be given the chance to create, modify and interact with sophisticated computer applications.)

**Prerequisites**
Prerequisite: Sophomore standing or higher.

**When Offered**
Offered once every year.

(3 cr.)

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**CSCE 210 - Data Structures and Algorithms**

**Description**

**Prerequisites**
CSCE 110

**When Offered**
Offered in fall and spring.

(3 cr.)

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**CSCE 230 - Digital Design I**

**Description**
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 electronics.

**Prerequisites**
PHYS 215

**When Offered**
Offered in fall and spring.

(3 cr.)

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**CSCE 231 - Computer Organization and Assembly Language Programming**
Description
Explaining the state of the art computer systems focusing on major components: CPU, I/O, and memory. In-depth discussion of the instructions set architecture of the MIPS microprocessors. This includes different types of assembly instructions doing basic arithmetic, data movement, decision making, and jumping. Discussing different performance matrices of microprocessors and how to measure and analyze performance and evaluate speedups. Going through basic computer arithmetic covering integer and floating point operations. Discussing I/O ports, I/O devices and controllers, DMA channels, priority interrupts. Also discussing different I/O technologies, such as magnetic disks, flash disks, and optical storage. It also discusses the latest trends in microprocessors design and programming (such as SIMD and MIMD).

Prerequisites
CSCE 110
Cross-listed
Same as EENG 352.
When Offered
Offered in fall and spring.
(3 cr.)

CSCE 239L - Digital Design I Lab

Description
The laboratory will cover experiments in digital design and experiments illustrating material of course CSCE 230.

Prerequisites
Concurrent with CSCE 230.

When Offered
Offered in fall and spring.
(1 cr.)

CSCE 253 - Fundamentals of Database Systems

Description
Basic concepts, database system environment, DBMS. Components and architecture access structures, indexing and hashing, high-level data models, ER and EER model, the relational model, relational languages, relational algebra, relational calculus, SQL, introduction to functional dependencies and normalization, social and ethical context of databases.

Prerequisites
CSCE 210.

When Offered
Offered in fall and spring.
(3 cr.)

CSCE 315 - Programming Language

Description
A programming language different from those studied in CSCE 106 and 110 will be presented according to the interest of both students and faculty.

Prerequisites
CSCE 210.

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.

(1-2 cr.)

**CSCE 316 - Programming in Java**

**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.

**Prerequisites**
CSCE 210

**When Offered**
Offered occasionally.

(3 cr.)

**CSCE 317 - Object Oriented Programming**

**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.

**Prerequisites**
CSCE 210

**When Offered**
Offered Occasionally.

(3 cr.)

**CSCE 321 - Analysis and Design of Algorithms**

**Description**
Design and analysis of basic classes of algorithms: Divide and conquer, greedy methods, tree and graph traversals, and backtracking. Applications to problems such as sorting and searching, traveling salesperson, and knapsack. Theory of complexity.

**Prerequisites**
CSCE 210 and MACT 200

**When Offered**
Offered in fall and spring.

(3 cr.)

**CSCE 325 - Concepts of Programming Languages**

**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.

**Prerequisites**
CSCE 210

**When Offered**
Offered in fall and spring.

(3 cr.)

**CSCE 330 - Computer Architecture**

**Description**
The objectives of this course are to introduce the principles of Modern Computer Architecture and design. Topics to be discussed include Instruction Set Architectures, Arithmetic Logic Unit design, CPU data path design, CPU pipelining, memory hierarchy, cache and virtual memory, and introduction to I/O.

**Prerequisites**
CSCE 230 and CSCE 231

**Cross-listed**
Same as EENG 455.

**When Offered**
Offered in fall and spring.

(3 cr.)

**CSCE 332 - Fundamental Microelectronics**

**Description**
Devices and Basic Circuits: Introduction to Electronics, Operational Amplifiers, Diodes, Bipolar Junction Transistors (BJT’s), Field Effect Transistors (FET’s), MOS and bipolar logic families, design parameter analysis, storage elements, interfacing logic families, Operational amplifiers.

**Prerequisites**
PHYS 215

**When Offered**
Offered in fall.

(3 cr.)

**CSCE 333 - Data and Computer Communications**

**Description**
Data transmissions. Transmission media, data encoding, data link control, and multiplexing. Introduction to wide area networks and local area networks technology and systems.

**Prerequisites**
CSCE 210 and PHYS 215

**When Offered**
Offered in fall and spring.

(3 cr.)

**CSCE 337 - Digital Design II**

**Description**
VLSI fabrication, Design of complex CMOS gates, Combinational and Sequential logic structures in VLSI; Semiconductor memories and array structures; Introduction of ASIC design techniques and tools; design and programming of FPGAs using CAD tools; timing in sequential circuits; essential hazards; races in sequential circuits; Digital systems design; Datapath and Control design; Modeling and simulation; Fault models and testing.

**Prerequisites**
CSCE 230, CSCE 332

**When Offered**
Offered in spring.

(3 cr.)
CSCE 339L - Computer Architecture Lab

Description
The laboratory will cover experiments in computer architecture and hardware design and experiments illustrating material of course CSCE 330.

Prerequisites
Prerequisite: Concurrent with CSCE 330

Cross-listed
Same as EENG 458.

When Offered
Offered in fall and spring.

(1 cr.)

CSCE 341 - Software Engineering

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.

Prerequisites
CSCE 210

When Offered
Offered in fall and spring.

(3 cr.)

CSCE 342 - Computer Systems

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.

Prerequisites
CSCE 106

When Offered
Offered in fall.

Notes
This course is not available for either Computer Science or Computer Engineering students.

(3 cr.)

CSCE 345 - Operating Systems

Description

Prerequisites
CSCE 210 and CSCE 330

When Offered
Offered in fall and spring.
(3 cr.)

CSCE 346 - Introduction to Information Security

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.

Prerequisites
CSCE 110.

When Offered
Offered in spring.
(3 cr.)

CSCE 363 - Digital Signal Processing

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.

Prerequisites
PHYS 215 and junior standing.

When Offered
Offered in spring.
(3 cr.)

CSCE 401 - Internet-based Information Systems

Description

Prerequisites
MOIS 305

Cross-listed
Same as MOIS 402.

When Offered
Offered in fall and spring.
(3 cr.)

CSCE 422 - Theory of Computing

Description

Prerequisites
MACT 200 and Senior standing.

When Offered
Offered in fall and spring.
(3 cr.)

**CSCE 427 - Introduction to Artificial Neural Networks**

**Description**

**Prerequisites**
CSCE 210 MACT 231 and MACT 240

**When Offered**
Offered Occasionally.
(3 cr.)

**CSCE 432 - Embedded Systems**

**Description**
Embedded processor architecture and programming, I/O and device driver interfaces to embedded processors with networks, video cards and disk drives. Using operating systems primitives for concurrency, timeouts, scheduling, communication and synchronization, Real-time resource management techniques, and application-level embedded system design concepts such as basic signal processing and feedback control.

**Prerequisites**
CSCE 345

**When Offered**
Offered in spring.
(3 cr.)

**CSCE 435 - Wide Area Networks**

**Description**

**Prerequisites**
CSCE 210 and PHYS 215

**When Offered**
Offered in fall.
(3 cr.)

**CSCE 436L - Local Area Networks Lab**

**Description**
The laboratory will cover experiments in Local Area Networks to support and illustrate the material of the course CSCE 437.

**Prerequisites**
Concurrent with CSCE 437

**When Offered**
Offered in spring.
(1 cr.)
CSCE 437 - Local and Metropolitan Area Networks

**Description**

**Prerequisites**
CSCE 333

**When Offered**
Offered in spring.

(3 cr.)

CSCE 438L - Embedded Systems Lab

**Description**
The laboratory will cover experiments in embedded systems illustrating material of course CSCE 432.

**Prerequisites**
Concurrent with CSCE 432

**When Offered**
Offered in spring.

(1 cr.)

CSCE 439L - Wide Area Networks Lab

**Description**
The laboratory will cover experiments in computer networks illustrating material of course CSCE 435.

**Prerequisites**
Concurrent with CSCE 435

**When Offered**
Offered in fall.

(1 cr.)

CSCE 441 - Object-Oriented Analysis and Design

**Description**

**Prerequisites**
CSCE 341

**When Offered**
Offered occasionally

(3 cr.)

CSCE 445 - Fundamentals of Distributed Systems

**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.

**Prerequisites**
CSCE 345

**When Offered**
Offered in fall.

(3 cr.)

**CSCE 446 - Computer Security**

**Description**
Fundamentals of computer security. Identification and authentication. Access control, different approaches for inclusion of a security kernel. Security in UNIX and Windows. How security is broken and how it is evaluated. Distributed systems security, World Wide Web security, and network security. Practical experience to be gained through an assigned project to evaluate the security of a real operational system.

**Prerequisites**
CSCE 345

**When Offered**
Offered occasionally.

(3 cr.)

**CSCE 447 - Compiler Design**

**Description**

**Prerequisites**
CSCE 325

**When Offered**
Offered in fall and spring.

**Notes**
Project: students construct a simple compiler that generates unoptimized code.

(3 cr.)

**CSCE 448 - Secure Systems Engineering**

**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.

**Prerequisites**
CSCE 341 and CSCE 345

**When Offered**
Offered in fall and spring.

(3 cr.)

**CSCE 453 - Database Systems**
Catalog 2012-2013 Extract

Description
Advanced relational database theory: functional dependencies, multivalued dependencies, join dependencies, inclusion dependencies. System catalog implementation, query optimization techniques, transaction processing, concurrency control, database security, backup and recovery strategies. Advanced data modeling (e.g. object-oriented databases), distributed and client server architectures, and further exposure to social and ethical issues in databases.

Prerequisites
CSCE 253

When Offered
Offered occasionally.
(3 cr.)

CSCE 455 - Computer Graphics

Description
Overview of graphic systems and interactive devices. Output primitives and their attributes. Two-dimensional transformations, segments, windowing, and clipping. Introduction to three-dimensional representation and viewing.

Prerequisites
CSCE 210 and MACT 240 or concurrent.

When Offered
Offered occasionally.
(3 cr.)

CSCE 456 - Design of Web-based Systems

Description

Prerequisites
CSCE 253

When Offered
Offered in fall and spring.
(3 cr.)

CSCE 465 - Artificial Intelligence

Description
Problem spaces and application areas in engineering and science. LISP or PROLOG programming. AI architecture, knowledge representation, hierarchical planning. Machine learning and Connectionist models. Parallel and distributed AI. Object-oriented Knowledge representations. Students will use an AI programming language to solve some of the famous AI problems.

Prerequisites
CSCE 325 and MACT 200

When Offered
Normally offered in fall.
(3 cr.)

CSCE 485 - Selected Topics in Computer Science and Engineering

Description
Topics chosen according to special interests of faculty and students. May be repeated for credit more than once if
content changes.

Prerequisites
Prerequisite: permission of instructor.

When Offered
Offered in fall and spring.

(1-3 cr.)

CSCE 490 - Industrial Training

Description
Each student is required to spend a minimum of eight weeks in some related computer training in Egypt or abroad. A report followed by discussion is submitted to a departmental committee for evaluation.

Prerequisites
Prerequisite: junior standing.

When Offered
Offered in fall and spring.

Notes
Graded pass or fail

(1 cr.)

CSCE 491 - Senior Project I

Description
Participating students select project topic according to their subject of interest and the availability of facilities and advisors. Students carry out necessary preliminary work and submit a progress report. Ethical responsibilities of a computing professional are covered by lectures and seminars and emphasized through the student's team work.

Prerequisites
CSCE 341 or concurrent and Senior standing.

When Offered
Offered in fall and spring.

(1 cr.)

CSCE 492 - Senior Project II

Description
Participating students carry on the plan of work they developed in CSCE 491. 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.

Prerequisites
CSCE 491

When Offered
Offered in fall and spring.

(2 cr.)

CSCE 495 - Guided Studies in Computer Science and Engineering

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.

Prerequisites
Prerequisite: consent of instructor.

**When Offered**
Offered in fall and spring.
(1-3 cr.)

**CSCE 525 - Algorithms and Complexity Theory**

**Description**
(3 cr.)

**CSCE 527 - Neural Networks and Genetic Algorithms**

**Description**
Basic concepts on artificial neural networks, non-symbolic vs symbolic information learning systems. Unsupervised learning networks, supervised learning networks, neural network hardware. Evolutionary computations, genetic algorithms, evolutionary programming, genetic programming. Hybrid systems integrating classical AI techniques with biologically-based techniques, and some applications.
(3 cr.)

**CSCE 529 - Design and Analysis of Parallel Algorithms**

**Description**
(3 cr.)

**CSCE 530 - Advanced Processor Architecture**

**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.

**Prerequisites**
CSCE 330
(3 cr.)

**CSCE 532 - Parallel Computer Architecture**

**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 multiprocessors, data flow architectures, scalability and performance, software for parallelism.

**Prerequisites**
CSCE 530
(3 cr.)

CSCE 535 - High Speed Networks

Description

Prerequisites
CSCE 435 or equivalent.
(3 cr.)

CSCE 541 - Advanced Software Engineering

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.

(3 cr.)

CSCE 543 - Advanced Software Quality

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.

(3 cr.)

CSCE 545 - Distributed Systems

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.

(3 cr.)

CSCE 555 - Computer Graphics and Animation

Description

(3 cr.)

CSCE 561 - Knowledge Engineering

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.
(3 cr.)

CSCE 563 - Digital Image Processing

Description
Image acquisition, color representation, quantization, image transforms, enhancement, filtering, multi-spectral processing, image restoration, image segmentation, morphological transform, compression, and applications.
(3 cr.)

CSCE 564 - Web Mining

Description
Introduction to web data mining including web usage mining, structure mining, and content mining. Web mining techniques: data and text classification, data and text clustering, association, and path analysis. Applications of web mining: personalization, summarization, web page ranking, opinion mining, information extraction, topic tracking and others.
(3 cr.)

CSCE 565 - Advanced Artificial Intelligence

Description
Cross-listed
Same as RCSS 545.
(3 cr.)

CSCE 567 - Computer Vision

Description
Image formation, image filtering and features detection, SIFT and HOG, segmentation, object detection with sliding windows, bag of words, OpenCV library, camera 3D to 2D projection, stereo vision, shape from X, object registration, model matching, and virtual reality.
Prerequisites
Approval of Instructor.
(3 cr.)

CSCE 569 - Natural Language Processing and Machine Translation

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.
(3 cr.)

CSCE 585 - Selected Topics in Computer Science

Description
Topics chosen according to special interests of faculty and students.
Prerequisites
Prerequisite: permission of instructor.

Repeatable
May be repeated for credit more than once if content changes.

(3 cr.)

CSCE 590 - Seminar

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.

(1 cr.)

CSCE 591 - Capstone Project in Computing

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.

Prerequisites
Prerequisite: consent of instructor.

Notes
This course cannot be taken for credit by thesis-option M.Sc. students.

(3 cr.)

CSCE 599 - Graduate Thesis

Description
Consultation on problems related to student thesis.

Notes
Must be taken twice for credit.

(3 cr.)

CSCE 642 - Mobile and Pervasive Computing

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.

Prerequisites
Approval of Instructor.

(3 cr.)

CSCE 664 - Advanced Data Mining
Description
Theoretical aspects of data mining techniques including classification, association, predication, and cluster analysis. Related fields from which data mining draws, like database technology, artificial intelligence, and machine learning, will be emphasized. Data mining applications will also be introduced based on the interest of the students.

Prerequisites
CSCE 565
(3 cr.)

CSCE 692 - Advanced Selected Topics in Computer Science

Description
Topics chosen according to special interests of faculty and students. May be repeated for credit more than once if content changes.

(3 cr.)

CSCE 699 - Research Guidance Dissertation

Description
Consultation on problems related to student thesis. To be taken 11 times for credit.

(3 cr.)

DSGN 200 - Analogue and Digital Practices

Description
This course introduces students to the basic skills in various traditional and contemporary mediums: screen printing, digital photography, digital imaging, video and sound editing. The aim is to offer hands-on basic skills in analogue and digital practices including film, visual arts and graphic design.

Cross-listed
Same as ARTV 200 and FILM 200

Notes
*Registration in this course is contingent upon consent of the director of the program

(3 cr.)

DSGN 201 - Design I

Description
Based on a series of experimental visual exercises, this course investigates basic design principles like concepts development and its application in different mediums. Students will explore the fundamentals of graphic form, communicating visually, and integration of type through drawing, collage, and other experimental media.

Prerequisites
DSGN 200 and DSGN 213
(3 cr.)

DSGN 202 - Design II: Logo and Corporate Identity
Description
The development of an identity of brand through its logo and corporate identity is the aim of this course. It teaches students to think strategically about a company’s image and mission. In this studio course students will work with real client briefs and experimental ideas.

Prerequisites
DSGN 210 and DSGN 250
(3 cr.)

DSGN 210 - Typography I

Description
This course is an introduction to and experimentation with different aspects of Latin and Arabic typography. It addresses letterforms 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.

Prerequisites
DSGN 200 and DSGN 213
(3 cr.)

DSGN 213 - Introduction to Visual Cultures

Description
Introduces students to the study of visual cultures in such arenas as film and video, photography, painting and sculpture, the built environment, advertising and fashion, and social media/internet. Students will learn how to analyze visual materials across media, interpret meanings, and gain experience in applying critical concepts to these understandings.

Cross-listed
Same as ARTV 213 and FILM 213.
(3 cr.)

DSGN 215 - History of Graphic Design

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.

Prerequisites
DSGN 213
(3 cr.)

DSGN 240 - Color

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.
(3 cr.)

**DSGN 245 - Illustration**

**Description**
Students explore the different media of illustration for different end products in this studio course.

(3 cr.)

**DSGN 250 - Digital Practice I**

**Description**
Introduction to the basic operation of computers for designers and developing their skills on desktop programs like Illustrator and Photoshop.

**Prerequisites**
DSGN 200  
(3 cr.)

**DSGN 303 - Design III: Publication**

**Description**
This course focuses on the different formats that a printed word can appear in on different items like brochures, catalogues, newspapers, magazines and books. Students are given briefs that push for exploration of type on different grids, as well as layouts, editing photos, structure, and space

**Prerequisites**
DSGN 210 and DSGN 350  
(3 cr.)

**DSGN 304 - Design IV: Packaging**

**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.

**Prerequisites**
DSGN 210 and DSGN 250  
(3 cr.)

**DSGN 305 - Design V: Retail Design**

**Description**
In this course students develop one whole project in all of its applications. From a logo to in-store signage, students explore the application of a unified visual system across several media from print to on-line.

**Prerequisites**
DSGN 210 and DSGN 250.
(3 cr.)

**DSGN 313 - Web Design**

**Description**
In studio we will explore concepts and the design of branding in the web environment. After presentation of the basic programs and related means of web production, as well as the importation of sound, motion and image, each student will create and design the interface of a brand that exclusively exists on the web. Students will develop a branding strategy, identity design, the components of on-line standards and its digital manual format. The instructors will provide information on strategy, information narratives, hypertext, accessibility and system. Students will experiment with type, form color, layout, grid, hierarchy, sequence etc. and explore how these behave in an electronic interface. By the end of the course, each student will have produced a working prototype and interface web site for their brand.

**Prerequisites**
DSGN 201

**When Offered**
Offered in fall and spring
(3 cr.)

**DSGN 315 - History of Graphic Design in the Arab world**

**Description**
Exploring a relatively new field in the region, this course will explore the history of graphic design in the Arab world by looking at the rise of different newspapers, magazines and packaging design from the turn of the century until today.

**Prerequisites**
DSGN 213
(3 cr.)

**DSGN 317 - History of Advertising in the Arab World**

**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.

**Prerequisites**
DSGN 213
(3 cr.)

**DSGN 318 - History of Arabic Calligraphy**

**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.

(3 cr.)

**DSGN 320 - Typography II**
Description
This course continues exploring the world of typography through the study of essential typographic elements and principles while discussing typographic functions and critical theoretical issues. Studies will include grid layout and page systems and typographic matching between Arabic and Latin typography.

Prerequisites
DSGN 210
(3 cr.)

DSGN 330 - Typography III

Description
Technology and typography is explored in this course. Students will explore and understand type applications on different media from cell phones to home appliances to websites. The aim of this course is to equip students in applying typography in any media such as music, videos, web applications, film titles, etc.

Prerequisites
DSGN 320
(3 cr.)

DSGN 335 - Animation

Description
Students are taught how to deal with shapes in motion, character and background animation using director or flash.

Prerequisites
DSGN 350
(3 cr.)

DSGN 350 - Digital Practices II

Description
This course continues students learning in desktop software with a focus on in-design and the cross usage of the Adobe CS package with software like Illustrator Photoshop and Bridge.

Prerequisites
DSGN 250
(3 cr.)

DSGN 360 - Photography for Designers

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.

Prerequisites
ARTV 230
(3 cr.)
DSGN 365 - Advertising and Branding

Description
A theory and practice course on the world of art direction for advertising. Students will be exposed to classic advertising concepts like total branding and new ones like CRM and activation. The course is studio based and might include real market briefs or experimental ones.

Prerequisites
DSGN 210 and DSGN 250.
(3 cr.)

DSGN 400 - Professional Practice

Description
Off-campus experimental learning in Graphic Design. Students are encouraged to explore the market by interning for eight weeks at different international and Pan-Arab design houses, advertising agencies, web design companies, publishing houses, calligraphers, TV stations, printing presses, and animation houses.

Prerequisites
Completion of all Major Courses.
(3 cr.)

DSGN 410 - Portfolio

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.

Prerequisites
Completion of all major courses.
(3 cr.)

DSGN 420 - Production for Designers

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.

Prerequisites
Completion of all major courses.
(3 cr.)

DSGN 469 - Senior Project Thesis

Description
An independent research with a topic approved by the department. Students are requested to work independently and submit a comprehensive paper on their chosen topic.
Prerequisites
Completion of all major courses.
(3 cr.)

DSGN 470 - Senior Project Practice

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.

Prerequisites
DSGN 469
(3 cr.)

ECLT 123 - Experiencing Creativity: Texts and Images

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 199 - Selected Topic for Core Curriculum

Description
Course addressing broad intellectual concerns and accessible to all first-year students as part of the Primary Level Core.
(3 cr.)

ECLT 200 - Introduction to Literature

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.
(3 cr.)

ECLT 201 - Survey of British Literature

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.
(3 cr.)

ECLT 202 - Global Literature in English

Description
The course explores modern literature written in English by native and non-native speakers (African, Arab, American, British, European, Indian, and Asian writers). This course emphasizes the stylistic analysis, theoretical examination, and historical context of shorter texts to develop an appreciation for the globalization of English-language literary production, and for the role of postcolonial writers.
(3 cr.)
ECLT 209 - Introduction to American Studies

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.

Cross-listed
Same as HIST 209.

(3 cr.)

ECLT 299 - Selected Topic for Core Curriculum

Description
Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

Prerequisites
RHET 101

(3 cr.)

ECLT 301 - Medieval Literature

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.

(3 cr.)

ECLT 302 - Literature of the Renaissance

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.

(3 cr.)

ECLT 303 - Seventeenth-Century Literature

Description
The literary developments that followed the Renaissance are explored, culminating in discussion of John Milton and his epic masterpiece, Paradise Lost.

(3 cr.)

ECLT 304 - Eighteenth-Century Literature

Description
Dominant modes in European literature and thought between 1660 and 1760. Works not originally written in English will be read in English translations.

(3 cr.)

ECLT 305 - Romanticism
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.
(3 cr.)

ECLT 306 - Nineteenth-Century European Literature

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.
(3 cr.)

ECLT 308 - Modern European and American Literature

Description
Selected readings of American and European authors representing literary trends from 1900 to the present
(3 cr.)

ECLT 310 - American Literature to 1900

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
Cross-listed with AMST 310.
(3 cr.)

ECLT 311 - Modern American Literature

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
Cross-listed with AMST 311.
(3 cr.)

ECLT 330 - Literature and Cinema

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.
(3 cr.)

ECLT 332 - World Literature

Description
The course covers seminal literary works in both Western and non-Western canons, assigned in editions of excellent
English translations.
(3 cr.)
ECLT 333 - African Literature

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.
(3 cr.)

ECLT 344 - Literature and Philosophy

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 344.
(3 cr.)

ECLT 345 - Literature and Gender

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.
(3 cr.)

ECLT 346 - Third World Literature

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.
(3 cr.)

ECLT 347 - Selected Topics

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.
(3 cr.)

ECLT 348 - Contemporary Literature

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.
(3 cr.)
ECLT 352 - Recurrent Themes in Literature

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.
(3 cr.)

ECLT 353 - Modern Drama

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.
(3 cr.)

ECLT 360 - Shakespeare

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.
(3 cr.)

ECLT 370 - Creative Writing

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.
(3 cr.)

ECLT 409 - Greek Classics in Translation

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.
Cross-listed
Same as ECLT 506.
(3 cr.)

ECLT 410 - Classics of the Ancient World

Description
Major works in ancient Near Eastern and Latin literatures studied in the most artistic translations.
Cross-listed
Same as ECLT 507.
(3 cr.)
ECLT 411 - History of Literary Criticism

Description
Study of central documents in the tradition of Western literary criticism, from Plato to the Romantics.

Cross-listed
Same as ECLT 508.
(3 cr.)

ECLT 412 - Modern Literary Criticism

Description
Analysis of the major trends in modern literary theory, such as Russian formalism, new criticism and post-structuralism.

Cross-listed
Same as ECLT 509.
(3 cr.)

ECLT 447 - Capstone Seminar: Selected Topics

Description
Examination of specific themes and other topics of special interest. This course is designed to meet the requirements of a capstone seminar for the core curriculum. May be repeated for credit if content changes.
(3 cr.)

ECLT 506 - Greek Classics in Translation

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.

Cross-listed
Same as ECLT 409.
(3 cr.)

ECLT 507 - Classics of the Ancient World

Description
Major works in ancient Near Eastern and Latin literatures studied in the most artistic translations.

Cross-listed
Same as ECLT 410.
(3 cr.)

ECLT 508 - History of Literary Criticism

Description
Study of central documents in the history of literary criticism, from Plato to the Romantics.

Cross-listed
Same as ECLT 411.
(3 cr.)

ECLT 509 - Modern Literary Criticism
Description
Analysis of the major trends in modern literary theory, such as Russian formalism, new criticism and post-structuralism.

Cross-listed
Same as ECLT 412.
(3 cr.)

ECLT 510 - Renaissance Writers

Description
Detailed study of the works of selected British or European writers from Petrarch to Shakespeare.
(3 cr.)

ECLT 512 - Seventeenth-Century Writers

Description
Detailed study of the works of selected seventeenth-century European and British writers.
(3 cr.)

ECLT 514 - Eighteenth-Century Writers

Description
Selected works of major eighteenth-century writers.
(3 cr.)

ECLT 516 - The Romantic Movement

Description
Selected critical problems in the Romantic movement.
(3 cr.)

ECLT 517 - Nineteenth-Century Writers

Description
Works of selected major nineteenth-century novelists and poets.
(3 cr.)

ECLT 523 - Modern Poets

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.
(3 cr.)

ECLT 531 - The Modern Novel

Description
Works of selected novelists of the twentieth century.
(3 cr.)
ECLT 540 - Readings in American Literature

Description
Guided reading.
(3 cr.)

ECLT 542 - Readings in French Literature

Description
Guided reading.
(3 cr.)

ECLT 543 - Readings in British Literature

Description
Guided reading.
(3 cr.)

ECLT 545-546 - Selected Topics

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.

When Offered
545 offered in fall, 546 in spring.

Repeatable
May be repeated for credit if content changes.
(3 cr.)

ECLT 555 - Research Methods in Literature

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.

(3 cr.)

ECLT 588 - Comprehensives

Description
Individual consultation for students preparing for the comprehensive examination.
(no cr.)

ECLT 599 - Research Guidance and Thesis

(no cr.)
ECON 199 - Selected Topic for Core Curriculum

Description
Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

Prerequisites
RHET 101

When Offered
Offered in fall and spring.

Notes
This course does not count as part of Economics major or minor requirements.

(3 cr.)

ECON 201 - Introduction to Macroeconomics

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.

(3 cr.)

ECON 202 - Introduction to Microeconomics

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.

(3 cr.)

ECON 215 - Economic History of the Modern Middle East

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.

(3 cr.)

ECON 216 - Mathematics for Economists I

Description
Prerequisites
MACT 100 or equivalent.

When Offered
Offered in fall and spring.
(3 cr.)

ECON 218 - Statistics for Economists

Description
The course covers the general theory of estimation. Topics include: sampling distributions, testing hypotheses about the difference between two means, analysis of variance (ANOVA), correlation and simple regression analysis, nonparametric statistics including Chi-squared & Index numbers.

Prerequisites
MACT 112

When Offered
Offered in fall and spring.
(3 cr.)

ECON 224 - Economic History

Description
Theories of economic evolution with a special focus on Europe. Includes analyses of technological change, property rights systems and economic growth, and income distribution. Examines the transition from feudalism to capitalism, first and second industrial revolutions, the 20th century Great Depression and the reconstruction of the world economies after World War II.

When Offered
Offered in fall and spring.
(3 cr.)

ECON 301 - Intermediate Macroeconomic Theory

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.

Prerequisites
ECON 201 and ECON 216.

When Offered
Offered in fall and spring.
(3 cr.)

ECON 302 - Intermediate Microeconomic Theory

Description

Prerequisites
ECON 202 and ECON 316

When Offered
Offered in fall and spring.
(3 cr.)

ECON 303 - Money and Banking

Description
Determinants of a nation's money supply and the role of the central bank. Monetary theory, impact of changes in the stock of money on economic activity, international monetary relations, examination of different international monetary systems

Prerequisites
Prerequisite: ACCT 201 plus ECON 201 and ECON 202

When Offered
Offered in fall and spring.
(3 cr.)

ECON 308 - Labor Economics

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)

Prerequisites
ECON 201 and ECON 202

When Offered
Offered in fall and spring.
(3 cr.)

ECON 309 - Emerging Economies

Description
This course conducts a critical analysis of the specific economic and institutional characteristics enabling emerging economies to achieve rapid and sustainable economic growth and development. Case studies will also be used to illustrate the impact of these nations upon global integration dynamics.

Prerequisites
ECON 201 and ECON 202

When Offered
Offered occasionally.
(3 cr.)

ECON 310 - Public Finance

Description
Application of efficiency criteria to political decision making: allocation of resources to social goods, tax and subsidy correctives for externalities, minimizing excess burden of financing government activity. Equity criteria for tax systems and income distribution. Analysis of Egypt's public finances and evaluation of Egyptian public policy.
ECON 312 - Economic Development

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.

Prerequisites
ECON 201 and ECON 202

When Offered
Offered in fall and spring.
(3 cr.)

ECON 316 - Mathematics for Economists II

Description

Prerequisites
ECON 216

When Offered
Offered in fall and spring.
(3 cr.)

ECON 318 - Introduction to Econometrics

Description
The course covers the General Linear Regression Model. Topics include: departures from the basic assumptions of the general model: multicollinearity, autocorrelation, heteroskedasticity, errors in variables, dynamic systems and distributed lag models, the identification problem, estimation of structural equations. Assignments include applications to real world examples.

Prerequisites
ECON 218 and ECON 316

When Offered
Offered in fall and spring.
(3 cr.)

ECON 320 - The Digital Economy: Information Technology, Knowledge and Intellectual Property

Description
The course offers analysis of the economics of information technology, knowledge and intellectual property. Topics include: electronic readiness, knowledge measurement indices, the digital divide; economics of content: knowledge as a public good, static and dynamic costs and benefits of intellectual property rights; competition and intellectual property; open business models, innovation and entrepreneurship in the digital economy.
Prerequisites
ECON 201 and ECON 202.

When Offered
Offered in fall and spring.
(3 cr.)

ECON 348 - Agricultural Economics

Description
This course is concerned with the application of economic theory to agricultural markets and food security with special reference to Egypt and other developing countries. Analysis will focus upon agricultural resource allocation, price determination, market structures, water scarcity, commodity trading, and other topics within the context of an increasingly globalized framework of trade and financial institutions.

Prerequisites
ECON 201 and ECON 202

When Offered
Offered occasionally.
(3 cr.)

ECON 403 - International Trade

Description

Prerequisites
ECON 301 and ECON 302

When Offered
Offered in fall and spring.
(3 cr.)

ECON 405 - History of Economic Thought

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.

Prerequisites
ECON 201 and ECON 202

When Offered
Offered in fall and spring.
(3 cr.)

ECON 411 - Seminar: Special Topics in Economics

Description
Guided reading, research, and discussion of specific 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.

(3 cr.)

ECON 413 - Cost-Benefit Analysis

Description
This course develops the theoretical tools and applied case study analysis to financial and economic project evaluation. Criteria for project feasibility, net worth of investment projects, cash flow discounting, and financial rates of return. Valuation, shadow pricing, and economic appraisal. Applications to real life projects.

Prerequisites
ECON 302

When Offered
Offered in fall and spring.

(3 cr.)

ECON 414 - Economics of Egypt

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, sectoral 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 for the most recent challenges facing the Egyptian economy.

Prerequisites
ECON 201 and ECON 202. Junior standing or higher.

When Offered
Offered in fall and spring.

(3 cr.)

ECON 415 - Seminar on Economic Development in the Middle East

Description
This course explores the application of key concepts relating to economic development and policy analysis to contemporary problems facing countries in the Middle East and North Africa. The course focus is upon thematic policy issues such as growth and structural change; macroeconomic adjustment, industrial development, food and agriculture policy, and trade and financial sector reform.

Prerequisites
ECON 201

When Offered
Offered occasionally.

(3 cr.)

ECON 416 - Mathematical Economics
Description

Prerequisites
ECON 316

When Offered
Offered in fall and spring.
(3 cr.)

ECON 418 - Econometric Methods

Description

Prerequisites
ECON 318

When Offered
Offered in fall.
(3 cr.)

ECON 418P - Practicum

Description
This practicum is structured to run parallel with ECON 418. Practical problems in economic model building. Formulation of static and dynamic models. Estimation of behavioral equations of illustrative and real models using econometric packages such as RATS, TSP, SORITEC, etc., with single-equation and simultaneous-equation methods. Testing hypotheses about economic theory. Calculation of forecasts.

When Offered
Offered in fall.
(1 cr.)

ECON 420 - Independent Study

Description
Guided reading, research, and discussion based on a subject of mutual interest to a student and faculty member.

Prerequisites
Consent of instructor and unit head, senior standing.

When Offered
Offered in fall and spring.
(3 cr.)

ECON 500 - The Economic Setting for Development

Description
Open only for those students doing the Diploma or Masters Degree in Economics (International Development). Does not count for credit in the M.A. degree in Economics. Foundation course dealing with macroeconomic variables and issues concerned with the functioning of an economy, in addition to selected microeconomic aspects pertinent to development. Special attention is given to concepts and tools applicable to challenges facing developing countries whose economies often lack the maturity of more developed countries in terms of institutional and policy settings.
(3 cr.)
ECON 501 - Advanced Macroeconomic Theory

**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.

**Prerequisites**
ECON 416

**When Offered**
Offered in Spring

(3 cr.)

ECON 502 - Advanced Microeconomic Theory

**Description**

**Prerequisites**
ECON 416

**When Offered**
Offered in fall.

(3 cr.)

ECON 504 - Financial Economics

**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.

**Prerequisites**
ECON 416

**When Offered**
Offered in spring.

(3 cr.)

ECON 505 - Advanced International Trade

**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.

**Prerequisites**
ECON 500 * or ECON 501 ** and ECON 502**

**Notes**
* denotes a prerequisite that applies to students enrolled in the MA Econ., or Graduate Diploma, in International Development. ** denotes prerequisites that apply to MA Econ. Degree students.

(3 cr.)
**ECON 506 - Advanced Topics in Economics**

**Description**
Guided readings, research, and discussion in special topics in Economics.

**Prerequisites**
Prerequisites: Consent of instructor

**When Offered**
Offered occasionally.

(3 cr.)

**ECON 508 - Labor Economics**

**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.

**Prerequisites**
ECON 500* or consent of instructor.

**When Offered**
Offered occasionally.

**Notes**
* denotes a prerequisite that applies to students enrolled in the MA Econ., or Graduate Diploma, in International Development.

(3 cr.)

**ECON 509 - An Advanced History of Economic Thought**

**Description**
This course will explore, using both primary 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.

(3 cr.)

**ECON 511 - Economic Development in Middle East Countries**

**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 occasionally.

(3 cr.)

**ECON 512 - Economic Growth & Development**
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.

Prerequisites
ECON 500* or ECON 501** and ECON 502**

Notes
* denotes a prerequisite that applies to students enrolled in the MA Econ., or Graduate Diploma, in International
Development. ** denotes prerequisites that apply to MA Econ. Degree students.

(3 cr.)

ECON 514 - Ethical Issues in Development

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.

Prerequisites
ECON 500* or ECON 501**

Notes
* denotes a prerequisite that applies to students enrolled in the MA Econ., or Graduate Diploma, in International
Development. ** denotes prerequisites that apply to MA Econ. Degree students.

(3 cr.)

ECON 516 - Mathematical Economics

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.

Prerequisites
ECON 416

When Offered
Offered occasionally.

(3 cr.)

ECON 517 - International Finance

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.

Prerequisites
ECON 501

(3 cr.)

ECON 518 - Econometrics
Description

Prerequisites
ECON 418

When Offered
Offered in fall.

(3 cr.)

ECON 519 - Project Evaluation

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.

Prerequisites
ECON 500* or ECON 502**

Notes
* denotes a prerequisite that applies to students enrolled in the MA Econ., or Graduate Diploma, in International Development. ** denotes prerequisites that apply to MA Econ. Degree students.

(3 cr.)

ECON 520 - Competitive Strategy and Game Theory

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.

Prerequisites
ECON 502.

When Offered
Offered in Spring.

(3 cr.)

ECON 521 - Independent Study

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 Director of Graduate Program and Chair of the Department. Course can be taken more than once.

(3 cr.)

ECON 522 - Economic Strategies for Sustainable Development

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.

Prerequisites
ECON 500* or ECON 501**

**When Offered**
Offered occasionally.

**Notes**
* denotes a prerequisite that applies to students enrolled in the MA Econ. or Graduate Diploma, in International Development. ** denotes prerequisites that apply to MA Econ. Degree students.

(3 cr.)

**ECON 525 - Research Workshop**

**Description**
Research methodology: collection of data, analysis of information, measurement, and testing hypotheses. Completion of a major research term paper.

**Prerequisites**
ECON 501, ECON 502 and ECON 518

**When Offered**
Offered occasionally.

(3 cr.)

**ECON 526 - Development Research Workshop**

**Description**
Review of research process, dealing with problem/hypothesis definition, data collection/analysis, statistical measurement and testing methods particularly relevant to applied development issues (quantitative and qualitative data) and some exposure to applied econometrics. This is followed by individualized guidance of students’ research proposals and projects. Completion of a research-based paper.

**Prerequisites**
Prerequisites: completion of at least three core courses.

(3 cr.)

**ECON 530 - Health Economics in Developing Countries**

**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.

**Prerequisites**
ECON 500* or ECON 502**

**Notes**
* denotes a prerequisite that applies to students enrolled in the MA Econ. or Graduate Diploma, in International Development. ** denotes prerequisites that apply to MA Econ. Degree students.

(3 cr.)

**ECON 531 - Health Care Financing**
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.

Prerequisites
ECON 501* and ECON 502** or ECON 500**

Notes
* denotes a prerequisite that applies to students enrolled in the MA Econ., or Graduate Diploma, in International Development. ** denotes prerequisites that apply to MA Econ. Degree students.

(3 cr.)

ECON 590 - Practicum

Description
A 200-hour assignment with a relevant development-related institution, to be completed over a 4-6 week period, providing exposure and work experience in a development setting. Students are required to prepare a research-based paper drawing on their practicum experience.

Prerequisites
Prerequisites: completion of 3 core courses at least.

(3 cr.)

ECON 599 - Research Guidance and Thesis

(6 cr.)

EDUC 511 - Foundations of Educational Research

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 key issues in qualitative and quantitative research in the field of international and comparative education, and be able to distinguish between good and poor research.

Notes
This pre-requisite course should be taken in the first semester of study.

(3 cr.)

EDUC 513 - Qualitative & Mixed Methods in Educational Research

Description
In this course, MA candidates will have the opportunity to extend the knowledge of educational research acquired in EDUC 511 by learning about essential methods of qualitative research and mixed method research in education. Emphasis will be on data handling in qualitative settings, as well as research in a variety of applied educational contexts. This course must be taken by MA candidates whose Capstone project will require qualitative or mixed methods research.

Prerequisites
EDUC 511 and EDUC 521  
(3 cr.)

EDUC 521 - Social Foundations of Education

Description
Using a multidisciplinary approach, the course will examine the underlying issues within contemporary educational policies, practices and theories of education. 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 course is a pre-requisite for all other courses and must be taken in the first semester.

(3 cr.)

EDUC 531 - Introduction to International & Comparative Education

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.

Prerequisites
EDUC 511 and EDUC 521  
(3 cr.)

EDUC 532 - globalization, Development, and Educational Reform in the Arab World

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.

(3 cr.)

EDUC 533 - Comparative Gender, Adolescent, Youth, and Human Development Policy

Description
This course will explore gender, adolescent 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 and adolescents in society and the rights and responsibilities of young people. Particular attention will be given to the relationships between educational practices, systems, and policies and their relationship to life-work outcomes.

(3 cr.)
EDUC 534 - Strategic Educational Planning and Development

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.
(3 cr.)

EDUC 535 - Educational Evaluation & Assessment

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 analyze ways 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.

Prerequisites
EDUC 511 and EDUC 521.
(3 cr.)

EDUC 536 - Human Rights-based Education

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.
(3 cr.)

EDUC 541 - Human Development & Learning Theories for Classroom Teachers

Description
The MA candidates enrolled in the Teacher Education concentration will learn about human growth and development from infancy through adolescence, in order that they will understand the capabilities and needs of their students. Emphasis will be placed on the integration of various aspects of development (including cognitive, linguistic, social/emotional, motor). They will also study current developments in theories of learning, including those derived from neuro-cognitive research, in light of their roles as classroom teachers. Candidates may be exempted from this course if they pass a content-based examination.
(3 cr.)

EDUC 542 - Transformational Leadership

Description
In this course students will investigate leadership theories; however, the focus will be to examine the elements of transformational leadership and explore how transformational leaders create successful school change and innovation.
Students will analyze case studies and leadership styles. The course content and activities will encourage and promote students to be educational change agents. Students will study leadership traits, styles and 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.

(3 cr.)

**EDUC 543 - Foundations of Educational Psychology for Educational Leaders**

**Description**
MA candidates enrolled in the Educational Leadership concentration will study theories of learning and human development, focusing on the application of this knowledge in their various leadership roles. Candidates may be exempted from this course if they pass a content-based examination.

(3 cr.)

**EDUC 544 - School Governance and Management**

**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.

**Prerequisites**
Completion of Core Courses.

(3 cr.)

**EDUC 545 - Psychological Foundations of Education for Policy Planners**

**Description**
In this course, MA candidates enrolled in the International Education Policy & Planning concentration will learn about human development—from birth through adulthood—as well as about contemporary theories of learning. The emphasis will be on how the multiple processes which accompany development and learning interact with their policy-making and planning activities. Candidates may be exempted from this course if they pass a content-based examination.

**EDUC 546 - Organizational Theory and Educational Institutions**

**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.

(3 cr.)

**EDUC 551 - Foundations of Instructional Practice for Classroom Teachers**

**Description**
In this course, MA candidates enrolled in the Teacher Education concentration will study major methods of instruction
as well as classroom management, lesson planning, meeting the needs of diverse learners, the nature of inquiry learning, and standards-based instruction. Candidates may be exempted from this course if they pass a content-based examination.

(3 cr.)

EDUC 552 - The Potential of Emerging Technologies as Transformative Learning Tools

Description
This course explores the potential of technology as a transformational tool to facilitate more powerful and era-appropriate ways of learning and teaching. The current educational challenges and changing needs of next generation students will be discussed with reference to technology initiatives and established standards. Students will engage with a variety of emerging technologies, assess their pedagogical potential, and design effective learning opportunities to utilize one or more of these technologies. They will also critically evaluate and synthesize research in this area. Finally, the implications of these technologies in terms of equity and diversity will be discussed. Underlying theoretical frameworks as well as design and implementation strategies are considered throughout the course.

(3 cr.)

EDUC 553 - Fundamentals of Instruction Management for Educational Leaders

Description
In this course, MA candidates enrolled in the Educational Leadership concentration will study instructional methods from the point of view of how to enhance instruction in the school, in order to achieve overall school improvement. Enhancement of instruction will be viewed in light of the educational leader’s supervisory, professional development, and organizational management functions. Candidates may be exempted from this course if they pass a content-based examination.

(3 cr.)

EDUC 554 - Reading and Writing in the Content Area Classroom

Description
This course provides primary and secondary teachers with various theoretical constructs to understand learning, reading and writing within distinct academic discourse communities. Attention is focused on instructional strategies for incorporating writing and reading support in various content-based classrooms. Additionally, strategies for encouraging richer content-area learning are provided through the use of varied texts and writing assignments.

(3 cr.)

EDUC 555 - Classroom Instruction for Policy Planners

Description
MA candidates enrolled in the International Education Policy & Planning concentration will study the major methods of instruction which teachers apply in classrooms, in order to better understand the challenges which classroom instruction poses. Discussion of these challenges will present issues from teaching and administrative perspectives, in order to better inform the views of policy planners. Candidates may be exempted from this course if they pass a content-based examination.

(3 cr.)

EDUC 556 - Action Research
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 students from various regions.

Prerequisites
EDUC 511
(3 cr.)

EDUC 557 - Reaching Diverse and Underserved Learners

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.

(3 cr.)

EDUC 573 - Research-based Instructional Leadership

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.

Prerequisites
Completion of Core Courses.
(3 cr.)

EDUC 575 - Educational Policy Analysis

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.

Prerequisites
Completion of Core Courses.
(3 cr.)

EDUC 581 - Issues in Comparative Education for Classroom Teachers

Description
This course presents MA candidates in the Pre-K—12 Teacher Education concentration with major education debates, practices, and challenges which teachers throughout the world are faced with on a daily basis. The course addresses
persistent and emerging themes, such as: professionalization of teachers and on-going career preparation; integrating technology into instructional practice; formal and informal learning; the role of assessment in instruction; standards-based instruction; and the on-going process of building school-home relationships which can help enhance student learning.

Prerequisites
Completion of Core Courses.
(3 cr.)

EDUC 583 - Issues in Comparative Education for Educational Leaders

Description
This course presents MA candidates in the Educational Leadership concentration with major education debates, practices, and challenges which school administrators throughout the world face on a daily basis. The course addresses persistent and emerging themes, including: school administration and financing; quality control of educational program planning and implementation; ensuring provision of equitable education for all learners; developing a learning community at the school, especially through engaging all members in the school’s vision; and involving the wider community in school activities, for mutual benefit.

Prerequisites
Completion of Core Courses.
(3 cr.)

EDUC 585 - Issues in Comparative Education for Policy Planners

Description
This course presents MA candidates in the International Education Policy & Planning concentration with major education debates, practices, and challenges which policy planners throughout the world must deal with. The course addresses persistent and emerging themes, such as: planning for nationwide educational reform; financing quality education (public and private); ensuring equitable quality education for all learners; gender and educational equity; lack of infrastructure; adult illiteracy; and the role of multilateral organizations in educational reform in developing countries.

Prerequisites
Completion of Core Courses.
(3 cr.)

EDUC 590 - MA Capstone (Thesis or Equivalent; Practicum for IEPP)

Description
The student will complete a scholarly thesis; conduct action research; develop a school-based or community-based educational program; or engage in a practicum, under the supervision of a faculty member. The capstone must include both theoretical aspects and practical field experience. This course will allow students an opportunity to synthesize their coursework, apply their acquired knowledge, and contribute to the knowledge base on education and learning in Egypt and the region. This course will be graded Pass-Fail.

Prerequisites
EDUC 511 and EDUC 521
(3 semester hours)

EDUC 595 - Supervised Fieldwork
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.

(3 cr.)

EENG 210 - Digital Logic Design

Description
The nature of digital logic and numbering systems. Boolean algebra, Karnaugh map, decision-making elements, memory elements, latches, flip-flops, design of combinational and sequential circuits, integrated circuits and logic families, shift registers, counters and combinational circuits, adders, subtracters, multiplication and division circuits, memory types. Exposure to logic design automation software. Introduction to FPGAs and HDL.

Prerequisites
CSCE 106 . Concurrent with EENG 218L

Cross-listed
Same as PHYS 319.

When Offered
Offered in fall, spring and summer.

(3 cr.)

EENG 215 - Circuit Analysis I

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.

Prerequisites
PHYS 112

When Offered
Offered in fall and spring.

(3 cr.)

EENG 216 - Circuit Analysis II

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.

Prerequisites
EENG 215 and concurrent with MACT 233 and EENG 219L
When Offered
Offered in fall and spring.
(3 cr.)

**EENG 218L - Digital Logic Design Lab**

**Description**
The laboratory component will cover experiments in digital design and experiments illustrating material of course EENG 210.

**Prerequisites**
Concurrent with EENG 210

**Cross-listed**
Same as PHYS 309L.

**When Offered**
Offered in fall, spring and summer.
(1 cr.)

**EENG 219L - Circuit Analysis Lab**

**Description**
Experiments illustrating material of course EENG 216.

**Prerequisites**
Concurrent with EENG 216

**When Offered**
Offered in fall and spring.
(1 cr.)

**EENG 315 - Electronics I: Basic Electronic Devices & Circuits**

**Description**
Devices and Basic Circuits: Introduction to Electronics, Operational Amplifiers, Diodes, Bipolar Junction Transistors (BJT's), Field Effect Transistors (FET's).

**Prerequisites**
EENG 216

**When Offered**
Offered in fall and spring.
(3 cr.)

**EENG 316 - Electronics II: Analog Circuits**

**Description**

**Prerequisites**
EENG 315, concurrent with EENG 319L.

**When Offered**
Offered in fall and spring.
(3 cr.)

**EENG 318 - VLSI Design**
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.

Prerequisites
EENG 210 and EENG 315

Hours
Two class periods and one three-hour lab period.

When Offered
Offered in fall and spring.

(3 cr.)

EENG 319L - Electronics Lab

Description
Experiments illustrating material of course EENG 316.

Prerequisites
Concurrent with EENG 316.

When Offered
Offered in fall and spring.

(1 cr.)

EENG 320 - Linear Systems Analysis

Description
Basic properties of signals and systems, stability, step and impulse response, linearity and time invariance properties, superposition integral, Fourier series and Fourier transform for discrete and continuous time signals and sampling theorem.

Prerequisites
EENG 216 and MACT 233

When Offered
Offered in fall and spring.

(3 cr.)

EENG 321 - Automatic Control

Description
Principles of closed-loop feedback control systems, block diagrams, signal graphs, state variable to solution of free and forced response of linear systems, general feedback theory, transfer functions of components, Eigen-Value problems, criteria for designs, systems study in the domains, Nyquist criterion, Routh criterion, root locus theory and compensation methods. Several experiments are conducted in the Control Lab to illustrate material covered in the course.

Prerequisites
EENG 320

When Offered
Offered in fall and spring.

(3 cr.)

EENG 341 - Electromagnetic Theory I
Description

Prerequisites
PHYS 112 and MACT 232

Cross-listed
Same as PHYS 316.

When Offered
Offered in fall and spring.

EENG 352 - Computer Organization and Assembly Language Programming

Description
Explaining the state of the art computer systems focusing on major components: CPU, I/O, and memory. In-depth discussion of the instructions set architecture of the MIPS microprocessors. This includes different types of assembly instructions doing basic arithmetic, data movement, decision making, and jumping. Discussing different performance matrices of microprocessors and how to measure and analyze performance and evaluate speedups. Going through basic computer arithmetic covering integer and floating point operations. Discussing I/O ports, I/O devices and controllers, DMA channels, priority interrupts. Also discussing different I/O technologies, such as magnetic disks, flash disks, and optical storage. It also discusses the latest trends in microprocessors design and programming (such as SIMD and MIMD).

Prerequisites
CSCE 110

Cross-listed
Same as CSCE 231.

When Offered
Offered in fall and spring.

EENG 360 - Power and Machines

Description
Power system components, Electromagnetic fundamentals and magnetic circuits theory, basic concepts and operating characteristics of transformers, AC machine fundamentals, equivalent circuit and operating characteristics of synchronous machines (generators and motors), theory of operation and basic concepts of induction motors, transmission line parameters, transmission line models and terminal characteristics, power system representation, fault analysis and protection system elements.

Prerequisites
EENG 216 and EENG 341

When Offered
Offered in fall and spring.

EENG 404L - Photonics and Optical Communication Laboratory

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.

Prerequisites
Concurrent with EENG 434.

**When Offered**
Offered occasionally.
(1 cr.)

**EENG 410 - Solid-State Devices**

**Description**
Theory of semiconductor surfaces, field effect transistors, application in static logic design, semiconductor sensors and transducers.

**Prerequisites**
Prerequisite: consent of instructor.

**When Offered**
Offered occasionally.
(3 cr.)

**EENG 413 - Testing of Digital Circuits**

**Description**

**Prerequisites**
EENG 210

**When Offered**
Offered occasionally.
(3 cr.)

**EENG 414 - High Level Digital ASIC Design Using CAD**

**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.

**Prerequisites**
EENG 315

**Hours**
Two class periods and one three-hour lab period.

**When Offered**
Offered occasionally.
(3 cr.)

**EENG 415 - Integrated Circuit Fabrication: Materials and Processes**

**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.

**Prerequisites**
EENG 316
When Offered
Offered occasionally.
(3 cr.)

EENG 416 - Advanced ASIC Design

Description
This course covers advanced topics related to netlist synthesis, place & route, timing verification, clock tree insertion, power grid distribution, floorplanning of cell-based ASIC design. Other advanced verification techniques topics related to the design automation flow will be covered. Students will design a standard cell library using Verilog for their project.

Prerequisites
EENG 414

When Offered
Offered occasionally.
(3 cr.)

EENG 420 - Fundamentals of Communications I

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.

Prerequisites
EENG 320, MACT 317 and ENGR 313, concurrent with EENG 439L.

When Offered
Offered in fall and spring.
(3 cr.)

EENG 421 - Fundamentals of Communications II

Description
Fundamentals of Digital Communications. Geometric Representation of Signals; Binary and M-ary Modulation and their Performance Analysis and Spectral Efficiency M-ary baseband transmission. Introduction to Information Theory and Source and Channel Coding; Block and convolutional codes. Introduction to Spread-spectrum communications and discrete multitone (DMT). Several experiments are conducted in the Communication Lab to illustrate the material covered in the course.

Prerequisites
EENG 420

When Offered
Offered in fall and spring.
(3 cr.)

EENG 432 - Computer Communication Networks

Description
Practical and theoretical issues related to networking. Topics cover introduction to computer network architecture, OSI model, relevant protocols including data link layer, network layer and transport layer protocols, the ISDN network, the SS7 protocol, high-speed networks including BISDN, and ATM, congestion and control algorithms, quality of service guarantees for throughput and delay. Internet protocol IP, transport layer protocols TCP and UDP, routing and
Ethernet, queuing and error correction. Local and wide area networks.

**Prerequisites**
EENG 420.

**When Offered**
Offered in fall and spring.

(3 cr.)

**EENG 433 - Telecommunications Systems**

**Description**

**Prerequisites**
EENG 420 and EENG 432

**When Offered**
Offered occasionally.

(3 cr.)

**EENG 434 - Optical Communication Systems**

**Description**

**Prerequisites**
EENG 341 and PHYS 214, concurrent with EENG 404L.

**When Offered**
Offered occasionally.

(3 cr.)

**EENG 436 - Mobile Communication Systems**

**Description**

**Prerequisites**
EENG 421 and EENG 432

**When Offered**
Offered occasionally.

(3 cr.)

**EENG 439L - Communications Lab**

**Description**
Experiments illustrating material of course EENG 420.

**Prerequisites**
Concurrent with EENG 420

**When Offered**
Offered in fall and spring.
(1 cr.)

**EENG 442 - Electromagnetic Waves**

**Description**

**Prerequisites**
EENG 341

**When Offered**
Offered in fall and spring.
(3 cr.)

**EENG 447 - Microwave Systems**

**Description**

**Prerequisites**
EENG 442

**When Offered**
Offered occasionally.
(3 cr.)

**EENG 453 - Microcontroller System Design**

**Description**
Microcontroller architecture (Pic, Motorola 68HC11). Interrupts, serial and parallel Input/Output, Timers, Analog-to-Digital and Digital-to-Analog conversion, Watchdog timers, I/O expansion. Interfacing to keypads and display devices, AC control, Introduction to RISC AND CISC.

**Prerequisites**
EENG 210, EENG 316, EENG 352 and concurrent with EENG 459L.

**When Offered**
Offered in fall and spring.
(3 cr.)

**EENG 455 - Computer Architecture**

**Description**
The objectives of this course are to introduce the principles of Modern Computer Architecture and design. Topics to be discussed include Instruction Set Architectures, Arithmetic Logic Unit design, CPU data path design, CPU pipelining, memory hierarchy, cache and virtual memory, and introduction to I/O.

**Prerequisites**
EENG 210, EENG 352 concurrent with EENG 458L.

**Cross-listed**
Same as CSCE 330.

When Offered
Offered in fall and spring.
(3 cr.)

EENG 456 - Digital Control Systems

Description
Advantages of using PLCs in industrial automation, Basic components of a PLC, Interfacing sensors and actuators to PLCs, Programming of PLCs by ladder logic, Internal markers, Timers, Counters, Conditional jumps and Master Control function, PLC program design, PLC program development for control applications, Advanced Sequential Control Techniques, Data handling instructions, A/D and D/A PLC modules, Basic elements of DCS, Differences between DCS and SCADA, Foundation Field bus and Profibus.

Prerequisites
Prerequisite: EENG 210 and EENG 321 (for EENG students); PHYS 319 and MENG 476 (for MENG students).

When Offered
Offered occasionally.
(3 cr.)

EENG 458L - Computer Architecture Lab

Description
The laboratory will cover experiments in computer architecture and hardware design and experiments illustrating material of Course EENG 455.

Prerequisites
Concurrent with EENG 455

Cross-listed
Same as CSCE 339L.

When Offered
Offered in fall and spring.
(1 cr.)

EENG 459L - Microcontroller System Design Lab

Description
Experiments illustrating material of course EENG 453.

Prerequisites
Concurrent with EENG 453

When Offered
Offered in fall and spring.
(1 cr.)

EENG 460 - Product Design and Development

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.

**Prerequisites**
Senior level standing.
(3 cr.)

**EENG 480 - Special Problems in Electronics Engineering**

**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.

**Prerequisites**
Prerequisite: consent of instructor

**When Offered**
Offered in fall and spring.

**Repeatable**
May be repeated for credit if content changes.
(1-3 cr.)

**EENG 490 - Senior Project I**

**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.

**Prerequisites**
Prerequisite: senior standing.

**When Offered**
Offered in fall and spring.
(1 cr.)

**EENG 491 - Senior Project II**

**Description**
A continuation of the capstone project.

**Prerequisites**
EENG 490

**When Offered**
Offered in fall and spring.
(2 cr.)

**EENG 494 - Selected topics in Electronics Engineering**

**Description**
Course content will be selected each semester from current developments in the field of electronics engineering.

**Prerequisites**
Prerequisite: senior standing.

**When Offered**
Offered occasionally

(3 cr.)

**EENG 497 - Industrial Internship**

**Description**
Each student is required to be trained for 15 hours in the Mechanical Engineering workshops to study the fundamentals of manufacturing processes (forming, welding and machining). Each student is also 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.

**Prerequisites**
Prerequisite: completion of 100 credit hours.

**When Offered**
Offered in fall and spring.

(1 cr.)

**EENG 510 - Advanced Solid-State Devices**

**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.

**Prerequisites**
Graduate standing in engineering and physics. Electromagnetics, vector algebra, differential equations, and MATLAB programming.

**Cross-listed**
Same as NANO 561.

(3 cr.)

**EENG 516 - Analog Integrated Circuit Design**

**Description**

**Prerequisites**
EENG 316

(3 cr.)

**EENG 517 - Digital Integrated Circuit Design**

**Description**
This course provides an introduction to the design of digital integrated circuits. Topics covered include: (1) The Diode (DC and Dynamic Behavior), (2) The MOSFET (DC and Dynamic Behavior as well as short channel effects), (3) The CMOS inverter (Static and Dynamic Behavior - Power/Speed Tradeoffs), (4) 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) and Low Power Circuit Techniques.
Prerequisites
EENG 315 and EENG 316
(3 cr.)

EENG 518 - Advanced Integrated Circuit Design

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.

Prerequisites
EENG 318
Cross-listed
Same as NANO 562.
(3 cr.)

EENG 520 - Advanced Digital Communications

Description
Digital communications over noisy and dispersive channels. Topics covered include digital modulation over band-limited channels and Inter-Symbol Interference (ISI); partial-response signaling; continuous-phase modulation; pulse shaping; flat fading channels; time- and frequency domain equalization. Implementation complexity will be discussed and a simulation project is included.

Prerequisites
EENG 421 or equivalent.
(3 cr.)

EENG 521 - Wireless Communication Systems

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.

Prerequisites
EENG 421 or equivalent.
(3 cr.)

EENG 522 - Stochastic Processes for Engineers

Description
Probability and stochastic processes with engineering applications. Topics include review of probability and sampling methods; modeling of random experiments; linear and nonlinear transformations of random vectors; discrete-time and continuous-time random processes including Markov processes; spectral analysis of random signals; estimation theory including Wiener and Kalman filtering. A simulation project on selected applications will be given.

Prerequisites
MACT 317 or equivalent.
(3 cr.)
EENG 524 - Enabling Technologies for High Data Rate Communications

Description
Enabling techniques for high data rate wireless communication systems. Topics include MIMO and space-time coding; multicarrier modulation, OFDM, OFDMA, and SC-FDMA; interference suppression; current and emerging topics 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.

Prerequisites
EENG 421 or equivalent.
(3 cr.)

EENG 525 - Digital Signal Processing

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.

Prerequisites
EENG 320 or equivalent.
(3 cr.)

EENG 526 - Information Theory and Coding

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.

Prerequisites
EENG 421 or equivalent.
(3 cr.)

EENG 530 - Advanced Computer Networks

Description
Advanced computer communication networks. Topics covered include internet architecture and protocols, queuing delay in network devices, queuing theory, Markov chains, analysis of M/M/1, M/M/m, M/M/m/m, and M/G/1 queues, multi-dimensional Markov Chains, Wireless Local Area Networks (WLANs), mobile ad hoc networks (MANETs), and wireless sensor networks (WSNs).

Prerequisites
EENG 432 or equivalent.
(3 cr.)

EENG 541 - Microwave Circuit Analysis and Design
Description
Microwave circuit theory and techniques. Emphasis on microwave integrated circuits (MIC) and waveguides. Planar transmission lines. Transmission line theory, impedance, scattering and transmission parameters, Smith chart, impedance matching, power dividers and couplers, active two port networks, devices for microwave amplification. Low noise amplifier design, and power amplifier design.

Prerequisites
EENG 442 or equivalent.
(3 cr.)

EENG 547 - RF and Microwave Systems

Description
The purpose of this class is to introduce students to the general hardware components, system parameters, and architectures of RF and microwave wireless systems. Practical examples of components and system configurations are emphasized. Communication systems are used to illustrate the applications. This class will help bridge the gap between RF/microwave engineers and communication system engineers. At the end of the class, students will be able to design basic RF transceiver systems and allocate requirements to RF units from which these systems are composed.

Prerequisites
EENG 442 or equivalent.
(3 cr.)

EENG 548 - RF Integrated Circuit Design

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.

Prerequisites
EENG 442 or equivalent.
(3 cr.)

EENG 549 - Antennas Design and Applications

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.

Prerequisites
EENG 442 or equivalent.
(3 cr.)

EENG 553 - Fault-tolerant Computing and Reliability Modeling

Description
Faults, errors, fault modeling, redundancy techniques, error detecting and correcting codes, self-checking circuits, reliability and availability modeling, performability.

Prerequisites
EENG 453
(3 cr.)

EENG 556 - Networked Control Systems Design & Applications

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.

Prerequisites
EENG 321 and EENG 432

Cross-listed
Same as RCSS 534.
(3 cr.)

EENG 570 - New Product Design and Development

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.

(3 cr.)

EENG 571 - Technology and Innovation Management

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.

Cross-listed
Same as MGMT 517.
(3 cr.)

EENG 572 - Strategic Management of Innovation

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.

Cross-listed
**EENG 573 - Entrepreneurship and Innovation**

**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.

**Cross-listed**
Same as MGMT 510
(3 cr.)

**EENG 580 - Graduate Independent Study**

(1-3 cr.)

**EENG 590 - Thesis Seminar I**

(1 cr.)

**EENG 591 - Thesis Seminar II**

(2 cr.)

**EENG 594 - Advanced Topics in Electronics Engineering**

(3 cr.)

**EENG 599 - Thesis**

**EENG 622 - Advanced Topics in Wireless Communications**

**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.
Prerequisites
EENG 521
(3 cr.)

EENG 625 - Detection, Classification, and Estimation Theory

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.

Prerequisites
EENG 522
(3 cr.)

EENG 661 - Nanoscale CMOS

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.

(3 cr.)

EENG 699 - Research Guidance Dissertation

Description
Consultation on problems related to student thesis. To be taken 11 times for credit.

(3 cr.)

EGPT 199 - Selected Topic for the Core Curriculum

Description
Course addressing broad intellectual concerns and accessible to all first-year students as part of the Primary Level Core.

(3 cr.)

EGPT 202 - Ancient Egypt

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.
(3 cr.)

**EGPT 203 - Introduction to Egyptian Architecture**

**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.

**Prerequisites**
Only open to declared architecture majors and Egyptology majors.
(3 cr.)

**EGPT 204 - Archaeology: Methods and Theories**

**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.
(3 cr.)

**EGPT 250 - Ancient Egyptian Literature in Translation**

**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.

**When Offered**
Offered occasionally.
(3 cr.)

**EGPT 253 - Hieroglyphics I**

**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.
(3 cr.)

**EGPT 254 - Hieroglyphics II**

**Description**
The course is a continuation of EGPT 253. Students will concentrate on the verbal forms of classical Egyptian.

**Prerequisites**
EGPT 253
When Offered
Offered in spring.
(3 cr.)

EGPT 299 - Selected Topic for Core Curriculum

Description
Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

Prerequisites
RHET 101

When Offered
Offered occasionally.
(3 cr.)

EGPT 301 - Temples, Tombs and Hieroglyphs

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.
(3 cr.)

EGPT 304 - Culture and Society of Ancient Egypt

Description
The course identifies the basic structure of ancient Egyptian society and culture, and places special emphasis upon the interaction of economics, social organization, environment, law, politics, and religion.

Prerequisites
EGPT/HIST 243, 244, EGPT 261 or 262.

When Offered
Offered occasionally.
(3 cr.)

EGPT 341 - Egypt in the Late Period

Description
The course will examine the factors that lay behind the collapse of the New Kingdom state and the rise of the Libyan and Nubian dynasties that dominated Egypt from 1200 to 332 BC. Special attention will be devoted to the last dynasties of the Pharaonic tradition (Dynasties XXI-XXX).

Prerequisites
EGPT 343 and EGPT 344, or instructor's consent.

When Offered
Offered occasionally.
(3 cr.)
EGPT 342 - History of Egypt in the Graeco-Roman Era

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.

Prerequisites
EGPT 343 and EGPT 344, or instructor's consent.

Cross-listed
Same as HIST 342.

When Offered
Offered occasionally.

(3 cr.)

EGPT 343 - History of Ancient Egypt I: Pre-Dynastic Through Middle Kingdom Egypt

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 sources 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.

(3 cr.)

EGPT 344 - History of Ancient Egypt II: Middle Kingdom through Ptolemaic Egypt

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.

(3 cr.)

EGPT 346 - Societies and Culture of the Ancient Near East

Description
The course constitutes a historical overview of the societies and cultures of Egypt, the Mediterranean world and the Middle East, from the emergence of urban society in Iraq in the fourth millennium BC to the rise and fall of the great empires of Babylon, Assyria, the Hitties, Achaemenid Persia, Greece and Rome. Special attention will be paid to the position of Ancient Egyptian civilization within the wider context of Ancient Near Eastern history.

Prerequisites
EGPT 342 and EGPT 343, or instructor's consent.

Cross-listed
Same as HIST 346.

**EGPT 348 - Societies and Cultures of Ancient Nubia**

**Description**
The course will survey the emergence of food-producing societies in Nubia and the Sudan from 6000 BC, and will examine the development of Nubian civilization from the Kerma culture and the kingdoms of Kush and Meröe to the advent of Islam. Special attention will be devoted to the interaction between Egyptian and Nubian civilizations.

**Prerequisites**
Prerequisite: consent of instructor.

**When Offered**
Offered occasionally.
(3 cr.)

**EGPT 353 - Hieroglyphics III**

**Description**
Students will read a number of Egyptian texts and learn how to translate and interpret written documents.

**Prerequisites**
EGPT 254

**When Offered**
Offered every fall.
(3 cr.)

**EGPT 361 - Art and Architecture of Ancient Egypt I**

**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 analyzing Egyptian art. There will be field-trips to the museum and to Giza and Saqqara during the semester.

**Prerequisites**
EGPT 202 or consent of instructor.

**When Offered**
Offered in fall.
(3 cr.)

**EGPT 362 - Art and Architecture of Ancient Egypt II**

**Description**
The course covers the period between 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.

**Prerequisites**
EGPT 202 or consent of instructor.
**EGPT 400 - Introduction to Coptic**

**Description**
Coptic represents the last stage of the ancient Egyptian language. The course will include reading of selected texts in two Coptic dialects.

**Prerequisites**
EGPT 254

**When Offered**
Offered in spring.

**EGPT 401 - Introduction to Hieratic**

**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.

**Prerequisites**
EGPT 254

**When Offered**
Offered occasionally.

**EGPT 402 - Hieroglyphics IV**

**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.

**Prerequisites**
EGPT 353.

**Cross-listed**
Same as EGPT 501.

**When Offered**
Offered in spring.

**EGPT 403 - Independent Study in Egyptology**

**Description**
Independent research projects in Egyptology, with consent of instructor and student's adviser.

**When Offered**
Offered every semester.

**EGPT 440 - Ancient Egyptian Religion and Ethics**
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.

Prerequisites
Prerequisite: instructor's permission.

When Offered
Offered occasionally.

(3 cr.)

EGPT 445 - Selected Topics in Coptic Studies

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.

Cross-listed
Same as ARIC ANTH, HIST, SOC 445 and EGPT 539.

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.

(3 cr.)

EGPT 459 - Selected Topics in Cultural Resource Management and Museology

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.

Prerequisites
Prerequisite: consent of instructor.

Cross-listed
Same as EGPT 545.

When Offered
Offered occasionally.

(3 cr.)

EGPT 491 - Field Work in Egyptological Method and Theory

Description
Preference will be given to majors in Egyptology, anthropology, archaeology. 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.

Prerequisites
Permission of instructor.
Cross-listed
Same as EGPT 591.
(3 cr.)

**EGPT 499 - Selected Topics in Egyptology**

**Prerequisites**
Prerequisites: junior standing and/or consent of instructor.

**When Offered**
Offered occasionally.

**Repeatable**
May be repeated for credit when content changes.
(3 cr.)

**EGPT 500 - Hieroglyphics III**

**Description**
Students will read a number of Egyptian texts and learn how to translate and interpret written documents.

**Prerequisites**
EGPT 254 or equivalent.

**When Offered**
Offered every fall.
(3 cr.)

**EGPT 501 - Hieroglyphics IV**

**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 Cairo Museum.

**Prerequisites**
Hieroglyphics I-III or equivalent

**Cross-listed**
Same as EGPT 402.

**When Offered**
Offered in spring.
(3 cr.)

**EGPT 502 - Introduction to Demotic**

**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.
Prerequisites
Equivalency to advanced hieroglyphs.
(3 cr.)

EGPT 503 - Introduction to Ptolemaic Hieroglyphs

Description
Ptolemaic Hieroglyphs are mostly used for historic or religious texts of the Greco-Roman Period. Although the hieroglyphic signs are mostly known, the scribes assign different phonetic values to them based on a different system that needs to be understood and practiced. Religious texts in the Greco Roman Period are written in a more elaborate manner, with more details and explanatory glosses and are, therefore very important for a better understanding of Ancient Egyptian religion and its development across time.

Prerequisites
EGPT 253 EGPT 254 or equivalent.
(3 cr.)

EGPT 504 - Advanced Hieratic

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.

Prerequisites
EGPT 401 or equivalent.
(3 cr.)

EGPT 505 - Introduction to Coptic

Description
Coptic represents the last stage of the ancient Egyptian language. The course will include reading of selected texts in two Coptic dialects.

Prerequisites
EGPT 254 or basic hieroglyphs.
Cross-listed
Same as EGPT 400.

When Offered
Offered occasionally.
(3 cr.)

EGPT 506 - Advanced Coptic Texts

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.
Prerequisites
Basic Coptic.
(3 cr.)

EGPT 510 - Culture and Society of Ancient Egypt

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.

Prerequisites
Consent of instructor.
(3 cr.)

EGPT 512 - Art, Societies, and Cultures of the Ancient Near East

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.

Prerequisites
Consent of instructor.
(3 cr.)

EGPT 519 - Selected Topics in Ancient Egyptian Art and Culture

Description
The topic of this course changes regularly and can be taken more than once. The subject matter chosen for the course can be any aspect of ancient Egyptian art, architecture, and culture.

Prerequisites
Consent of instructor.
(3 cr.)

EGPT 521 - Societies and Cultures of Ancient Nubia

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 Nile).
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.

**Prerequisites**
Consent of instructor.
(3 cr.)

**EGPT 522 - Ancient Egyptian Religion and Ethics**

**Description**
This course will investigate ancient Egyptian religious beliefs and practices, their origin, and development. The great mythic Solar Cycle of creation and Osirian Cycle of betrayal and revenge, death and rebirth are discussed, as well as the place of the myriad local and minor Gods and Goddesses within Egyptian mythology. The interaction of sacred and secular in Egyptian society is considered through the nature of divine kingship, large temple institutions, and funerary foundations. The relationship between the state cults and private worship by noble and commoner is explored, and the nature and potency of ancient Egyptian magic and curses investigated. The nature and development of Egyptian funerary beliefs are also detailed.

**Prerequisites**
Consent of instructor.
(3 cr.)

**EGPT 525 - Settlement and Daily Life in Ancient Egypt**

**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.

(3 cr.)

**EGPT 526 - Death and Burial in Ancient Egypt**

**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.

**Prerequisites**
Consent of instructor.
(3 cr.)

**EGPT 530 - Graeco-Roman Egypt**
Description
This course will explore the history of Egypt in the Graeco-Roman period and the momentous confrontation between Greek and Egyptian culture between 300 BC and 700 AD.

Prerequisites
Consent of instructor.
(3 cr.)

EGPT 531 - The Romano-Byzantine World and Egypt

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.

Prerequisites
Consent of the instructor.
(3 cr.)

EGPT 532 - Classical Art and Archaeology

Description
This course examines the techniques and methods of Classical Archaeology as revealed through an examination of the major monuments and artefacts of the Greek and Roman world from Prehistory to the Late Empire. Architecture, sculpture, fresco painting, and the minor arts are examined at such sights as Mycenae, Olympia, Athens, Pompeii, and Rome.
(3 cr.)

EGPT 533 - Coptic Art and Architecture

Description
A course designed to introduce students to Coptic art and architecture, with an emphasis on monasticism. Field trips are required.

Prerequisites
Consent of the instructor.
(3 cr.)

EGPT 539 - Selected Topics in Coptic Studies

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.

Students in these majors may petition preferably before registration to have the course included in their major requirements.

Cross-listed
Same as ARIC ANTH, HIST, SOC 445, EGPT 445.
(3 cr.)
EGPT 540 - Advanced Method and Theory: Archaeological and Historical

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.

Prerequisites
Consent of instructor.
(3 cr.)

EGPT 541 - Material Culture: Looking at Artifacts in Context

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.

Prerequisites
Consent of instructor.
(3 cr.)

EGPT 542 - Site Analysis

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.

Prerequisites
Consent of instructor.
(3 cr.)

EGPT 545 - Selected Topics in Cultural Resource Management and Museology

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.

Prerequisites
Consent of instructor.
Cross-listed
Same as EGPT 459.
When Offered
Offered occasionally.
(3 cr.)

**EGPT 560 - The Iconography of Ancient Egypt**

**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.

**Prerequisites**
A course in Egyptian art.
(3 cr.)

**EGPT 561 - Advanced Readings in Ancient Egyptian religion Texts**

**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.

**Prerequisites**
EGPT 253 EGPT 254 EGPT 500 EGPT 501
(3 cr.)

**EGPT 562 - Advanced Readings in historical literature from the Old Kingdom to the Late period**

**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.

**Prerequisites**
EGPT 253 EGPT 254 EGPT 500 EGPT 501
(3 cr.)

**EGPT 591 - Field Work in Egyptological Method and Theory**

**Description**
Preference will be given to majors in Egyptology. Field-work may take the form of epigraphy, excavation, survey, or museum work. Inquiries concerning the course must be made no fewer than seven months prior to the start of the summer semester.

**Prerequisites**
Permission of instructor.
Cross-listed
same as EGPT 491.
(3 cr.)

EGPT 598 - Research Seminar: Research Design and Writing

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.

Prerequisites
Consent of instructor.
(3 cr.)

EGPT 599 - Thesis

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.

Prerequisites
Completion of required coursework.
(3 cr.)

EMBA 601 - Change Management and Global Transformation

Description
This module focuses on planning, implementing and managing change in a fast-changing dynamic environment of today. It assists executives to understand challenges, tools, and burdens associated with initializing and implementing major changes in the organization. It addresses change efforts, reconstructing and reengineering and organizational adaptation decisions and developing action plans for making smooth transformation process and preventing resistance to change from employees and providing effective leadership of people in the organization.

(1.75 cr.)

EMBA 602 - Team-work & Communication

Description
The module focuses on team building and growth, performance, 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. It aims at improving participants’ ability to lead high-performing teams through effective design and development. They will gain in-depth knowledge of practices of successful teamwork and will examine why other teams fail to deliver their expected results. They will learn how organizations can encourage innovation, strategic decision-making, and co-operation with other organizations through the use of teams and effective communication.

(1.75 cr.)

EMBA 603 - Data Analysis and Analytical Decision Modeling for Optimizing Decisions
Description
This module focuses on exploring the use of sample data, survey, regression analysis, decision models and statistical methods for estimating, predicting, and forecasting and making business decision. It will also include applications to total quality management, polling, employee attitude surveys, market research, operation and finance. It improves participants modeling skills, which are the key to success. Participants learn about weaknesses and strengths of quantitative models. It provides them with a reality check on the forecasts, enables ‘what if’ analysis and provides an integrated view of business, and is a key step in valuation.

(2 cr.)

**EMBA 604 - Managerial Economics**

Description
This module covers the basics of microeconomics (supply, demand, market price and output, production, cost and market equilibrium) and the international macroeconomics and monetary environment within which business operate. It provides intensive overview of economic analysis of firms, industries, markets, forms of competition, role of industry structure, the influence of government policies. It provides framework that participants use to understand the performance of international economies and financial markets, linkage among countries through trade, exchange rates and the balance of payment, business cycles and rescissions, inflation and deflation, and the effects of the governments’ macroeconomic policies.

(1.75 cr.)

**EMBA 605 - Strategic Accounting**

Description
The module addresses corporate financial reports as an important means of communication with investors and with managers in making tactical and strategic decisions. It focuses on the development, analysis and use of these reports and what assumptions and concepts accountants use to prepare them, and why they use those assumptions and concepts. It introduces basic costs concepts and develops techniques such as cost drivers, activity-based accounting, customer profitability, value-add and values chain analysis, and target costing. Other topics may include mergers and acquisitions, purchase and pooling, free cash flow and financial statement analysis, studies the nature, design and decision-facilitating role of cost systems and focuses on the effects of strategy, technology and the environment on cost system designs. Tools such as budgets, variance analysis, benchmarking, transfer pricing and balanced scorecard are used to illustrate planning, control and performance measurement systems that facilitate successful implementation of organization’s strategies.

(1.75 cr.)

**EMBA 606 - Financial Management**

Description
It introduces the basic principles of finance. It addresses topics as discounting techniques and applications, evaluation of capital expenditure, estimating cost of capital, bond and stock valuation and investment decisions under uncertainty. Participants are expected by the end of this module to apply basic valuation formulas to standard financial instruments.

(2 cr.)

**EMBA 607 - Corporate Financial Management**

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.

(1.75 cr.)

**EMBA 608 - Talent Management, Coaching & Mentoring**

**Description**
The act of management is all about amplifying the human capability of an organization. This module addresses the people side of business from a general management perspective. Within the context of newer thinking in "Talent management and Organizational Performance", the module integrates concepts from strategy, organizational behavior, talent management, motivation, incentives, empowerment, leadership, organizational design, and transformation. It assist the participants in developing a deeper understanding of how human capability (talent) can be amplified or dampened by the enabling or disabling attributes of the intangible assets of a company (structure, leadership, culture, information, networks, beliefs, values, and reward systems); and it equips the participants with management practices, approaches and coaching and mentoring skills, that can be employed to optimize the various inter-related levers of talent and organizational performance.

(1.75 cr.)

**EMBA 609 - Managerial Decision Making and Operation Management**

**Description**
This module introduces operation from the general managers’ point of view rather than operation specialist. It approaches the integration, efficiency and effectiveness of managerial functions in support of development of the organization’s strategic goals, improving business decisions and achieving competitive advantage. It discusses operating systems: production process, process design and flow analysis, inventory concepts and models, time-to-market and responsiveness, project management, effects of uncertainty and waiting lines in producing an organization’s products and services. It focuses on quality management and statistical quality controls, as well as recent process-improvement ideas. Case studies are used to highlight central issues.

(2 cr.)

**EMBA 610 - Global Marketing Management (International Live-in Module)**

**Description**
The module examines strategies over the product lifecycle including growth strategies for mature and declining markets, and defensive strategies. It addresses the importance of companies being market-driven and customer focused and presents current theories and practices of marketing management. Participants will be able to have an integrative strategic view of marketing, including the impact of globalization, information technologies and challenges to implement them.

(2.75 cr.)

**EMBA 611 - Competitive & Corporate Strategy (International Live-in Module)**

**Description**
Corporate Strategy focuses on business policy by a firm and the development and implementation of a business strategy that will allow the firm to achieve its goals and objectives. Achieving these goals and objectives usually occurs within a competitive context, in which other rival organizations seek similar if not the same ends (e.g. market share, profits, control of scarce resources, etc.). How a firm stands against its rivals’ attempts and how it develops and
implements a competitive strategy. Topics include industry analysis and competitive advantage as it derives from the firm’s strategic investments, resources allocation, and organizational coalitions.

(2.75 cr.)

**EMBA 612 - E- Business & Managers' Toolkit**

**Description**
The module examines application of information resources and technology in organizations. The objective is to familiarize participants with key concepts in the use and management of Information Technology (IT). Topics covered include selected aspects of hardware, software, organizing data and information, telecommunication, electronic commerce, transaction processing systems, decision support systems, business intelligence systems and systems development. Participants will learn how do information technologies create value and affect the structure of competition.

(2 cr.)

**EMBA 613 - Leadership & Management**

**Description**
The leadership module moves participants to a deeper understanding of their leadership competencies and personality style through further analysis of assessments with Center for Creative Learning (CCL) coach. 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.

(1.75 cr.)

**EMBA 614 - Innovation and Creating the Best Practices of Tomorrow**

**Description**
It explores a broader, more inclusive view of innovation, enabling the manager to employ innovation as a more effective competitive weapon, leading to an understanding of state-of-the-art "Innovation Process Management” within and between firms and across geographies. It addresses how to make creative energy the goal of the organization and energizes the staff to be creative and see problems not as obstacles but as opportunities for innovation.

(1.75 cr.)

**EMBA 615 - Global Supply Chain Management and Operational Excellence**

**Description**
This module is about supply chain management from suppliers to customers to clients, how to link it with marketing and business strategy and develop Global Business Networks. It addresses operational excellence as a competitive strategy, customer service versus operational efficiency from “built-to-forecast” to “build-to-order” and behavioral operational management

(2 cr.)

**EMBA 616 - Negotiation & Conflict Management**
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).

(1.75 cr.)

EMBA 617 - Entrepreneurial Management

Description
It covers the challenges involved in managing entrepreneurial ventures, whether they are start-ups, small entrepreneurial firm or units within larger, well-established companies. It focuses on the behaviors and attributes required to operate successfully within entrepreneurial environment. The module addresses the concepts, theory of practice of entrepreneurship in a dynamic international environment. It helps participants to understand the risks and rewards that accompany entrepreneurial activities and develop the skills of leadership while enhancing their own practice.

(1.75 cr.)

EMBA 618 - Doing Business With The East (International Live-in Module)

Description
The module is live-in week in Hong Kong. Participants will be prepared for new challenges and opportunities that they will face in the business world, especially in China and Asia. The modules include introduction to Asia/China Business, Economic, social and political environments. Emphasis will be on China’s current Economy Development, Change in Business environment and managing in a Chinese context.

(2.75 cr.)

EMBA 619 - Doing Business With The East (International Live-in Module)

Description
The module will be a continuation of above topic. There will be an overview about the Legal and Regulatory issues, managing Joint-Venture Partnerships, Entry strategies, Marketing and Human Resources challenges in China. Practical cases on Legal and Regulatory issues and on Successful Negotiation in China will be studies. Participants will be able to visit companies during their study.

(2.75 cr.)

EMBA 620 - Corporate Governance & Social Responsibility

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.

(2 cr.)
EMBA 621 - Business & Legal Environment

Description
This module relates business 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 familiarizes participants with certain basic legal concepts relating to doing business on national and international levels.

(1.75 cr.)

EMBA 622 - Development & Rationale for Competitive Law

Description
This module looks at how competition law fits in a larger context of economic policy. It covers the development and rationale for international competition law for firms, with reference to developing countries’ competition law as well as relevant provisions in the Egyptian competition policy and covers agreements between firms (cartels, joint ventures, mergers), monopolization, and public enforcement of law by competition authorities, private enforcement in the courts and the coordination of private and public enforcement.

(1.75 cr.)

EMBA 623 - Adapting to Global Environment - Integration Consultation Project

Description
Participants undertake a successful “consulting” project within their own organization, identifying a challenge or an opportunity they seek to address and undertaking the appropriate analysis leading to a recommended course of action. Participants are encouraged to apply and integrate several analytical tools and organizational skills learned in various courses of the program. It provides concrete tools and concepts for projects management. The module is taught in an interactive case-based format. Participants are expected to actively participate while providing insights from their own experiences with project management. Participants will understand why many projects fail, know the critical success factors, be able to define and analyze work breakdown structures and critical paths for projects, and understand the impact of uncertainty on project management.

(4 cr.)

ENGL 100 - Academic English for Freshmen

Description
English 100 is a concurrent course in which classes meet five days a week for a total of fifteen hours. A student who for any reason misses thirty-six hours (12 days) will be dropped from the course. A student who is dropped will be allowed to retake the course the following semester. 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. Freshmen taking English 100 may enroll in no more than two academic with a maximum of 7 academic course credits. Any student who withdraws from English 100 must withdraw from the two other academic.

For new students, placement in academic English for freshmen is determined by their score on the ELPET or TOEFL with TWE. For students enrolled in the intensive English program, placement in Academic English for Freshmen is determined by their score on the IEP exit test.

All students who have been admitted into ENGL 100 must satisfactorily complete the course work within a time period not to exceed two full semesters and a summer session. Students taking ENGL 100 in summer may not enroll in any academic.
ENGL 199 - Selected Topic for Core Curriculum

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 100.

(3 cr.)

ENGR 101 - Introduction to Engineering

Description

When Offered
Offered in fall and spring.

Notes
The course must be taken in the year of admission to the engineering program.

(1 cr.)

ENGR 115 - Descriptive Geometry and Engineering Drawing

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.

(2 cr.)

ENGR 212 - Engineering Mechanics I (Statics)

Description

Prerequisites
MACT 132 and PHYS 111

When Offered
Offered in fall and spring.

(3 cr.)

ENGR 214 - Engineering Mechanics II (Dynamics)

Description
Kinematics and kinetics of a particle, system of particles, and rigid bodies. Energy and momentum methods. Engineering applications.

Prerequisites
MACT 231 and ENGR 212

**When Offered**
Offered in fall and spring.

(3 cr.)

**ENGR 229 - Strength and Testing of Materials**

**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.

**Prerequisites**
ENGR 212

**Hours**
Three class periods and one three-hour lab period

**When Offered**
Offered in fall and spring.

(4 cr.)

**ENGR 261 - Fundamentals of Fluid Mechanics**

**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.

**Prerequisites**
PHYS 112 and ENGR 214

**Hours**
Two class periods and one three-hour lab period.

**When Offered**
Offered in fall and spring.

(3 cr.)

**ENGR 313 - Engineering Analysis and Computation I**

**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.

**Prerequisites**
CSCE 106 and MACT 233

**When Offered**
Offered in fall and spring.

(3 cr.)

**ENGR 318 - General Electrical Engineering**

**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.
Prerequisites
PHYS 112 and MACT 231

When Offered
Offered in fall and spring.
(3 cr.)

ENGR 345 - Engineering Economy

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, depreciation and B.E. analysis. Introduction to risk analysis.

Prerequisites
MACT 132

When Offered
Offered in fall and spring.
(3 cr.)

ENGR 364 - Fundamentals of Thermofluids

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 convection heat transfer.

Prerequisites
PHYS 111. Open for Electronics Engineering major only.

When Offered
Offered in fall.
(3 cr.)

ENGR 494 - Entrepreneurial Development and Innovation

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.

(3 cr.)

ENGR 511 - Computational Methods in Engineering

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.

(3 cr.)

**ENGR 512 - Experimental Methods in Engineering**

*Description*

(3 cr.)

**ENGR 516 - Engineering for a Sustainable Environment**

*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.

(3 cr.)

**ENGR 518 - Engineering Statistics**

*Description*
Probability distributions, sampling distributions, estimation, test of hypotheses, regression, correlation, and nonparametric statistics.

(3 cr.)

**ENGR 590 - Graduate Thesis Seminar I**

*Description*
Seminars on research topics, research methodology and thesis writing, and presentations given by invited speakers. 

*Cross-listed*
Same as RCSS 590.

(2 cr.)

**ENGR 591 - Graduate Thesis Seminar II**

*Description*
Seminars on research topics given by invited speakers and on research plans given by students to discuss their thesis topics and the results they obtained in their work.

*Prerequisites*
ENGR 590

*Cross-listed*
Same as RCSS 591.

(1 cr.)

**ENTR 203 - Introduction to Entrepreneurship and Small Business Management**

*Description*
This course is designed to provide the student with an introduction to the concept of entrepreneurship as well as the specificities of managing a small business compared to a large one. The student will develop a general understanding of
entrepreneurship as an economic activity and the role it plays as a catalyst of economic growth and social development. The personal traits and behaviors, and the organizational characteristics associated with successful entrepreneurship will be analyzed and discussed. The student will also be introduced to different organizational aspects and managerial activities related to launching and managing a small business.

(3 cr.)

**ENTR 303 - Principles of Entrepreneurial Finance**

**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.

(3 cr.)

**ENTR 413 - Entrepreneurship and Innovation**

**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.

(3 cr.)

**ENTR 417 - Entrepreneurship Lab: Developing and Launching a New Venture**

**Description**
Pre-Req: ENTR 203; MKTG 302; ENTR 303; ENTR 413

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.

**Prerequisites**
ENTR 203, MKTG 302, ENTR 303 and ENTR 413.

(3 cr.)

**ENVE 561 - Water Quality Control**

**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.

(3 cr.)

**ENVE 562 - Unit Operations in Environmental Engineering**
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 473 but with additional requirements for graduate students.
(3 cr.)

ENVE 564 - Air Pollution Control Engineering

Description
(3 cr.)

ENVE 565 - Air Pollution and Combustion

Description
Air pollution and combustion, combustion generated pollutants, greenhouse effect, fuel alternatives, effects of air pollution on health and vegetation, other forms of energy sources, technologies for emission reduction and control.
(3 cr.)

ENVE 566 - Solid and Hazardous Wastes Engineering

Description
Cross-listed
Same as CENG 475 but with additional requirements for graduate students.
(3 cr.)

ENVE 567 - Environmental Chemistry

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.
(3 cr.)

ENVE 568 - Noise Pollution Fundamentals, Measurements and Control

Description
Properties of sound waves in free fields and enclosures; effects of noise on people; quantitative measurement of noise characteristics and impact; noise reduction indoors and outdoors; noise control regulations.
(3 cr.)

ENVE 569 - Groundwater Hydrology and Contamination

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.
(3 cr.)

**ENVE 580 - Independent Study in Engineering**

**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).

(3 cr.)

**ENVE 592 - Advanced Topics in Engineering**

**Description**
Topics to be chosen every year according to specific interests.

**Prerequisites**
Prerequisite: consent of instructor.

**Repeatable**
May be taken for credit more than once if content changes.

(3 cr.)

**ENVE 599 - Research Guidance Thesis**

**Description**
Consultation on problems related to student thesis.

**Repeatable**
Must be taken twice for credit.

(3 cr.)

**ENVE 662 - Advanced Treatment Processes**

**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.

(3 cr.)

**ENVE 680 - Independent Study in Environmental Engineering**

**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.

(3 cr. Max.)

**ENVE 692 - Advanced Selected Topics in Environmental Engineering**
Description
Topics chosen according to special interests of faculty and students. May be repeated for credit more than once if content changes.

(3 cr.)

**ENVE 699 - Research Guidance Dissertation**

**Description**
Consultation on problems related to student thesis. To be taken 11 times for credit.

(3 cr.)

**EUST 504 - European Union Law**

**Description**
Introduction to the major institutions and decision making procedures of the European Union’s constitutional structure as well as the foundational doctrines and processes developed by the EU judicial system.

**Cross-listed**
Same as LAW 504.

(3 cr.)

**EUST 506 - Seminar on Practical Diplomacy (Arranged with European embassies and institutions)**

**Description**
This seminar is conducted with occasional seminar visits to local European embassies and institutions. In-class work includes study of local and international diplomatic processes, student presentations, and a final paper. All students prepare for visits and write reports. Students must be prepared to leave AUC early on days when visits are scheduled.

(3 cr.)

**EUST 508 - Seminar on the European Union**

**Description**
This seminar course includes occasional speakers from local European embassies and institutes. Topics may include constitutional, political, economic, social, cultural, and defense issues. Class-work includes preparation for student presentations on these and other current EU issues.

(3 cr.)

**EUST 511 - Special Topics in Nineteenth and Twentieth Century European Studies**

**Description**
Content differs according to topics.

**Cross-listed**
Same as HIST 511.

(3 cr.)

**EUST 513 - The European Systems of Human Rights Protection**
Description
Examination of the procedures and substantive law contained in conventions, treaties, reports, judgments, and other documents will be examined for a comprehensive understanding of the development of human rights law in Europe. These human rights systems are considered in relation to their origins in social and political movements and their subsequent effects on politics and society.

Cross-listed
Same as LAW 513.

(3 cr.)

FILM 199 - Selected Topic for Core Curriculum

Description
Course addressing broad intellectual concern and accessible to all first-year students as part of the Primary Level Core.

When Offered
Offered occasionally.

(3 cr.)

FILM 200 - Analogue and Digital Practices

Description
This course introduces students to the basic skills in various traditional and contemporary mediums: screen printing, digital photography, digital imaging, video and sound editing. The aim is to offer hands-on basic skills in analogue and digital practices including film, visual arts and graphic design.

Cross-listed
Same as DSGN 200 and ARTV 200.

Notes
*Registration in this course is contingent upon consent of the director of the program

(3 cr.)

FILM 213 - Introduction to Visual Cultures

Description
Introduces students to the study of visual cultures in such arenas as film and video, photography, painting and sculpture, the built environment, advertising and fashion, and social media/internet. Students will learn how to analyze visual materials across media, interpret meanings, and gain experience in applying critical concepts to these understandings.

Cross-listed
Same as ARTV 213 and DSGN 213.

(3 cr.)

FILM 220 - Introduction to Film

Description
An introduction to the art of cinema, covering basic film history, theory, aesthetics, and production. Dramatic narrative (fiction), documentary (non-fiction), and avant-garde subjects are analyzed in detail, and relevant films are screened in class to stimulate discussion.

When Offered
Offered in fall and spring.
Notes
Required for the minor in film.

(3 cr.)

**FILM 299 - Selected Topic for Core Curriculum**

**Description**
Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

**Prerequisites**
RHET 101

**When Offered**
Offered occasionally.

(3 cr.)

**FILM 310 - History of World Cinema**

**Description**
A survey of international narrative cinema, from the silent period to the present. Individual films, film movements and film genres will be studied, and important films from the respective periods will be screened in whole or in part.

**Prerequisites**
FILM 220 or consent of the Director of the Film Program

**When Offered**
Offered in the fall or spring.

(3 cr.)

**FILM 320 - Cinema in Egypt and the Arab World**

**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.

(3 cr.)

**FILM 330 - Film Theory and Criticism**

**Description**
A historical study of the major theoretical approaches to motion picture art, including early analysis of film aesthetics, structure, and form, as well as modernist political critiques of cinema. Films will be screened class to facilitate understanding of the readings.

**Prerequisites**
FILM 220 or consent of the Director of the Film Program.

**When Offered**
Offered in the fall or spring.

(3 cr.)

**FILM 340 - Documentary Film**
Description
A Study of the non-fiction film, its international history, theoretical approaches to its structure and effects, and current issues in documentary production. Class screenings will be used to expose students to important and relevant examples of documentary cinema.

Prerequisites
FILM 220 or consent of the Director of the Film Program.

When Offered
Offered occasionally.

(3 cr.)

FILM 341 - Anthropology and Film

Description
The history and practice of film in anthropology; film as ethnography; comparison of films and analytical ethnographies.

Prerequisites
ANTH 202

Cross-listed
Same as ANTH 341.

When Offered
Offered occasionally.

(3 cr.)

FILM 351 - Digital Editing

Description
This course focuses on developing practical as well as aesthetic skills for digital forms of film editing. Students will engage in several assignments and exercises manifesting their capacity to work on various applications of editing techniques.

Prerequisites
FILM 200

When Offered
Offered in fall and spring.

(3 cr.)

FILM 352 - The Film Industry

Description
The organization of the production, distribution and exhibition practices of various film industries. May include an examination of the relationship between a national film industry and other visual media; changing technologies and their impact on the medium; connections and intersections between the film industry and other economic industries and dynamics.

Prerequisites
FILM 200 FILM 213

(3 cr.)

FILM 353 - Digital Cinematography
**Description**
This course focuses on developing the practical as well as aesthetic skills necessary for digital cinematography. As part of a fast emerging and increasingly dominant form of filmmaking, digital cinematography has become key in contemporary mainstream, alternative and independent filmmaking. Students will perform assignments and exercises manifesting their capacity to work with various applications of cinematographic techniques and their integration with lighting design and camera movement.

**Prerequisites**
FILM 200
(3 cr.)

**FILM 354 - Film Audience and Reception**

**Description**
The course maps aspects of spectatorship, audience, and reception approaches as they intersect with experiences and study of cinema. The course provides students with tools to appreciate film as an interactive medium of communication. It explored these approaches with emphasis on spectatorial agency. Resistant and subversive reading, and hegemonic and counter-hegemonic readership and production.

**Prerequisites**
FILM 200 FILM 213
(3 cr.)

**FILM 357 - Screenwriting**

**Description**
Provides an overview of the role of storytelling in filmmaking practice, introducing students to the techniques used by screenwriters to craft stories in both fiction and non-fiction and television programs and other moving picture media.

**Prerequisites**
FILM 200 FILM 213
(3 cr.)

**FILM 360 - The Filmmaker**

**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. Themes could include emphasis on filmmakers such as Quentin Tarantino, Martin Scorsese, the Coen Brothers, Youssef Chahine, George Romero, George Lucas, Francis Ford Coppola, Ingmar Bergman, Salah Abou-Seif, Pier Paolo Pasolini, among others.

**Prerequisites**
FILM 220 or consent of the Director of the Film Program.
(3 cr.)

**FILM 370 - Selected Topics in Film**

**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
(3 cr.)

**FILM 390 - Film Genres**

**Description**  
This course examines questions relating to one or several generic forms and conventions, drawing examples from Hollywood as well as a variety of world cinemas. Topics could include the Musical, Comedy, Horror, Film Noir, Western, Historical Epic genres, etc.

**Prerequisites**  
FILM 220 or the consent of the Director of the Film Program.
(3 cr.)

**FILM 402 - Independent Study**

**Description**  
With departmental approval, advanced students may arrange an individualized course topic to be completed under faculty supervision.

**Prerequisites**  
Prerequisite: departmental approval required.

**When Offered**  
Offered in fall and spring.

**Notes**  
An overall minimum B average is required for admission to the course
(1-3 cr.)

**FILM 450 - Senior Film Project**

**Description**  
Senior students work on making their own film projects with the participation of other film students. Under the supervision of the instructor, students will develop their project through pre-production, production, post-production phases. Attention will be given to quality excellence rather than quantity and length films.

**Prerequisites**  
At least three courses from the 'Film Production' list.
(3 cr.)

**FILM 452 - The Arab and Egyptian Film Industries: National and Global Perspectives**

**Description**  
A study of the nature of the Arab and Egyptian Film industry. Emphasis will be on the evolution of the Arab motion picture industry in the twentieth century and how it is situated in contemporary popular culture. Other topics include Egyptian cinema’s relationship to Hollywood, the audience for Egyptian and Arab films, the role of the state cinematic funding, distribution and production systems, the impact of new technologies, and how the structure of the Egyptian and Arab film industries compares with those of other countries.

**Prerequisites**  
Fourth year level in the Film major or the consent of the Program Director.

**Notes**  
This course may be repeated for credit.
(3 cr.)

**FILM 456 - Experiential Learning in Film**

**Description**
This course is designed to provide students with the opportunity to combine interests in film studies research with experimental learning opportunities in the community and workplace (internships, paid employment or volunteer position).

**Prerequisites**
Fourth year level in the Film major or the consent of the Program Director.

(3 cr.)

**FILM 470 - Advanced Seminar in Film Study and Research**

**Description**
This course is designed to provide students with the opportunity to combine interests in film studies research with experimental learning opportunities in the community and workplace (internships, paid employment or volunteer position).

**Prerequisites**
Fourth year level in the Film Major or consent of the Film Program Director.

(3 cr.)

**FINC 303 - Business Finance I**

**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.

**Prerequisites**
ACCT 201, (ECON 201 or ECON 202) and MACT 112

**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.

(3 cr.)

**FINC 404 - Investment Analysis**

**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.

**Prerequisites**
FINC 303

**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.

(3 cr.)

**FINC 405 - Applied Banking**

**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.

**Prerequisites**
FINC 303.

**When Offered**
Offered twice a year.

**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.

(3 cr.)

**FINC 408 - International Finance**

**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.

**Prerequisites**
FINC 303

**Cross-listed**
Same as INTB 408

**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.

(3 cr.)

**FINC 410 - Capital Markets**

**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 financial 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.

**Prerequisites**
FINC 303.
When Offered
Offered in fall and spring.

Notes
Enrollment in courses is limited, and priority is given to students seeking the Bachelor of Business Administration degree or the Bachelor of Accounting degree, students enrolling in courses specified as collateral requirements in other majors, and students who have declared business administration as a minor.

(3 cr.)

FINC 412 - Options and Derivatives

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.

Prerequisites
FINC 404

When Offered
Offered occasionally.

Notes
Enrollment in courses is limited, and priority is given to students seeking the Bachelor of Business Administration degree or the Bachelor of Accounting degree, students enrolling in courses specified as collateral requirements in other majors, and students who have declared business administration as a minor.

(3 cr.)

FINC 414 - Corporate Finance

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.

Prerequisites
FINC 404

When Offered
Offered in fall and spring.

Notes
Enrollment in courses is limited, and priority is given to students seeking the Bachelor of Business Administration degree or the Bachelor of Accounting degree, students enrolling in courses specified as collateral requirements in other majors, and students who have declared business administration as a minor.

(3 cr.)

FINC 415 - Portfolio Theory and its Applications

Description
Portfolio Theory 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.

Prerequisites
FINC 404

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.

(3 cr.)

**FINC 470 - Special Topics in Financial Management**

**Description**
Considers selected topics of current relevance in Financial Management.

**Prerequisites**
Prerequisite: Consent of Instructor.

**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.

(3 cr.)

**FINC 475 - Independent Study in Financial Management**

**Description**
Guided readings, research, and discussions on specific selected topic in Financial Management.

**Prerequisites**
Prerequisites: Senior standing and consent of FINC unit head and chair.

**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.

(1-3 cr.)

**FINC 512 - Options and Derivatives**

**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.

(3 cr.)

**FINC 513 - Fixed Income Securities**

**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.

(3 cr.)

**FINC 514 - Financial Risk Analysis**

**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.

(3 cr.)

**FINC 515 - Portfolio Management**

**Description**
This course blends portfolio theory with the type of practical issues that one will come across in the investment process. Topics include identifying investor objectives and constraints, recognizing risk and return characteristics of investment vehicles, developing strategic asset allocations among equity, fixed-income and risk-free assets, utilizing derivative securities to manage portfolio risk and, if possible, enhance portfolio return, and evaluating portfolio and manager performance relative to investment objectives and appropriate benchmarks. Investment tools, such as economic indicators and regression analysis will be introduced in computer labs.

(3 cr.)

**FINC 516 - Real Estate Finance**

**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.

(3 cr.)

**FINC 517 - Financial Modeling**

**Description**
The course shows how to understand important mathematical models used in finance today including: (1) Deterministic Cash Flow Streams, (2) Fixed Income Securities: duration and convexity, (3) Term structure of interest rates, (4) capital budgeting, dynamic cash flows, (5) Additional options topics, and how to use state of the art optimization and simulation software including: (1)Excel Solver for Optimization, (2) RISK for Monte Carlo Simulation, (3) Precision Tree for Decision Tree analysis, (4) The GAMS algebraic modeling language.

(3 cr.)

**FINC 527 - Managerial Economics**

**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.

(3 cr.)

**FINC 540 - Financial Management**

**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.

**Prerequisites**
ACCT 501

**When Offered**
Offered in fall and spring.

(3 cr.)

**FINC 541 - Investments**

**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.

**Prerequisites**
FINC 540

**When Offered**
Offered in spring.

(3 cr.)

**FINC 542 - International Financial Markets**

**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.

**Prerequisites**
FINC 540

**When Offered**
Offered in fall.

(3 cr.)

**FINC 543 - Financial Institutions and Markets**
**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.

**Prerequisites**
FINC 540

**When Offered**
Offered occasionally.
(3 cr.)

**FINC 544 - Corporate Financial Policy**

**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.

**Prerequisites**
FINC 541

**When Offered**
Offered in fall.
(3 cr.)

**FINC 545 - Private Equity and Venture Capital**

**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.

**Prerequisites**
FINC 540

**When Offered**
Offered occasionally.
(3 cr.)

**FINC 546 - Financial Analysis, Planning and Valuation**

**Description**
The course focuses on the framework, concepts and tools for planning business decisions and valuation. Topics discussed include forecasting financial statements, discounted cash flow techniques, alternative valuation methods and the implementation of capital budgets.

**Prerequisites**
FINC 540.

**Cross-listed**
Same as ACCT 503.
When Offered
Offered occasionally.
(3 cr.)

**FINC 570 - Selected Topics in Financial Management**

**Description**
It considers selected topics of current relevance in Financial Management.

**Prerequisites**
Prerequisites: consent of the instructor.

**When Offered**
Offered occasionally.
(3 cr.)

**FINC 575 - Independent Study in Financial Management**

**Description**
Guided readings, research, and discussions on specific selected topic in Financial Management.

**Prerequisites**
Prerequisite: Consent of FINC unit head and chair.

**When Offered**
Offered occasionally.
(1-3 cr.)

**FINC 590 - Research Methodology**

(1 cr.)

**FINC 599 - Thesis**

(6 cr.)

**GWST 500 - Theorizing Gender**

**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. All GWST MA students are required to take this course in their first semester.

**When Offered**
Offered in fall.
(3 cr.)

**GWST 501 - Approaches to Middle East/ North Africa Gender and Women’s Studies**

**Description**
This course immerses students in the historical, philosophical and theoretical debates within the academic field of Middle East Gender and Women’s Studies. Interdisciplinary approaches as well as varieties of theoretical positions are
exposed and discussed critically. Acknowledging the entanglements of regions, scholarly debates and politically struggles, this course locates the Middle East/ North Africa region within its worldly context. Past foci have included “Women’s Rights, Human Rights” “Critical Urbanism: Gender, Poverty, Violence,” “Practices of Islamic Family Law” “Regulating Bodies.”

When Offered
Offered in spring.
Repeatable
May be taken more than once if content changes.
(3 cr.)

GWST 502 - Justice: Histories and Theories

Description
This course introduces students to justice as a problem in contemporary cultural, legal and philosophical debates. The course explores the different domains through which justice becomes a universal language of rights, and the resultant compartmentalization of human experiences along parameters in which culture is presumed to be non-existent, rendering different forms of justice, such as gender justice, appendices to the already known. The course will engage with questions of distribution of justice – economic, social, political, historical – in the contemporary world with special focus on locating theories of justice in the practice thereof. It is conceived as laying the intellectual foundation for the GWST gender and justice graduate concentration, for graduate work in IHRL and other related fields.

Cross-listed
Same as LAW 520.

When Offered
Offered every fall.
(3 cr.)

GWST 503 - Histories and Theories of Gender and Development

Description
The aim of this foundation seminar is to introduce students to the historical, theoretical and empirical perspectives and experiences that inform current programs and polices in the filed of gender and development. The course is divided into four sub-modules each of which will present key concepts in the analysis of social relations between men and women in the context of development thinking. Each module will present these theoretical perspectives with reference to concrete empirical applications.

When Offered
Offered every fall.
(3 cr.)

GWST 504 - Gender and Migration

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. This is a joint course offered by the Center for Migration Studies and Refugee Studies and the Institute for Gender and Women’s Studies.

Cross-listed
MRS 504.
(3 cr.)

GWST 505 - Gender and Feminist Research Methodologies
Description
This course provides an introduction to gender and feminist approaches to dominant theories of knowledge and research methodologies in the social sciences.

Prerequisites
GWST 500

When Offered
Offered in spring.

GWST 506 - Reading Capital

Description
The primary goal of this course is to develop adequate tools for understanding the gendering of political economies in the contemporary world. The course provides a reading in the genealogies of capital in order to critically engage emergent political, economic and social forms.

GWST 507 - Critical Geographies: Reading the Global South

Description
This seminar explores the spatial and its social, political and gendered effects with a particular focus on dispossession. It introduces students to critical work about space in the social sciences aimed towards social transformation.

GWST 508 - Women and Human Rights

Description
This seminar explores the historical development of the notion of the human from the 1950’s to the present. It introduces students to women’s struggles for incorporation into human rights discourses, the consolidation of dominant regulatory processes, and their contemporary critical feminist engagements.

GWST 570 - Special Topics in Gender and Women's Studies

Description
Alternating selected topics.

Repeatable
May be taken more than once if content changes.

GWST 580 - Independent Study and Readings

Prerequisites
Prerequisite: Approval of IGWS Graduate Advisory Committee.

When Offered
Offered occasionally.

GWST 599 - Research Guidance and Thesis
Description
Consultation for students in problems related to their thesis.

When Offered
Offered in fall and spring.
(no cr.)

HIST 110 - World Cultures

Description
An examination of the development and diffusion of culture throughout the world from the great ancient civilizations to the present. The focus will be on making connections across time and space and developing a deeper understanding of the human community in all its aspects: political, social, economic, cultural and environmental.
(3 cr.)

HIST 111 - Big History for Freshmen

Description
A study of the earth, the universe and human civilizations that tries to understand how human beings are connected to their environments and the billions of years of historical evolution that preceded their appearance on the planet. Beginning with big bang cosmology and continuing all the way through to the future, it is an attempt to put everything - and everyone - into perspective.
(3 cr.)

HIST 122 - Words That Made History: Great Speeches of the 20th Century

Description
Readings and recordings of historic speeches. Studies the lives of the speakers, the contexts in which the speeches were delivered, the rhetoric of the speeches, and the impact the speeches had, both on events and on the English language.
(3 cr.)

HIST 123 - Family History in the Modern Middle East

Description
Focuses on research and fieldwork. Acquaints students with interview techniques and methods in oral and family history. By integrating their own family stories into various conceptual and chronological frameworks, students will discover how history relates to them.
(3 cr.)

HIST 199 - Selected Topics for Core Curriculum

Description
Course addressing broad intellectual concerns and accessible to all first-year students.
(3 cr.)

HIST 201 - History of American Civilization to the Nineteenth Century

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.
(3 cr.)
HIST 202 - History of Modern American Civilization

**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. (3 cr.)

HIST 203 - Western Civilization from Antiquity to Medieval Europe

**Description**
An introduction to the history of western society from ancient Greece and Rome to the Middle Ages with emphasis on the ideas and institutions that led to the growth and expansion of European civilization. (3 cr.)

HIST 204 - Europe from the Middle Ages to the Enlightenment (1337-1789)

**Description**
This course explores the history of Europe from the start of the Hundred Years War to the French Revolution. It examines the major developments of European politics, society and culture as it moved from the late Middle Ages to the Early Modern Period (including the Renaissance and the Age of Enlightenment) to the beginning of the Age of Revolution. (3 cr.)

HIST 205 - Europe in the Age of Revolution and Reform (1789-1914)

**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.

Cross-listed
Same as POLS 205 (3 cr.)

HIST 206 - Europe in International Politics in the Twentieth Century

**Description**
This Course explores major development in European and international socio-economic politics from the end of the 1800s to the present day. It introduces the key events and trends of this tumultuous century including wars, revolutions, and ideological movements.

Cross-listed
Same as POLS 206. (3 cr.)

HIST 207 - World History

**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.
(3 cr.)

HIST 209 - Introduction to American Studies

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.

Cross-listed
Same as ECLT 209.
(3 cr.)

HIST 210 - Religions of the World

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 religions in the world, and the similarities and differences between them.
(3 cr.)

HIST 211 - History In The Making

Description
This course offers introductory history topics, each taught in a separate section. Topics focus on major historical events or movements and will be traced through contemporary literary or visual documentary records and representations of those closely involved. Topics will also examine the way interpretation of such materials may alter over time. Topics will change according to instructor and students should consult current course schedules.
(3 cr.)

HIST 212 - The Quest for the Historical Jesus

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.

Cross-listed
Same as CREL 212.
(3 cr.)

HIST 225 - East Asian History

Description
Introduction to the cultural histories of China, Korea, and Japan from earliest times until the present, including political, social, intellectual and material culture.

HIST 243 - History I: Pre-Dynastic Through Middle Kingdom Egypt
Description
The history of Pharaonic Egypt from predynastic times to the end of the Middle Kingdom will be covered. Literary sources will be augmented by archeological evidence.

When Offered
Offered in fall.

Notes
Field trips to archeological sites in the Cairo area are an obligatory aspect of the course.

(3 cr.)

HIST 244 - History II: Middle Kingdom Through New Kingdom Egypt

Description
The course will focus on the history of Pharaonic Egypt from the Middle Kingdom to the decline of the New Kingdom and will examine the texts, monuments and artifacts that underline our understanding of this era.

Prerequisites
HIST 243 or consent of the instructor.

When Offered
Offered in spring.

Notes
Field trips to the Cairo Museum and other relevant sites are a required part of the course.

(3 cr.)

HIST 246 - Survey of Arab History

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.

Cross-listed
Same as ARIC 246.

(3 cr.)

HIST 247 - The Making of the Modern Arab World

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.

(3 cr.)

HIST 299 - Selected Topics for Core Curriculum

Description
Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

Prerequisites
RHET 101

Notes
May be repeated for credit when content changes.
(3 cr.)

HIST 307 - The Middle Ages, the Renaissance and the Reformation

Description
An investigation of the development of European culture in the High Middle Ages and an examination of the ways in which European society was transformed by the intellectual and religious movements known as the Renaissance and the Reformation.

(3 cr.)

HIST 308 - Europe in the Age of Reason

Description
An examination of the ways in which European intellectual developments during the Enlightenment were connected with socio-political changes in the seventeenth, eighteenth and early nineteenth centuries.

(3 cr.)

HIST 309 - History of American Political Thought

Description
An examination of the major themes in American political thought and ideology from 1607 to the present with an emphasis on the ways in which conceptions of personal freedom, congregationalism, individualism, social Darwinism, civil liberties, civil rights, progressivism, liberalism, conservatism, populism, or anti-communism either reflected or influenced political action.

Prerequisites
HIST 201 or HIST 202 or HIST 209

(3 cr.)

HIST 319 - Islamic Spain and North Africa (711-1492 A.D.)

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 319.

(3 cr.)

HIST 320 - Big History

Description
A study of the earth, the universe and human civilizations that tries to understand how human beings are connected to their environments and the billions of years of historical evolution that preceded their appearance on the planet. Beginning with big bang cosmology and continuing all the way through to the future, it is an attempt to put everything - and everyone - into perspective.

Prerequisites
The course will not be open to students who have already taken HIST 111.

(3 cr.)
HIST 330 - Urban Landscapes in the Modern Middle East/North Africa

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.
(3 cr.)

HIST 331 - History of Palestine/Israel

Description
This survey course covers the history of modern Palestine and Israel. It is based on a comparative approach that allows students to engage with primary materials, secondary historical texts, literary narratives, and cinematic representations. This course provides students with the historical and theoretical tools to learn about and engage formations of nation and history in Palestine/Israel.
(3 cr.)

HIST 333 - Zionism and Modern Judaism

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.
Cross-listed
Same as CREL 333.
(3 cr.)

HIST 342 - History of Egypt in the Graeco-Roman Era

Description
This 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.
Prerequisites
HIST 243 and HIST 244 or instructor's consent.
Cross-listed
Same as EGPT 342.
When Offered
Offered occasionally.
(3 cr.)

HIST 343 - Birth of Muslim Community and Rise of the Arab Caliphates

Description
The rise of Islam and Arab expansion, the classical period of Islamic civilization during its first centuries to the period of Abbasid political disintegration.
Cross-listed
Same as ARIC 343.
When Offered
Offered in fall.
(3 cr.)

**HIST 344 - Caliphs and Sultans in the Age of Crusades and Mongols**

**Description**
The later Abbasid caliphate, the rise of Shi'ism and the Fatimids, Sunni consolidation under the Seljuks and Ayyubids, external threats to dar al-Islam; the rise of Mamluks.

**Cross-listed**
Same as ARIC 344.

**When Offered**
Offered in spring.
(3 cr.)

**HIST 345 - Gunpowder Empires: Ottomans, Safavids and Mughuls**

**Description**
The decline of the Mamluks; the Timurids in Persia; the age of gunpowder: the Safavid Ottoman, and Moghul empires and their decline.

**Cross-listed**
Same as ARIC 345.

**When Offered**
Offered in fall.
(3 cr.)

**HIST 346 - Societies and Cultures of the Ancient Near East**

**Description**
The course constitutes a historical overview of the societies and cultures of Egypt, the Mediterranean World and the Middle East, from the emergence of urban society in Iraq in the fourth millennium BCE to the rise and fall of the great empires of Babylon, Assyria, the Hitties, Archaemenid Persia, Greece and Rome. Special attention will be paid to the position of Ancient Egyptian civilization within the wider context of Ancient Near Eastern History.

**Prerequisites**
HIST 243 and HIST 244, or instructor's consent

**Cross-listed**
Same as EGPT 346

**When Offered**
Offered occasionally.
(3 cr.)

**HIST 355 - State and Society in the Middle East, 1699-1914**

**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

**Cross-listed**
Same as ARIC 355.
(3 cr.)

**HIST 356 - State and Society in the Middle East, 1906-present**
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.

Cross-listed
Same as ARIC 356.
(3 cr.)

HIST 357 - Selected topics in Middle East History

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 357.

When Offered
Offered occasionally.
(3 cr.)

HIST 400 - Independent Study

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.
(1-3 cr.)

HIST 401 - Selected Topics in the History of the United States

Repeatable
May be repeated for credit when content changes.
(3 cr.)

HIST 402 - Selected Topics in European History

Repeatable
May be repeated for credit when content changes.
(3 cr.)

HIST 405 - Selected Topics in World History

Repeatable
May be repeated for credit when content changes.
(3 cr.)

HIST 412 - Selected Topics in Modern Egyptian History

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.
Repeatable
May be repeated for credit when content changes.
(3 cr.)

HIST 415 - The Marriage Crisis and the Middle East

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.
(3 cr.)

HIST 420 - Historical Theory and Methodology

Description
Seminar on historical thought from its emergence in the classical world to the present, including consideration of the Arab historical tradition. Covers schools of historical interpretation and methodological approaches.

Prerequisites
Prerequisite: To be taken in senior year
(3 cr.)

HIST 425 - Food in World History

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.
(3 cr.)

HIST 430 - The Environment in World History

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.
(3 cr.)

HIST 435 - Social and Political History of Modern Cairo

Description
The History of Cairo with an emphasis on social, political and economic developments in the twentieth century.
(3 cr.)

HIST 440 - Colonialism and Imperialism in the Middle East and South Asia

Description
This course deals with the history of colonialism and imperialism in the Middle East and South Asia. Its basic premise is that the colonial encounter was a formative one for both colonizer and colonized. We will be studying not only the political and military aspects of that encounter, but also its ideological and cultural ones. Topics touched upon include:
Orientalism, imperialism and culture, medicine, law, urban planning, and gender.
(3 cr.)

**HIST 445 - Selected Topics in Coptic Studies**

**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, EGPT, ANTH, SOC 445.

**When Offered**
Offered in fall.

**Notes**
Students in these majors may petition preferably before registration to have the course included in their major requirements.

(3 cr.)

**HIST 454 - Modern Movements in Islam**

**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.

**Prerequisites**
HIST 355 or HIST 356 or equivalent background.

**Cross-listed**
Same as ARIC 454.

(3 cr.)

**HIST 460 - Selected Topics in Middle Eastern History, 600-1250 A. D.**

**Cross-listed**
Same as ARIC 460

**When Offered**
Offered occasionally.

**Repeatable**
May be repeated for credit when content changes.

(3 cr.)

**HIST 461 - Selected Topics in Middle Eastern History, 1250-1800 A. D.**

**Cross-listed**
Same as ARIC 461.

**When Offered**
Offered occasionally.

**Repeatable**
May be repeated for credit when content changes.

(3 cr.)
HIST 462 - Selected Topics in the History of the Modern Middle East

Cross-listed
Same as ARIC 462.
Repeatable
May be repeated for credit when content changes.
(3 cr.)

HIST 463 - Selected Topics in the History of Islamic Thought and Institutions

Prerequisites
Prerequisite: consent of instructor
Cross-listed
Same as ARIC 463.
Repeatable
May be repeated for credit when content changes.
(3 cr.)

HIST 511 - Special Topics in Nineteenth and Twentieth Century European Studies

Description
Content differs according to topics.
Cross-listed
Same as EUST 511.
(3 cr.)

HIST 542 - Seminar on the Nineteenth-Century Middle East

Description
Readings, discussion, and research.
Cross-listed
Same as ARIC 542.
(3 cr.)

HIST 543 - Seminar on the Twentieth-Century Middle East

Description
Readings, discussion, and research.
Cross-listed
Same as ARIC 543.
(3 cr.)

INTB 301 - Introduction to International Business

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.
Prerequisites
MKTG 302 and MGMT 307.
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.

(3 cr.)

INTB 408 - International Finance

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.

Prerequisites
FINC 303

Cross-listed
Same as FINC 408.

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.

(3 cr.)

INTB 412 - International Marketing

Description
The marketing problems and opportunities of the exporter, licensor, or manufacturer in a foreign country. Topics include factors in assessing world marketing opportunities and the international market mix.

Prerequisites
MKTG 302

Cross-listed
Same as MKTG 412

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.

(3 cr.)

JRMC 200 - Introduction to Mass Communication

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.
(3 cr.)

**JRMC 201 - Mass Media Writing**

**Description**
Study and practice of basic writing, editing, and reporting techniques used in the international print media; newsroom practices to develop listening, reading, writing and editing skills.

(3 cr.)

**JRMC 202 - Multimedia Writing**

**Description**
Cross-media study and practice of writing and reporting for print, broadcast, Internet.

**Prerequisites**
JRMC 201
(3 cr.)

**JRMC 203 - Mass Media Ethics and Responsibility**

**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.

(3 cr.)

**JRMC 230 - Introduction to Photography**

**Description**
History, composition, lighting, and other basic elements of photography. Practical applications of digital photography

(3 cr.)

**JRMC 250 - Global Media Systems**

**Description**
Comparative study of global communication systems and theory in relation to national and international development.

**Notes**
Open to all university students.

(3 cr.)

**JRMC 270 - Online Communication**

**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.

(3 cr.)

**JRMC 299 - Selected Topic for Core Curriculum**
Description
Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

Prerequisites
RHET 101

When Offered
Offered occasionally.

Notes
Enrollment is limited and priority is given to students with declared JMC majors.

(3 cr.)

JRMC 301 - Journalism Editing and Design

Description
Principles of, and laboratory practice in, copyediting and proofreading; headline writing; scaling and cropping photographs; and layout and design.

Prerequisites
JRMC 202

(3 cr.)

JRMC 305 - Introduction to Visual Communication

Description
Introductory laboratory in basics of typography, desktop publishing, digital design of publications and advertising. Taught by lecture with practical application.

Prerequisites
JRMC 201

(3 cr.)

JRMC 310 - Public Opinion, Persuasion and Propaganda

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.

(3 cr.)

JRMC 312 - Multimedia Journalism Lab: The Caravan

Description
Supervised newsroom experience in reporting, writing, editing, designing and layout for print, broadcast and online version of The Caravan and AUC TV.

Prerequisites
JRMC 202, JRMC 203 and JRMC 301 or consent of instructor.

(3 cr.)

JRMC 315 - Introduction to Advertising
Description
Survey of professional principles and practices in advertising and their relationship to business and government, with special emphasis on the United States and Egypt.

Prerequisites
JRMC 305
(3 cr.)

**JRMC 320 - Mass Communication Research**

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.

Prerequisites
Junior standing.
(3 cr.)

**JRMC 330 - Advanced Photography**

Description
Theory and practice of photojournalism. Advanced photography and photo editing techniques and operations.

Prerequisites
JRMC 230
(3 cr.)

**JRMC 333 - Research for Journalists**

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.

Prerequisites
JRMC 312
Notes

(3 cr.)

**JRMC 337 - TV Scriptwriting and Production**

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.

Prerequisites
JRMC 202
(3 cr.)

**JRMC 339 - Studio Production: AUC TV**
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.

Prerequisites
JRMC 337

Notes

(3 cr.)

JRMC 355 - Creative Strategy and Advertising Copywriting

Description
Development of creative strategy, writing advertising and promotional copy, designing and preparing layouts for various media, planning and executing written and oral presentations.

Prerequisites
JRMC 305 and JRMC 315

Notes

(3 cr.)

JRMC 402 - Reporting and Writing in Arabic

Description
Advanced principles and practice in reporting and writing in and from Arabic.

Prerequisites
Completion of university general requirements in Arabic and JRMC 202.

When Offered
Offered occasionally.

(3 cr.)

JRMC 403 - Feature and Magazine Writing

Description
Principles and intensive practice in researching, organizing, and writing feature articles for international newspapers and magazines.

Prerequisites
JRMC 202

When Offered
Offered occasionally.

Notes
Enrollment is limited and priority is given to students with declared MMJ majors.

(3 cr.)

JRMC 405 - Advanced Visual Communication
Description
Advanced practical integration of digital text and photographs in desktop publishing of printed material using state-of-the-art production hardware and software.

Prerequisites
JRMC 305

When Offered
Offered occasionally.
(3 cr.)

JRMC 406 - Internship

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.

Prerequisites
Junior standing.

Notes
(3 cr.)

JRMC 412 - Newsroom Editing and Management

Description
Supervised advanced newsroom experience in writing, editing, layout and management of Caravan, the AUC newspaper.

Prerequisites
JRMC 312
(3 cr.)

JRMC 415 - Public Relations Theory and Techniques

Description
Principles and practical use of public relations and public information techniques, with emphasis on media use for business and non-profit organizations.

Prerequisites
JRMC 202 and JRMC 315
(3 cr.)

JRMC 420 - Media Management

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.

Prerequisites
Junior standing.

Notes
(3 cr.)

**JRMC 425 - Integrated Marketing Communication Campaigns Capstone**

**Description**
Examination, development, and critique of advertising and marketing communication campaigns, with emphasis given to creative and media factors.

**Prerequisites**
JRMC 415

**Notes**
IMC seniors only.

(3 cr.)

**JRMC 441 - Camera and Editing Workshop**

**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.

**Prerequisites**
JRMC 202

(3 cr.)

**JRMC 444 - Media Law and Policy**

**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.

**Prerequisites**
JRMC 203

(3 cr.)

**JRMC 460 - Audio Production**

**Description**
Studio experience in Audio production.

**Prerequisites**
JRMC 202 and junior standing.

(3 cr.)

**JRMC 471 - Online Journalism**

**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.

**Prerequisites**
JRMC 202

(3 cr.)
JRMC 480 - Multimedia Reporting Capstone

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.
(3 cr.)

JRMC 482 - Media Convergence Capstone

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.
(3 cr.)

JRMC 490 - Special Topics in Mass Communication

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
(1-3 cr.)

JRMC 499 - Directed Individual Study in Mass Communication

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.
Prerequisites
Junior standing and written project proposal endorsed by fulltime faculty with project review by department.
Repeatable
May be repeated once for credit if content changes.
Notes
Enrollment is limited and priority is given to students with declared JRMC majors.
(1-3 cr.)

JRMC 500 - Mass Communication Theory and Literature

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.
(3 cr.)

JRMC 501 - Advanced Reporting and Writing
Description
Intensive reporting, research, and writing of in-depth articles for magazines and newspapers with intent to publish.

Prerequisites
appropriate professional experience or undergraduate coursework (JRMC 201 and JRMC 301 or equivalent).

When Offered
Offered in fall.
(3 cr.)

JRMC 502 - Current Issues in Mass Communication

Description
Overview of major issues in mass communication and how they impact audiences and society.

When Offered
Offered in spring.
(3 cr.)

JRMC 504 - Research Methods in Mass Communication

Description
Introduction to scientific method and mass media research methods: field surveys, quantitative and qualitative research.

When Offered
Offered in fall.
(3 cr.)

JRMC 506 - Internship

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.
(3 cr.)

JRMC 537 - TV News Gathering and Script Writing

Description
Introduces students to the theory of field reporting and production. Students will learn the concepts of television journalism, the differences in reporting for print and broadcast, scriptwriting, use of pictures and related topics.

Prerequisites
JRMC 201 and JRMC 337 .
(3 cr.)

JRMC 538 - Arabic TV Script Writing

Description
Introduces students to the theory of field reporting and producing. Students will learn the concepts of television journalism, the differences in reporting for print and broadcast, scriptwriting, use of pictures and related topics. The course is partially devoted to presentation skills of Arabic TV reporting.

Prerequisites
JRMC 537
Notes
Non-Arab students may substitute an elective with approval of the director.

(3 cr.)

**JRMC 539 - TV Presentation and Voice Coaching**

**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.

**Prerequisites**
JRMC 537
(3 cr.)

**JRMC 540 - Reporting Civil Society**

**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.

**Prerequisites**
JRMC 501 and JRMC 571

**When Offered**
Offered in fall.
(3 cr.)

**JRMC 541 - Digital Camera Production**

**Description**
Intensive field training on how to use digital video cameras. Students will learn the basic of camera shooting, sequencing framing, lighting, and also how to conduct voxpops and interviews. Students will practice shooting on different camera models and formats.

**Prerequisites**
JRMC 337.
(3 cr.)

**JRMC 542 - Digital Video Editing**

**Description**
Intensive training in editing labs to master basic operation of video editing equipment to undertake the editing of simulated news events to a finished professional product. Students will learn how to edit their stories using machine to machine editing (linear editing) and software editing (non linear editing).

**Prerequisites**
JRMC 337 , JRMC 541
(3 cr.)

**JRMC 545 - Broadcast News Intensive I**

**Description**
This course provides students with an intensive real-world exposure to the production of a television news broadcast. Students will be involved in all aspects of producing a weekly TV news program, including reporting, producing, executive producing, studio camera work, directing, writing and anchoring.

**Prerequisites**
JRMC 537 JRMC 541 and JRMC 542

**When Offered**
Offered in fall.

(3 cr.)

**JRMC 546 - Broadcast News Intensive II**

**Description**
This course is a continuation of JRMC 545, providing students with advanced intensive real-world exposure to the production of a television news broadcast. Students will be involved in all aspects of producing a weekly TV news program, including reporting, producing, executive producing, studio camera work, directing, writing and anchoring. In addition, students fluent in Arabic will produce reports in Arabic.

**Prerequisites**
JRMC 545

**When Offered**
Offered in spring.

(3 cr.)

**JRMC 550 - Seminar in International Communication**

**Description**
World news communication systems, including news-gathering agencies; the role of foreign correspondents, the foreign press, information flow, propaganda and comparative press laws.

**When Offered**
Offered in fall.

(3 cr.)

**JRMC 559 - TV Interviewing & Talk Show Hosting**

**Description**
Theory and intensive practice in TV skills of interviewing guests on one-on-one bases as well as hosting talk shows.

**Prerequisites**
Appropriate professional experience or undergraduate coursework (JRMC 201 JRMC 301 or equivalent).

(3 cr.)

**JRMC 560 - Seminar on Electronic Journalism and Arab Society**
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.
(3 cr.)

JRMC 570 - Seminar in Mass Communication and National Development

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.
(3 cr.)

JRMC 571 - Digital Journalism

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 in spring.
(3 cr.)

JRMC 580 - Impact of Television: Issues and Developments

Description
Media-specific issues and developments in television related to programming and production; production and delivery; technological bias and special problems such as piracy, television and religion, regulation and “equal time.”

When Offered
Offered in spring.
(3 cr.)

JRMC 588 - Comprehensives

Description
Individual consultation for students preparing for the comprehensive examination.

When Offered
Offered in fall and spring.
(no cr.)

JRMC 590 - Special Topics

Description
Content varies with the instructor. Can be repeated once for credit if content changes.

When Offered
Offered occasionally.
(3 cr.)

**JRMC 599 - Research Guidance and Thesis**

**Description**
Consultation with students as they prepare their theses.

**When Offered**
Offered in fall and spring.
(no cr.)

**LAW 500 - Legal Research and Writing**

**Description**
A workshop designed to develop the lawyering skills in research, drafting, legal argument and oral presentation, especially with respect to practice in transnational legal problems and settings. Required of all students in the LL.M program during the first semester of study.

(3 cr.)

**LAW 501 - Jurisprudence**

**Description**
The course will look at the major schools of legal theory in the United States 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.

**Prerequisites**
LAW 500 (prerequisites can be waived by special permission of the Law department)
(3 cr.)

**LAW 502 - Comparative Law**

**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.

(3 cr.)

**LAW 503 - Law and Economic Development**

**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.
(3 cr.)

**LAW 504 - European Union Law**
Description
Introduction to the major institutions and decision making procedures of the European Union’s constitutional structure as well as the foundational doctrines and processes developed by the EU judicial system.

Prerequisites
LAW 502 or LAW 509 (Prerequisites can be waived by special permission of the Law department).

Cross-listed
Same as EUST 504.
(3 cr.)

LAW 505 - Islamic Law Reform

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.

Prerequisites
LAW 502 or LAW 509 (Prerequisites can be waived by special permission of the Law department).
(3 cr.)

LAW 506 - Egyptian Legal History

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.
(3 cr.)

LAW 507 - The Law and Practice of the Settlement of International Disputes Between States

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.

Prerequisites
LAW 509 and LAW 510 (prerequisites can be waived by special permission of the Law Department).
(3 cr.)

LAW 508 - International Criminal Law

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.

**Prerequisites**
LAW 509 and LAW 510 (prerequisites can be waived by special permission of the Law Department).

(3 cr.)

**LAW 509 - International Law**

**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.

(3 cr.)

**LAW 510 - Introduction to International Human Rights and Humanitarian Law**

**Description**
This gateway course provides an overview of the substance and some of the mechanisms of international human rights and humanitarian law. The course covers the doctrinal, institutional, methodological and theoretical bases of human rights law and international humanitarian law and offers an introduction to the substantive development of the corpus of human rights and humanitarian law, through the case-law of the international, regional, and domestic monitoring and judicial authorities on selected issues of substance or procedure (varying interpretations of given substantive political, social and economic rights, standards of evidence in human rights law, universal jurisdiction, definition of terrorism in human rights and humanitarian law, etc).

(3 cr.)

**LAW 511 - International Humanitarian Law**

**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.

**Prerequisites**
LAW 509 and LAW 510 (prerequisites can be waived by special permission of the Law Department).

(3 cr.)

**LAW 512 - Human Rights and the United Nations**

**Description**
The framework and evolution of international human rights law within the system established by the United Nations Organization examined in relation to its antecedents, establishing documents, processes of norm creation and application, and present methods and activities of monitoring within the UN system.

**Prerequisites**
LAW 509 and LAW 510 (Prerequisites can be waived by special permission of the Law department).

(3 cr.)
LAW 513 - The European System of Human Rights Protection

Description
The procedures and substantive law contained in conventions, treaties, reports, judgments, and other documents will be examined for a comprehensive understanding of the development of human rights law in Europe. These human rights systems are considered in relation to their origins in social and political movements and their subsequent effects on politics and society.

Prerequisites
LAW 509 and LAW 510 . (Prerequisites can be waived by special permission of the Law department).

Cross-listed
Same as EUST 513.
(3 cr.)

LAW 514 - Human Rights in the Middle East

Description
An overview of the dynamics of international human rights law in the Middle-East, through national, regional and universal mechanisms dealing with current human rights issues in the region. The course will cover a series of substantive themes of interest to the countries and people of the region with the help of legal cases and documents coming from the UN system, the African System, the Arab League, and national courts and institutions. The course will also examine the norms and institutions of international humanitarian law in their specific relationship to conflicts in the region.

Prerequisites
LAW 509 and LAW 510 . (Prerequisites can be waived by permission of the department).
(3 cr.)

LAW 515 - Comparative Constitutional Law and Human Rights

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.

Prerequisites
LAW 509 and LAW 510 (Prerequisites can be waived by special permission of the Law department).
(3 cr.)

LAW 516 - Economic, Social, and Cultural Rights

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.

Prerequisites
LAW 509 and LAW 510 . (Prerequisites can be waived by special permission of the Law department).
(3 cr.)

LAW 517 - Human Rights and Identity Groups
Description
This course focuses attention on the use of identity groups as legal objects of special protection in international human rights law. Various concepts related to the protection of the rights of groups that have been identified as either "vulnerable" or historically discriminated against, such as women and children, are examined. Instruments and mechanisms as well as the conceptual framework for the protection of these groups (and other non-protected "vulnerable" groups) are considered in relation to their perceived vulnerabilities.

Prerequisites
LAW 509 and LAW 510. (Prerequisites can be waived by special permission of the Law department).

(3 cr.)

LAW 518 - International Refugee Law

Description
A consideration of the dynamics between the legal rights of forced migrants and the privilege of states to grant asylum. This course is required of all students seeking the diploma in Forced Migration and Refugee Studies.

Prerequisites
LAW 509 and LAW 510. (Prerequisites can be waived by special permission of the Law department).

Cross-listed
Same as MRS 518.

(3 cr.)

LAW 519 - Human Rights in Africa

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, and (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.

Prerequisites
LAW 509 and LAW 510 (Prerequisites may be waived by permission of the department)

(3 cr.)

LAW 520 - Justice: Histories and Theories

Description
This course introduces students to justice as a problem in contemporary cultural, legal and philosophical debates. The course explores the different domains through which justice becomes a universal language of rights, and the resultant compartmentalization of human experiences along parameters in which culture is presumed to be non-existent, rendering different forms of justice, such as gender justice, appendices to the already known. This course will engage with questions of distribution of justice - economic, social, political, historical - in the contemporary world with special focus on locating theories of justice in the practice thereof. It is conceived as laying the intellectual foundation for the GWST gender and justice graduate concentration, for graduate work in IHRL and other related fields. This is a joint course offered by the Institute for Gender and Women's Studies and the Department of Law.

Cross-listed
Same as GWST 502.
(3 cr.)

**LAW 522 - International Economic and Trade Law**

**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.
(3 cr.)

**LAW 523 - International Commercial Arbitration**

**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.

**Prerequisites**
LAW 502 or LAW 509 (Prerequisites can be waived by special permission of the Law department).
(3 cr.)

**LAW 524 - Comparative Corporate Governance**

**Description**
Comparison of how select questions of corporate governance, control, and finance are regulated under American, French, German, and Egyptian corporate law.

**Prerequisites**
LAW 502
(3 cr.)

**LAW 525 - Securities Regulation Law**

**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.

**Prerequisites**
LAW 502
(3 cr.)

**LAW 526 - Antitrust Law**

**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.

**Prerequisites**
LAW 502 (Prerequisites can be waived by special permission of the Law department).
(3 cr.)

**LAW 527 - Graduate Law Seminar**
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.

Prerequisites
Permission of the Department. Prerequisites can be waived by special permission of the Law Department.

(3 cr.)

LAW 528 - Migration in International Law

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.

Prerequisites
LAW 509 and LAW 510

Cross-listed
Same as MRS 528.

(3 cr.)

LAW 570 - Special Topics in Comparative Law

Description
In addition to allowing the resident faculty to give special topics seminars as regular 3 credit courses, this course as well as LAW 571 and LAW 572 are used to accommodate the short courses that distinguished visiting lecturers give, with varying credit values depending on the number of hours covered.

Prerequisites
Permission of the Department. Prerequisites can be waived by special permission of the Law Department.

Repeatable
May be taken more than once for credit if content changes.

(up to 3 cr.)

LAW 571 - Special Topics in International Law

Prerequisites
Permission of the Department. Prerequisites can be waived by special permission of the Law Department.

Repeatable
May be taken more than once for credit if content changes.

(up to 3 cr.)

LAW 572 - Special Topics in Public Law

Prerequisites
Permission of the Department. Prerequisites can be waived by special permission of the Law Department.

Repeatable
May be taken more than once for credit if content changes.
(up to 3 cr.)

**LAW 575 - Special Topics in International Human Rights Law**

**Description**
Specialized areas of International Human Rights Law.

**Prerequisites**
Prerequisite: consent of the instructor.

**Repeatability**
May be taken a second time for credit if content changes.
(3 cr.)

**LAW 584 - Human Rights in Practice**

**Description**
Internship for four to six months in an organization pursuing human rights activities, or active involvement on an institutional research project having a human rights emphasis. The work is assessed on the basis of a written report and discussion.

**Prerequisites**
Consent of the instructor.
(3 cr.)

**LAW 585 - Legal Practice**

**Description**
Internship for four to six months in a corporation, law firm practicing in the Middle East, international organization, an NGO pursuing Development activities. The work is assessed on the basis of a written report and discussion.

**Prerequisites**
Consent of the instructor.
(3 cr.)

**LAW 586 - Independent Study**

**Description**
Guided individual reading and/or research on a subject of mutual interest to the student and the faculty member.

**Prerequisites**
Consent of the instructor and approval of the Degree Program Director.

**LAW 599 - Research Guidance/Thesis**

**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.
**Prerequisites**
LAW 527
(no cr., graded)

**LING 200 - Languages of the World**

**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.

(3 cr.)

**LING 252 - Introduction to Linguistics**

**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.

(3 cr.)

**LING 268 - Principles and Practice of Teaching English**

**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.

**Prerequisites**
RHET 201.

(3 cr.)

**LING 299 - Selected Topic for Core Curriculum**

**Description**
Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

**Prerequisites**
RHET 101.

**Repeatable**
May be taken more than once if content changes

(3 cr.)

**LING 322 - Introduction to Phonetics**

**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.

(3 cr.)

**LING 352 - Language in Culture**

**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 352
(3 cr.)

**LING 422 - Language and Human Development**

**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.
(3 cr.)

**MACT 100 - Algebra and Trigonometry**

**Description**

**Prerequisites**
Prerequisites: Thanawyia ’Amma Arts or equivalent.

**When Offered**
Offered in fall and spring

**Notes**
No credit for Thanawyia Amma Math/Science students, or equivalent, or students majoring in any of the departments of the School of Sciences and Engineering
(3 cr.)

**MACT 101 - Basic Mathematics for Social Sciences**

**Description**

**Prerequisites**
Prerequisite: Thanawyia ’Amma Science or MACT 100.

**When Offered**
Offered occasionally.

**Notes**
No credit for science majors
(3 cr.)

**MACT 112 - Statistical Reasoning**

**Description**
Descriptive and inferential statistics, including graphing data and correlation analysis. Random variables and their probability distributions. The distribution of the sample means, the central limit theorem. Point and interval estimation and hypotheses testing. Students are instructed on the use of a statistics computer package at the beginning of the term and use it for assignments.

**When Offered**
Offered in fall and spring.
(3 cr.)

**MACT 131 - Calculus I**

**Description**
Limits of one-variable functions, continuity and differentiability. Extrema and Curve sketching. Related rates. Linear approximation. Differentiation of Trigonometric functions. Applications of the derivative

**Prerequisites**
Prerequisite: Thanawiya, 'Amma Science or equivalent.

**When Offered**
Offered in fall and spring.

**Notes**
This course is 0 credit hours for all engineering majors, computer science and physics majors. Otherwise it is 3 credit hours.

(0/3)

**MACT 132 - Calculus II**

**Description**

**Prerequisites**
MACT 131 or exemption.

**When Offered**
Offered in fall and spring.

(3 cr.)

**MACT 199 - Selected Topic for Core Curriculum**

**Description**
A course addressing broad intellectual concerns and accessible to all students, irrespective of major.

**When Offered**
Offered in fall and spring.

(3 cr.)

**MACT 200 - Discrete Mathematics**

**Description**

**Prerequisites**
MACT 100 or equivalent.

**When Offered**
Offered in fall and spring.

(3 cr.)

**MACT 210 - Statistics for Business**
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.
(3 cr.)

MACT 231 - Calculus III

Description

Prerequisites
MACT 132

When Offered
Offered in fall and spring.
(3 cr.)

MACT 232 - Calculus IV

Description

Prerequisites
MACT 231

When Offered
Offered in fall and spring.
(3 cr.)

MACT 233 - Differential Equations

Description

Prerequisites
MACT 231

When Offered
Offered in fall and spring.
(3 cr.)

MACT 240 - Linear Algebra

Description

Prerequisites
MACT 231
When Offered
Offered in fall and spring.
(3 cr.)

MACT 301 - Seminar in Mathematics

Description
Weekly one hour seminar in different areas of Mathematics to be given by faculty or invited speakers from industries and other scientific communities.

Prerequisites
Prerequisite: junior standing

When Offered
Offered occasionally.
(1 cr.)

MACT 304 - Numerical Methods

Description

Prerequisites
CSCE 106 MACT 233 and MACT 240. Any of them can be taken concurrently.

When Offered
Offered once a year.
(3 cr.)

MACT 305 - Introduction to PDE and Boundary-Value Problems

Description

Prerequisites
MACT 233

When Offered
Offered occasionally.
(3 cr.)

MACT 306 - Applied Probability

Description
Sample space, probability axioms, combinatorial techniques, conditional probability, independence and Bayes’ theorem. Random variables. Distribution functions, moments and generating functions. Some probability distributions. Joint distribution, the Chebychev inequality and the law of large numbers. The central limit theorem and sampling distributions. Applications of probability in the social, biological, and engineering sciences.

Prerequisites
MACT 231 or concurrently.

When Offered
Offered once a year.
(3 cr.)
MACT 307 - Statistical Inference

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.

Prerequisites
MACT 306

When Offered
Offered once a year.
(3 cr.)

MACT 308 - Linear Programming

Description
Formulation of linear programming problems, graphical solutions, the simplex method. The revised simplex method, dual problems and sensitivity analysis. Transportation and assignment problems.

Prerequisites
MACT 240

When Offered
Offered occasionally.
(3 cr.)

MACT 310 - Operations Research

Description

Prerequisites
MACT 231

When Offered
Offered occasionally.
(3 cr.)

MACT 317 - Probability and Statistics

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.

Prerequisites
MACT 231 or concurrently.

When Offered
Offered in fall and spring.
(3 cr.)

MACT 321 - Mathematics of Investment
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.

Prerequisites
MACT 231 or concurrently.

When Offered
Offered once a year.
(3 cr.)

MACT 362 - Formal and Mathematical Logic

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.

Prerequisites
MACT 200 or PHIL 221 or consent of the instructor.

Cross-listed
Same as PHIL 362.

When Offered
Offered occasionally.
(3 cr.)

MACT 401 - Complex-Function Theory

Description

Prerequisites
MACT 232

When Offered
Offered once a year.
(3 cr.)

MACT 403 - Modern Algebra

Description

Prerequisites
MACT 200, MACT 240, or consent of instructor.

When Offered
Offered once a year.
(3 cr.)

MACT 406 - Stochastic Processes

Description
Introduction to stochastic process, discrete time Markov chains (DTMC). The Exponential distribution and Poisson
process, continuous-time Markov chains (CTMC). Transient and limiting behavior for both DTMC and CTMC. Single and multi channels Markovian queueing models, network of queues. Applications in actuarial science, computer science and engineering.

**Prerequisites**
MACT 233 MACT 306 or MACT 317

**When Offered**
Offered once a year.

(3 cr.)

**MACT 407 - Insurance Loss Models I**

**Description**
Risk Theory: Loss/claim severity models, creating a new model by transformation inflation, insurance coverage modifications, policy limit, loss elimination ratio, deductibles, inflation, coinsurance, loss/claim frequency models, Poisson, geometric, negative binomial, (a,b,0) and (a,b,1) classes, aggregate loss models, compound distribution, recursive formula, impact of individual claim modifications.
Credibility Theory: mixture models and Bayesian estimation, discrete and continuous mixtures, prior distribution, marginal distribution, posterior distribution, predictive distribution, Bayesian premium, Buhlmann model, credibility premium, credibility factor.

**Prerequisites**
MACT 306

**When Offered**
Offered once a year.

(3cr.)

**MACT 408 - Insurance Loss Models II**

**Description**
Non-parametric estimation for complete data: empirical estimates, Nelson-Aalen estimates; Non-parametric estimation for left truncated and right censored data Kaplan-Meier product-limit estimates, Nelson-Aalen estimates, evaluation of estimators, confidence intervals for survival and cumulative hazard functions; Kernel density models; Parametric estimation: method of moments, percentile matching, maximum likelihood estimation, applications to loss data with deductible and limit; goodness-of-fit tests; Proportional hazards model: baseline hazard rate, individual hazard rate, partial likelihood function.

**Prerequisites**
MACT 307 MACT 317 and MACT 407

**When Offered**
Offered once a year.

(3 cr.)

**MACT 409 - Selected Topics in Mathematics**

**Description**
Topics chosen according to interests of students and faculty.

**Prerequisites**
Prerequisite: consent of instructor.

**When Offered**
Offered occasionally.

**Repeatable**
May be repeated for credit if content changes.

(3 cr.)
MACT 410 - Guided Studies in Mathematics

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.

Prerequisites
Prerequisite: senior standing and consent of supervisor.

Repeatable
May be repeated for credit if content changes
(1-3 cr.)

MACT 411 - Selected Topics in Actuarial Science

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.

Prerequisites
Senior standing and consent of supervisor.

When Offered
Occasionally.

Repeatable
May be repeated for credit if content changes.
(3 cr.)

MACT 412 - Mathematical Modeling

Description
Introduction to the mathematical modeling. Deterministic models in discrete and continuous times using difference and differential equations. Probabilistic models in discrete and continuous times using discrete and continuous times Markov chains. Applications in actuarial science, biology, computer science, economics, engineering and environmental science.

Prerequisites
MACT 240 and MACT 406

When Offered
Offered once a year.
(3 cr.)

MACT 421 - Mathematics of Derivatives Pricing I

Description
Introduction to financial concepts: Forwards and futures, options, put-call parity, arbitrage and no-arbitrage strategies, pricing forwards with dividends and without dividends, description of commodity and 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.

Prerequisites
MACT 321

When Offered
Offered once a year.
(3 cr.)

**MACT 422 - Mathematics of Derivatives Pricing II**

**Description**
Continuous time model, options, options on futures, Black-Scholes formulas, Black's formula, greeks and their calculation, implied volatility, mathematics of delta hedging and delta-gamma hedging, exotic options, normal and lognormal distributions, Brownian motion, geometric Brownian, stock price process under the physical and risk-neutral probability measures, stochastic differential equations, Black-Sholes equation, Ito's lemma, risk-neutral pricing in continuous time, continuous and discrete time interest rate models.

**Prerequisites**
MACT 421

**When Offered**
Offered once a year.
(3 cr.)

**MACT 423 - Life Contingencies I**

**Description**
Mortality laws, future lifetimes, force of mortality, life table, fractional age assumptions, continuous and discrete life insurances, continuous and discrete life annuities, net single premium, annual benefit premium, loss at issue, premium principles.

**Prerequisites**
MACT 306 and MACT 321

**When Offered**
Offered once a year.
(3 cr.)

**MACT 424 - Life Contingencies II**

**Description**
Benefit reserve, representations of benefit reserve, recursive relationship, multiple life, joint life status, multiple life insurances and annuities, multiple decrement models, multiple decrement benefit, expense augmented models.

**Prerequisites**
MACT 423

**When Offered**
Offered once a year.
(3 cr.)

**MACT 427 - Applied Regression Methods**

**Description**

**Prerequisites**
MACT 240 and either MACT 307 MACT 317 or ECON 218

**When Offered**
Offered once a year.
(3 cr.)
MACT 428 - Analysis of Time Series Data

Description
This course is a continuation of MACT 427. 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.

Prerequisites
MACT 427 or ECON 318

When Offered
Offered once a year.
(3 cr.)

MACT 429 - Applied Multivariate Analysis

Description

Prerequisites
MACT 240 and either MACT 307, MACT 317 or ECON 318

When Offered
Offered once a year.
(3 cr.)

MACT 431 - Real Analysis I

Description

Prerequisites
MACT 200, MACT 232 or consent of instructor.

When Offered
Offered once a year.
(3 cr.)

MACT 432 - Real Analysis II

Description

Prerequisites
MACT 431

When Offered
Offered occasionally.
(3 cr.)

MACT 440 - Graph Theory
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: graphical probability models, dynamic programming, Bayesian Belief Propagation, and treewidth.

Prerequisites
MACT 200, and either MACT 306, MACT 317 or consent of instructor.

When Offered
Offered occasionally.
(3 cr.)

MACT 495 - Senior Thesis

Description
Methods used in obtaining and reporting research. Each student selects a topic in his/her field of interest. Under the supervision of a faculty member, he/she prepares an outline, assembles a bibliography, and makes a study plan to be followed in preparing the project. After completing the project, the student makes an oral presentation of his/her chosen topic. The written thesis is completed after criticism and suggestions.

Prerequisites
Senior standing.

When Offered
Offered occasionally.
(3 cr.)

MACT 497 - Practical Internship

Description
A minimum of four weeks of training in industrial, commercial, educational or government establishments 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.

Prerequisites
Prerequisite: Permission of the Department Chair or the Director of Actuarial Science Program

When Offered
Offered in fall, spring and summer.
(3 cr.)

MACT 604 - Advanced Numerical Methods

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.

Prerequisites
Consent of instructor.
(3 cr.)

MACT 605 - Advanced Probability with Engineering Applications

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.

**Prerequisites**
A course in probability and consent of instructor.

(3 cr.)

**MENG 215 - Mechanical Engineering Drawing**

**Description**

**Prerequisites**
ENGR 101 and ENGR 115

**Hours**
One three hour lab period

**When Offered**
Offered in fall and spring.

(1 cr.)

**MENG 327 - Engineering Materials**

**Description**

**Prerequisites**
CHEM 105 and ENGR 229

**When Offered**
Offered in fall and spring.

(3 cr.)

**MENG 339 - Fundamentals of Manufacturing Processes**

**Description**

**Prerequisites**
MENG 327

**Hours**
Two class periods and one three-hour lab period.

**When Offered**
Offered in fall and spring.

(3 cr.)

**MENG 341 - Engineering Operations Research**

**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.

**Prerequisites**
ENGR 313

**When Offered**
Offered in fall and spring.
(3 cr.)

**MENG 342 - Quality and Process Control**

**Description**
Fundamentals of statistical quality control; control charts for variables and attributes; process capability analysis; sampling plans and techniques; introduction to design of experiments.

**Prerequisites**
ENGR 313 and MACT 317

**Hours**
Two class periods and one three hour lab period.

**When Offered**
Offered in fall and spring.
(3 cr.)

**MENG 344 - Work Analysis and Design**

**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.

**Prerequisites**
MENG 339

**When Offered**
Offered in fall.
(3 cr.)

**MENG 346 - Engineering and Project Management**

**Description**

**Prerequisites**
MACT 317

**When Offered**
Offered in fall.
(3 cr.)

**MENG 355 - Mechanics of Materials**

**Description**

**Prerequisites**
ENGR 229 and MENG 215
When Offered
Offered in fall and spring.
(3 cr.)

MENG 356 - Mechanical Design I

Description
Prerequisites
ENGR 214 MENG 215 and MENG 355
Hours
Two class periods and one three-hour design and analysis session
When Offered
Offered in fall and spring.
(3 cr.)

MENG 361 - Fundamentals of Thermodynamics

Description
Prerequisites
ENGR 261 and CHEM 105
When Offered
Offered in fall and spring.
(3 cr.)

MENG 362 - Applied Fluid Mechanics

Description
Dimensional analysis, fluid measurements, compressible flow, pipe network and water hammer, turbo machinery, pumps and turbines.
Prerequisites
MENG 361
Hours
Two class periods and one three-hour lab period
When Offered
Offered in fall and spring.
(3 cr.)

MENG 365 - Applied Thermodynamics

Description
Prerequisites
MENG 361
Hours
Two class periods and one three-hour lab period.

**When Offered**
Offered in fall and spring.
(3 cr.)

**MENG 372 - Mechanical Systems**

**Description**
Linkage synthesis, position, velocity, and acceleration of mechanisms, cams, gears and gear trains, machine dynamics, rotating and reciprocating machines, dynamic balancing.

**Prerequisites**
ENGR 214 and ENGR 313.

**When Offered**
Offered in fall and spring.
(3 cr.)

**MENG 375 - System Dynamics**

**Description**

**Prerequisites**
PHYS 215 and MENG 372.

**When Offered**
Offered in fall and spring.
(3 cr.)

**MENG 411 - Turbo-Machinery**

**Description**

**Prerequisites**
MENG 362

**When Offered**
Offered in fall.
(3 cr.)

**MENG 412 - Power Plant Technology**

**Description**

**Prerequisites**
MENG 365 and MENG 466 or concurrent.

**When Offered**
Offered in fall.
(3 cr.)

**MENG 413 - Design of Renewable Energy Systems**

**Description**

**Prerequisites**
MENG 365 and MENG 466.

**When Offered**
Offered in spring.
(3 cr.)

**MENG 415 - Internal Combustion Engines**

**Description**

**Prerequisites**
MENG 362 and MENG 365.

**When Offered**
Offered in spring.
(3 cr.)

**MENG 416 - Design of Mechanical Systems in Building**

**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.

**Prerequisites**
MENG 365 and MENG 466.

**When Offered**
Offered in fall.
(3 cr.)

**MENG 417 - Refrigeration and Air-conditioning**

**Description**

**Prerequisites**
MENG 466 or concurrent and MENG 365.

**When Offered**
Offered in spring.
(3 cr.)

**MENG 421 - Ceramics and Composites**

**Description**
Structure, processing (powder synthesis, characterization, mixing and size reduction), micro-structure and property relationships and their applications in the design and production of ceramic nanomaterials and nanocomposites for various applications.

**Prerequisites**
MENG 339

**Hours**
Two class periods and one three hour lab period.

**When Offered**
Offered in spring.
(3 cr.)

**MENG 425 - Polymers and Composites**

**Description**

**Prerequisites**
MENG 339

**Hours**
Two class periods and one three-hour laboratory

**When Offered**
Offered in spring.
(3 cr.)

**MENG 426 - Metals, Alloys and Composites**

**Description**

**Prerequisites**
MENG 339

**Hours**
Two class periods and one three-hour lab period

**When Offered**
Offered in fall.
(3 cr.)

**MENG 427 - Failure of Mechanical Components**

**Description**

**Prerequisites**
MENG 339.
When Offered
Offered in spring.
(3 cr.)

MENG 428 - Selection of Materials and Processes for Design

Description

Prerequisites
MENG 339 and MENG 356

When Offered
Offered in fall and spring.
(3 cr.)

MENG 429 - Nanostructured Materials

Description

Prerequisites
MENG 339

Cross-listed
Same as MENG 530.

When Offered
Offered spring.
(3 cr.)

MENG 432 - Materials, Processing, and Design

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.

Prerequisites
MENG 339

Hours
Two class periods and one three-hour laboratory

When Offered
Offered in fall.
(3 cr.)

MENG 436 - Selected Topics in Materials and Manufacturing

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.

**Prerequisites**
MENG 339

**When Offered**
Offered occasionally.

(3 cr.)

**MENG 439 - Advanced Manufacturing Processes**

**Description**
Nontraditional manufacturing processes, such as laser welding and cutting, spark erosion and water jet machining. Automation of manufacturing processes. Numerically-controlled machine tools. NC programming. Economics of nontraditional and automated manufacturing.

**Prerequisites**
MENG 339

**Hours**
Two class periods and one three-hour lab period.

**When Offered**
Offered in fall.

(3 cr.)

**MENG 441 - Decision Support in Engineering Systems**

**Description**
Interactive computer-based engineering decision support systems (DSS), Design and development, informational database, mathematical models including nonlinear, goal and dynamic programming problems, queuing and decision analysis, heuristics and user interface.

**Prerequisites**
MENG 341 and MACT 317.

**When Offered**
Offered occasionally.

(3 cr.)

**MENG 442 - Quality and Reliability Engineering**

**Description**
Quality in design, tolerances, national and international standards, selection and measurement of process quality parameters, quality costs, establishment of quality assurance labs in service and manufacturing industries, calibration, life testing and failure analysis, basic concepts of systems and component reliability and quality engineering cases and applications.

**Prerequisites**
MENG 342

**When Offered**
Offered in spring.

(3 cr.)

**MENG 443 - Systems Simulation**

**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.

**Prerequisites**
MENG 342

**When Offered**
Offered occasionally.

(3 cr.)

**MENG 445 - Production and Inventory Control**

**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.

**Prerequisites**
ENGR 313 and ENGR 345

**When Offered**
Offered in fall and spring.

(3 cr.)

**MENG 447 - Manufacturing System Automation**

**Description**
Computer assisted manufacturing systems NC, CNC, DNC, robotics, material handling, group technology, flexible manufacturing systems, process planning and control.

**Prerequisites**
MENG 339

**Hours**
Two class periods and one three-hour lab period

**When Offered**
Offered in spring.

(3 cr.)

**MENG 448 - Facilities Planning**

**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.

**Prerequisites**
MENG 339

**When Offered**
Offered in spring.

(3 cr.)

**MENG 449 - Maintenance Management Systems**

**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.

**Prerequisites**
ENGR 345

**When Offered**
Offered in fall.
(3 cr.)

MENG 451 - Computer-Aided Design and Prototyping

Description

Prerequisites
Senior standing, MENG 215 and MENG 356

Hours
Two class periods and one three-hour lab period.

When Offered
Offered in spring.
(3 cr.)

MENG 453 - Finite Element Method and Applications in Design

Description

Prerequisites
MENG 355 and ENGR 313

Hours
Two class periods and one three-hour lab period.

When Offered
Offered in fall.
(3 cr.)

MENG 454 - Finite Element Method in Dynamic Analysis and Design

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.

Prerequisites
MENG 453

When Offered
Offered occasionally.
(3 cr.)

MENG 455 - Design of Engineering Systems

Description
Elements of system architecture, product versus process-driven design objectives, design of systems, synthesis and analysis in systems design, case studies.

Prerequisites
MENG 356

When Offered
Offered in occasional.
(3 cr.)

**MENG 457 - Mechanical Design II**

**Description**

**Prerequisites**
MENG 356 and MENG 372

**Hours**
Two class periods and one three-hour design and analysis session.

**When Offered**
Offered in fall and spring.

(3 cr.)

**MENG 458 - Integrated Design**

**Description**

**Prerequisites**
MENG 339 and MENG 356

**When Offered**
Offered in fall.

(3 cr.)

**MENG 466 - Heat Transfer**

**Description**

**Prerequisites**
ENGR 313 and MENG 362

**Hours**
Three class periods and one three-hour laboratory period

**When Offered**
Offered in fall and spring.

(4 cr.)

**MENG 475 - Applied Vibration Measurements, Analysis and Control**

**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.

**Prerequisites**
Senior standing and MENG 375

**Hours**
Two class periods and one three-hour laboratory period  
When Offered  
Offered in fall.  
(3 cr.)

**MENG 476 - Automatic Control Systems**

**Description**  

**Prerequisites**  
Senior standing and MENG 375.  
When Offered  
Offered in spring.  
(3 cr.)

**MENG 477 - Robotics: Design, Analysis and Control**

**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.

**Prerequisites**  
ENGR 214.  
When Offered  
Offered in fall.  
(3 cr.)

**MENG 478 - Microcontrollers and Mechatronics systems**

**Description**  
Mechatronics and digital systems, Digital logic design, Microprocessor and Microcontroller architecture, Embedded systems, Interfacing techniques, A/D and D/A conversion, Memory addressing techniques, Interrupt techniques, I/O needs and expansion, Timers, Introduction to assembly, and project application work.

**Prerequisites**  
PHYS 215

**Hours**  
Two class periods and one three-hour laboratory period  
When Offered  
Offered in fall.  
(3 cr.)

**MENG 479 - Integrated Design of Electromechanical Systems**

**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 Electropneumatic control. Design, control and application of electromechanical systems, Integrated Mechatronics design project.

**Prerequisites**
MENG 375

**Hours**
Two class periods and one three-hour laboratory period.

**When Offered**
Offered in spring.

(3 cr.)

**MENG 480 - Special Problems in Engineering**

**Description**
Independent study in various problem areas of engineering may be assigned to individual students or to groups. Readings assigned and frequent consultations held.

**Prerequisites**
Prerequisite: approval of department chair.

**When Offered**
Offered in fall and spring.

**Repeatable**
May be repeated for credit if content changes

(1-3 cr.)

**MENG 490 - Senior Project I**

**Description**
A capstone project. Topics are selected by groups of students according to their area of interest and the advisors' approval. Projects address solutions to open ended applications using an integrated engineering approach. Participants give an oral presentation of the main results achieved. After criticism and suggestions, they submit a written report.

**Prerequisites**
Prerequisite: senior standing and completion of all ENGR in addition to a minimum of 18 credits of MENG.

**When Offered**
Offered in fall and spring.

(1 cr.)

**MENG 491 - Senior Project II**

**Description**
Participating students continue the work on the project topic selected in MENG 490. Participants give an oral presentation of the main results achieved. After criticism and suggestions, they submit a written report.

**Prerequisites**
MENG 490

**When Offered**
Offered in fall and spring.

(2 cr.)

**MENG 492 - Selected Topics in Mechanical Engineering**

**Description**
Specialized topics in mechanical engineering will be discussed, e.g. energy conversion and transmission, nuclear engineering, computer applications in mechanical engineering, composite materials, corrosion, and protection.
Prerequisites
Prerequisite: senior standing.

When Offered
Offered occasionally.

(3 cr.)

MENG 494 - Selected Topics in Design

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.

Prerequisites
Prerequisite: senior standing in mechanical engineering.

When Offered
Offered in spring.

(3 cr.)

MENG 497 - Industrial Training

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.

Prerequisites
Prerequisite: Senior standing and completion of all ENGR in addition to a minimum of 18 credits of MENG.

When Offered
Offered in fall.

(1 cr.)

MENG 517 - Engineering Systems Analysis and Design

Description
Introduction, system design process, system modelling and optimization, design for operational feasibility, artificial intelligence and expert systems, applications.

(3 cr.)

MENG 521 - Advanced Topics in Mechanical Behavior of Engineering Materials

Description

(3 cr.)

MENG 522 - Materials in Design and Manufacturing

Description
Interrelationship of design, materials and manufacturing. Control of material properties to meet design and
(3 cr.)

**MENG 523 - Physical Metallurgy**

**Description**
(3 cr.)

**MENG 524 - Electronic Phenomena in Solids**

**Description**
Quantization and energy barrier, central field problem; free electron models of solids; specific heat, susceptibility, emission; electron transport in electrical and magnetic fields; optical phenomena: transmittance, reflectance, dielectric constant, band models of solids, determination of fermi surface semiconductors; mobility; impurity states, carrier lifetime; fundamental theory and characteristics of elemental and compound semiconductors. Semiconductor nanotechnology.
Cross-listed
Same as NANO 502.
(3 cr.)

**MENG 525 - Deformation and Fracture of Materials**

**Description**
Fundamental concepts describing the mechanics and mechanisms of plastic deformation under different conditions of temperature, time, and strain rates. The mechanical and metallurgical aspects of crack nucleation and propagation under different loading conditions and in different environments. Materials design for safe structures.
(3 cr.)

**MENG 526 - Computer Methods in Materials Engineering**

**Description**
Applications of computer and modeling techniques to the study of materials systems and processes. Examples of the topics discussed are: Behavior of multi phase materials and casting and working process.
(3 cr.)

**MENG 527 - Composite Materials: Mechanics, Manufacturing, and Design**

**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.
(3 cr.)
MENG 528 - Advanced Testing and Characterization Techniques

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 calorimetry 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 503
(3 cr.)

MENG 529 - Failure Analysis and Prevention

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.

(3 cr.)

MENG 530 - Nanostructured Materials

Description

Cross-listed
Same as MENG 429.

When Offered
offered in spring
(3 cr.)

MENG 531 - Fabrication of Nanomaterials For Films And Devices

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 504.

When Offered
occasionally.
(3 cr.)

MENG 532 - Simulation and Modeling for Nanoscale Materials and Systems
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 502.
(3 cr.)

MENG 534 - Materials for Energy Conversion and Storage

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 533.
(3 cr.)

MENG 535 - Biomaterials

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; drug delivery, and cell-guiding surfaces.

Cross-listed
Same as NANO 630.
(3 cr.)

MENG 541 - Integrated Manufacturing Systems

Description
Computer aided manufacturing, automation, flexible manufacturing systems, numerical control machines, computerized process planning, information systems in a plant, selection of automated systems.
(3 cr.)

MENG 542 - Total Quality Management

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.
(3 cr.)

MENG 543 - Systems Modeling and Optimization
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.
(3 cr.)

MENG 545 - Production Systems Design

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.
(3 cr.)

MENG 548 - Facilities Planning and Design

Description
Location evaluation for plants, warehouses, and facilities, computerized layout design, selection and installation of material handling equipment, planning for expansion, modeling and analysis of facility layout: Quadratic assignment approach, graph theoretic approach, decomposition of large facilities, locating new facilities.
(3 cr.)

MENG 553 - Advanced Computer Aided Design

Description
(3 cr.)

MENG 554 - Advanced Stress Analysis in Design and Manufacturing

Description
(3 cr.)

MENG 555 - Analysis and Design of Dynamic Systems

Description
(3 cr.)

MENG 557 - Engineering Design Methodologies
Catalog 2012-2013 Extract

Description
Conceptual design: levels, generic concepts, main and subconcepts. The preliminary design stage. Design for reliability. Design optimization. Examples and a case study.
(3 cr.)

MENG 558 - Applied Finite Element Analysis for Engineers

Description
(3 cr.)

MENG 560 - Applied Control, Vibration and Instrumentations

Description

Prerequisites
Instructor Consent.
(3 cr.)

MENG 561 - Robotics: Kinematics, Dynamics and Control

Description

Prerequisites
Instructor Consent.

Cross-listed
Same as RCSS 501.
(3 cr.)

MENG 562 - Embedded Real Time Systems

Description
systems. Networked embedded systems and integrated control.

**Prerequisites**
Instructor Consent.

**Cross-listed**
Same as RCSS 502.
(3 cr.)

**MENG 563 - Modern Control Design**

**Description**

**Prerequisites**
Instructor consent.

**Cross-listed**
Same as RCSS 503.
(3 cr.)

**MENG 564 - Autonomous Robotics: Modeling, Navigation and Control**

**Description**

**Prerequisites**
Instructor Consent.

**Cross-listed**
Same as RCSS 521.
(3 cr.)

**MENG 573 - Cogeneration and Energy Storage**

**Description**
Introduction to cogeneration; cogeneration technologies; issues and applications; introduction to energy storage; types; applications in renewable energy and conventional systems; economic analysis.

**Prerequisites**
B.Sc. level Mechanical engineering courses in Thermodynamics, Heat transfer, Fluid mechanics and applications, or equivalent.
(3 cr.)

**MENG 575 - CFD and Turbulence Modeling**
Description
Introduction to CFD, basic equations of Flow, FV method, SIMPLE algorithm and variants. Turbulence modeling. Introduction to PHOENICS/FLUENT code, application to case studies.

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.
(3 cr.)

MENG 580 - Independent Study in Engineering

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).
(3 cr.)

MENG 592 - Advanced Topics in Engineering

Description
Topics to be chosen every year according to specific interests.

Prerequisites
Prerequisite: consent of instructor.

Repeatable
May be taken for credit more than once if content changes.
(3 cr.)

MENG 593 - Capstone Project

Description
Students are required to attend the library and writing modules of ENGR 590 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.
(3 cr.)

MENG 599 - Research Guidance Thesis

Description
Consultation on problems related to student thesis.

Repeatable
Must be taken twice for credit.
(3 cr.)

MENG 615 - Continuum Mechanics
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.

Prerequisites
MENG 355

When Offered
Offered in fall.
(3 cr.)

MENG 620 - Nonlinear and Adaptive Control

Description

Prerequisites
Consent of instructor.

Cross-listed
Same as RCSS 533.
(3 cr.)

MENG 660 - Sustainability of Thermal Systems

Description
Energy systems; energy demand; energy audit; sustainable development; energy efficiency; energy management.

(3 cr.)

MENG 670 - Advanced Transport Phenomena

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.

Prerequisites
MENG 362 , MENG 466 and CFD course covering numerical solutions of flow equations.
(3 cr.)

MENG 681 - Stochastic Simulation

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.

Prerequisites
Graduate level knowledge of probability, statistics and stochastic processes.  
(3 cr.)

**MENG 699 - Research Guidance Dissertation**

**Description**  
Consultation on problems related to student thesis. To be taken 11 times for credit.  
(3 cr.)

**MEST 400 - Individual Study and Selected Readings**

**Description**  
Guided reading, research, and discussion based on a subject of mutual interest to a student and faculty member.  
**Prerequisites**  
Prerequisite: Consent of instructor and department on the basis of a well-defined proposal.  
(1-3 cr.)

**MEST 430 - Special Topics in Middle East Studies**

**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.  
(3 cr.)

**MEST 505 - Palestinian Refugee Issues**

**Description**  
This interdisciplinary 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.  
**Cross-listed**  
Same as MRS 505.  
(3 cr.)

**MEST 569 - A Critical Introduction to Middle East Studies**

**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.  
(3 cr.)

**MEST 570 - Interdisciplinary Seminar in Middle East Studies**

**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.

Prerequisites
Prerequisite: completion of 24 credit hours toward the degree or consent of program director.

When Offered
Offered in spring.
(3 cr.)

MEST 580 - Selected Topics

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.
(3 cr.)

MEST 582 - Independent Study and Readings

Description
Guided individual readings and/or research on a subject of mutual interest to the student and faculty member.

Prerequisites
Pre-requisites: completion of one semester and Program approval required.

When Offered
Offered in fall and spring.
(3 cr.)

MEST 588 - Comprehensives

Description
Individual consultation for students preparing for the comprehensive examination.

When Offered
Offered in fall and spring.
(no cr.)

MEST 598 - Research Methods

Description
A seminar designed to help students formulate and execute an MA thesis proposal.
(3 cr.)

MEST 599 - Thesis

When Offered
Offered in fall and spring.
(no cr.)

MGMT 300 - Business Environment and Ethics
Description
Perspectives on the business environment and the ethical issues facing business. Organizational responses to environmental and ethical issues. Social responsibility of business firms.

Prerequisites
Any course in Business.

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.

(3 cr.)

MGMT 307 - Management Fundamentals

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 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.

(3 cr.)

MGMT 311 - Business Law (Commercial & Fiscal)

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.

Prerequisites
MGMT 307

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.

(3 cr.)

MGMT 404 - Human Resources Management

Description
Presents the role of human resources in modern organizations. This includes topics such as human resource strategies,
job analysis, manpower planning, recruitment and selection, interviewing techniques, training and development, performance appraisal, establishing pay plans incentives and new issues in the area of human resources management.

**Prerequisites**

MGMT 307

**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.

(3 cr.)

**MGMT 427 - Organization Development**

**Description**

Inter-group dynamics, organizations as systems, process of organizational development, intervention strategies, organizational diagnosis, team building, structural intervention, behavioral change, resistance to change, and implementation strategies.

**Prerequisites**

MGMT 307

**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.

(3 cr.)

**MGMT 470 - Special Topics in Management**

**Description**

Considers selected topics of current relevance in management.

**Prerequisites**

Prerequisite: Consent of Instructor.

**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.

(3 cr.)

**MGMT 475 - Independent Study in Management**

**Description**

Guided readings, research, and discussions on specific selected topic in Management.

**Prerequisites**

Prerequisites: Senior standing and consent of MGMT unit head and chair.

**When Offered**
Offered occasionally.

Notes
Enrollment 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.

(1-3 cr.)

MGMT 480 - Business Planning and Strategy

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.

Prerequisites
Prerequisite: Graduating Senior.

When Offered
Offered in fall and spring.

Notes
Enrollment 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.

(3 cr.)

MGMT 501 - Business Communication

Description
It explores the strategies and techniques of one of the most crucial skills needed for success in business. The course introduces students to theories of communication and how to translate theories into complete strategies for communicating with diverse audiences. The course focuses on written communications including memoranda, letters, executive summaries, and business and research reports. The course also focuses on oral communications including listening, presentation skills, interviewing, conducting meetings, and interpersonal communication. Course content also includes negotiation, intercultural communication, and the importance of communication in team building.

When Offered
Offered in fall and spring.

(3 cr.)

MGMT 502 - Managing in a Dynamic Environment

Description
Managing in today’s ever-changing dynamic environment is a challenge. To ensure competitiveness and sustainability, managers would acquire new skills and knowledge. This course covers topics such as management fundamentals, managing the local and global environment, emotional intelligence, organizational learning, ethical considerations, and value pluralism in management.

When Offered
Offered in fall and spring.

(3 cr.)

MGMT 503 - Leading Change in Organizations
Description
Change in business is pervasive. It could come about as a result of the dynamics in the external environment of the company or as a result of the growth and transition from a small entrepreneurial firm to an organization with enlarged scale and scope. Managers need to be able to initiate, sustain and successfully lead the process of change in their organizations. Innovation and creativity are key enabling factors in this process. Processes of introducing change in business organizations, techniques and tools of introducing change for the purpose of increasing efficiency and effectiveness and enhancing value creation, as well as change strategies to meet environmental threats are some of the topics that are explored in this course.

Prerequisites
Consent of instructor.

When Offered
Offered in fall.
(3 cr.)

MGMT 504 - Human Capital Strategy

Description
This course focuses on advanced study of dynamics of personality, primary group, organization and culture, the nature of conflict and motivation, interpersonal and group behavior, and critical analysis of behavior literature and its application to the field of management.

When Offered
Offered in spring.
(3 cr.)

MGMT 505 - Organizational Design

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.

Prerequisites
MGMT 502 or equivalent.

When Offered
Offered occasionally.
(3 cr.)

MGMT 506 - Management of International Business Organizations

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.
(3 cr.)

MGMT 507 - Global Business Strategy
Description
This course brings the tools and information gained in prior courses in international business to bear on managerial problems in various international and Middle Eastern environments. The course makes extensive use of cases which covers different types of global business strategies.

Prerequisites
MGMT 506 or consent of instructor.

When Offered
Offered occasionally.

(3 cr.)

MGMT 508 - Strategic Management

Description
This is the capstone course for the MBA program. The course covers alternative models of strategy development and the process of formulating, implementing, and evaluating business strategies. Reaction of business firms to environmental changes, and threats are emphasized.

Prerequisites
Consent of instructor.

When Offered
Offered in fall and spring.

Notes
This is the capstone course for the MBA program.

(3 cr.)

MGMT 509 - Leadership

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.

Prerequisites
MGMT 502

When Offered
Offered occasionally.

(3 cr.)

MGMT 510 - Entrepreneurship and Innovation

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.

**Cross-listed**
Same as EENG 573.
(3 cr.)

**MGMT 511 - Strategic Management of Innovation**

**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.

**Cross-listed**
Same as EENG 511.
(3 cr.)

**MGMT 517 - Technology and Innovation Management**

**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.

**Prerequisites**
Prerequisite: Core requirements met and consent of instructor.

**Cross-listed**
Same as MOIS 517.
(3 cr.)

**MGMT 570 - Selected Topics in Management**

**Description**
It considers selected topics of current relevance in Management.

**Prerequisites**
Prerequisites: consent of the instructor.

**When Offered**
Offered occasionally.
(3 cr.)

**MGMT 575 - Independent Study in Management**

**Description**
Guided readings, research, and discussions on specific selected topic in Management.

**Prerequisites**
Prerequisite: Consent of MGMT unit head and chair.

**When Offered**
Offered occasionally.
(1-3 cr.)

**MKTG 302 - Principles of Marketing**

**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 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.

(3 cr.)

**MKTG 405 - Marketing Research**

**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.

**Prerequisites**
MKTG 302 and MACT 112

**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.

(3 cr.)

**MKTG 408 - Marketing Communications Management**

**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.

**Prerequisites**
MKTG 302
When Offered
Offered 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.

(3 cr.)

MKTG 410 - Consumer-Buyer Behavior

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.

Prerequisites
MKTG 302
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.

(3 cr.)

MKTG 411 - Professional Selling

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.

Prerequisites
MKTG 302
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.

(3 cr.)

MKTG 412 - International Marketing

Description
The marketing problems and opportunities of the exporter, licensor, or manufacturer in a foreign country. Topics include factors in assessing world marketing opportunities and the international marketing mix.

Prerequisites
MKTG 302

Cross-listed
Same as INTB 412

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.

(3 cr.)

MKTG 414 - Services Marketing

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.

Prerequisites
MKTG 302

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.

(3 cr.)

MKTG 416 - E-Marketing

Description
Principles, best practices, and hands-on applications of E-Marketing. The course is designed to hone skills in E-Marketing, including developing a comprehensive E-Marketing plan and creating an interactive website.

Prerequisites
MKTG 302

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.

(3 cr.)

MKTG 418 - Principles of Public Relations

Description
An overview of the public relations profession in the Middle East. Public-relations principles and techniques, current public relations problems, possible solutions.

Prerequisites
MKTG 302

**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.

(3 cr.)

**MKTG 420 - Advanced Marketing Research**

**Description**
This course is designed to strengthen students’ abilities to perform marketing research at a level superior to that of most marketing graduates worldwide. The topics offered will be chosen with particular emphasis on their value to Egyptian and regional organizations. Such topics include the qualitative techniques - focus groups, long interviews, and participant observation; and advanced widely accepted quantitative statistical techniques for marketing decision making.

**Prerequisites**
MKTG 405

**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.

(3 cr.)

**MKTG 470 - Special topics in Marketing**

**Description**
Considers selected topics of current relevance in marketing.

**Prerequisites**
Prerequisite: Consent of Instructor.

**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.

(3 cr.)

**MKTG 475 - Independent Study in Marketing**

**Description**
Guided readings, research, and discussions on specific selected topic in Marketing.

**Prerequisites**
Prerequisites: Senior standing and consent of MKTG unit head and chair.

**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.

(1-3 cr.)

**MKTG 480 - Marketing Strategy**

**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.

**Prerequisites**
MKTG 405, MKTG 410, FINC 303 and Senior standing.

**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.

(3 cr.)

**MKTG 520 - Marketing Management**

**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.

(3 cr.)

**MKTG 521 - Marketing Research Methods**

**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.

**Prerequisites**
MKTG 520

**When Offered**
Offered occasionally.

(3 cr.)

**MKTG 522 - Marketing Channel Strategies**

**Description**
This course emphasizes the means by which distribution relationships can be effectively managed. This includes manufacturers, wholesales, retailers, and other intermediaries. Particular attention is given to examining the behavioral dimensions of channel relations, the roles of channel members, their use of power, and the conflicts that may arise among them. Case studies are commonly used for illustrative and analytical purposes.

**Prerequisites**
MKTG 520

**When Offered**
Offered Occasionally.

(3 cr.)

**MKTG 523 - Sales Force Management**

**Description**
This course focuses on the strategic and tactical aspects of sales force management. The course is concerned with how to manage a sales force rather than with how to sell with the objective of maximizing the return to the organization. The emphasis in this course is on business-to-business rather than business-to-consumer relationships. Topics covered include salesperson effectiveness, deployment, motivation, organizational design, compensation, and evaluation

**Prerequisites**
MKTG 520

**When Offered**
Offered occasionally.

(3 cr.)

**MKTG 524 - Global Marketing**

**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.
Prerequisites
MKTG 520

When Offered
Offered occasionally.

(3 cr.)

MKTG 526 - Integrated Marketing Communication

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.

Prerequisites
MKTG 520

When Offered
Offered occasionally.

(3 cr.)

MKTG 530 - Strategic Marketing

Description
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.

Prerequisites
MKTG 520

When Offered
Offered occasionally.

(3 cr.)

MKTG 570 - Contemporary Topics in Marketing

Description
Recent topics in marketing.
**Prerequisites**
Consent of the instructor.

**When Offered**
Offered occasionally.

(3 cr.)

**MKTG 575 - Independent Study in Contemporary Topics in Marketing**

**Description**
Readings and research on recent topics in marketing

**Prerequisites**
Consent of MKTG unit head and Director of MBA Program.

**When Offered**
Offered occasionally.

(1-3 cr.)

**MOIS 305 - Introduction to Information Systems/Technology**

**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 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.

(3 cr.)

**MOIS 406 - Management Information Systems and Database Management**

**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.

**Prerequisites**
MOIS 305.

**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.

(3 cr.)
MOIS 423 - Geographic Information Systems (GIS)

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.

Prerequisites
MOIS 305
(3 cr.)

MOIS 430 - Business Information Systems Analysis and Development

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.

Prerequisites
MOIS 305

When Offered
Offered in 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.

(3 cr.)

MOIS 432 - Information & Decision Support Systems

Description
The course is targeted to senior MOIS students who want more expertise in developing, managing and using Decision Support Systems and applications. This course will examine the design, development and implementation of information technology 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.

Prerequisites
MOIS 305

When Offered
Offered in fall & 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.

(3 cr.)

MOIS 433 - Marketing Information Systems
Description
This course focuses on the issues relating to the management and use of information systems in order to support marketing management decision-making with emphasis on the areas of products, pricing, distribution, promotion, systems analysis, and functional information systems. Students learn the importance of: (1) developing an effective data base; (2) conducting marketing research studies; (3) creating a marketing plan; (4) using data mining techniques to extract data from data warehouses and build prognostic models and (5) incorporating technology tools to develop marketing information systems and decision support systems.

Prerequisites
MOIS 305

When Offered
Offered in fall & 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.

(3 cr.)

MOIS 434 - Financial Information Systems

Description
The content of this course will vary to keep pace with changing business needs and information technologies that is an integral part of any business aspect in Finance. Topics to be covered will apply the theoretical concepts taught in Finance by practically using advanced information systems approaches.

Prerequisites
MOIS 305

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.

(3 cr.)

MOIS 435 - Introduction to Electronic Business

Description
The Internet, as a disruptive innovation, is changing the landscape of business operation. This course provides an introduction to the basics of modern business in a networked environment. Managers and decision makers need a broad understanding of the concepts, technologies, tools, techniques and strategies associated with electronic business to be able to exploit the business development potentials of the new information based society. The course focuses on important electronic business issues including the concept, marketing, advertising, strategy formulation and web development and related infrastructure issues, as well as the advantages and disadvantages of this form of business operation, the infrastructures in place to support this type of electronic business, and the global economy within which it takes place.

Prerequisites
MOIS 305

When Offered
Offered in fall & 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.
MOIS 444 - Accounting Information Systems

Description
This course focuses on application of information systems/information technology in the fields of accounting. It starts with the conceptual foundations of accounting information systems and information technology in general and covers control and audit. It also focuses on accounting information systems applications and explores the computerization of the traditional transaction processing cycles in detail. It requires the students to use their knowledge in accounting to analyze and design an accounting information systems.

Prerequisites
MOIS 305

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.

MOIS 450 - Strategic Information Systems

Description
The course aims to provide students with an understanding of the links between the strategic issues of the organization and the role and implications of management information systems. The course focuses on the strategic impacts different information systems can have on productivity, performance, competitiveness and organizational growth.

Prerequisites
MOIS 305

When Offered
Offered occasionally.

MOIS 466 - Human Computer Interaction (HCI)

Description
This course provides a business-oriented approach to Human Computer Interaction (HCI). It merges theories and concepts with methods of design, evaluation, and implementation of any interactive business system such as enterprise resource planning (ERP), organizational decision support, project management, and other business applications. HCI 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 HCI design, but also design an interactive system that enables the users to do tasks quickly and work in an environment of proficiency and satisfaction.

Prerequisites
MOIS 305

MOIS 470 - Special Topics in Management of Information Systems

Description
Considers selected topics of current relevance in management of information systems.
Prerequisites
Prerequisite: Consent of Instructor.

When Offered
Offered occasionally.

Notes
Enrollment 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.

(3 cr.)

MOIS 475 - Independent Study in Management of Information Systems

Description
Guided readings, research, and discussions on specific selected topic in Management of Information Systems.

Prerequisites
Prerequisites: Senior standing and consent of MOIS unit head and chair.

When Offered
Offered occasionally.

Notes
Enrollment 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.

(1-3 cr.)

MOIS 477 - Systems Integration

Description
This course emphasizes the value of integration between information systems in modern organizations. This is achieved by having different computing systems and software applications are linked in seamless physical and/or functional integration. The main objective of the course is to provide students with clear understanding of the issues involved in systems integration. In this course, the concepts of developing information systems will be stressed while keeping the focus on strategies and methods for merging a set of interdependent systems together. The course will explore variety of tools and techniques for systems integration while at the same time tackling management best practices for system integration.

Prerequisites
MOIS 305

(3 cr.)

MOIS 499 - Internship Project

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. Participating students will be required to select a project topic in MOIS according to their subject of interest and the availability of advisors. Subject areas include but are not limited to human resources, finance, marketing, electronic commerce and accounting. Students should submit a plan followed by progress reports and finally deliver the project document and presentation of the findings.

Prerequisites
Prerequisite: completion of all MOIS core courses.

When Offered
Offered in fall and spring.

Notes
Enrollment in courses is limited, and priority is given to students seeking the Bachelor of Business Administration degree or the Bachelor of Accounting degree, students enrolling in courses specified as collateral requirements in other majors, and students who have declared business administration as a minor.

(3 cr.)

MOIS 508 - Information Systems in Organizations: Management in the Information Age

Description
The course examines design principles, information process modeling and analysis methodologies, as well as a range of underlying information technologies (e.g., transaction processing, data mining, data warehousing, knowledge management, and web server design) that will help the modern organization or community maximize its strategic objectives and business operations management. The course also demonstrates anecdotal success and failure cases as lessons for future IS projects.

When Offered
Offered in fall and spring.

(3 cr.)

MOIS 517 - Technology and Innovation Management

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.

Prerequisites
Prerequisite: Core requirements met and consent of instructor.

Cross-listed
Same as MGMT 517.

(3 cr.)

MOIS 549 - Systems Analysis, Design, and Implementation

Description
The purpose of the course is twofold. First, the course familiarizes students with the issues involved in conceiving, designing, building, and maintaining the kinds of large-scale, complex information systems required for commercial and governmental settings. Second, the course provides students with the experience working with different tools and techniques in systems analysis, design, and implementation. Special focus will be given to modern object-oriented design methodologies, Unified Modeling Language (UML), and modern Computer Aided Software Engineering (CASE) tools.

Prerequisites
MOIS 508
When Offered
Offered in fall and spring.
(3 cr.)

MOIS 550 - Information Technology

Description
This course surveys the building blocks of information technology including hardware, software, networks, and people and business applications while emphasizing an open systems approach that considers market trends such as globalization, time and information technology integration.

Prerequisites
MOIS 508
When Offered
Offered occasionally.
(3 cr.)

MOIS 551 - Electronic Business: Doing Business in the Digital Economy

Description
This course demonstrates how various information and communication technology tools and applications such as the Internet have created new business models, removed time and distance barriers, introduced new cost structures and redefined value chains relocating businesses from marketplace to market space. The course covers different models including business-to-business and business-to-consumer, in addition to strategy formulation, digital marketing strategies and advertising models, analysis and design of websites, infrastructure and security requirements, and economics of online transactions and applications.

Prerequisites
MOIS 508 and MOIS 550
When Offered
Offered occasionally.
(3 cr.)

MOIS 555 - Information Strategy

Description
Information is an integral part in organizational success paralleling the importance of its technology component. This course explores the importance and value proposition of an information strategy and its relationship with other organizational strategies.

Prerequisites
MOIS 508 and MOIS 550
When Offered
Offered occasionally.
(3 cr.)

MOIS 570 - Advanced Topics (Next Generation Technologies)

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.

Prerequisites
Consent of instructor.

When Offered
Offered occasionally.
(3 cr.)

MOIS 575 - Independent Research in Management of Information Systems/Technology

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.

Prerequisites
Consent of MOIS unit head and Director of MBA Program.

When Offered
Offered occasionally.
(1-3 cr.)

MRS 500 - Migration & Refugee Movements in the Middle East and North Africa

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.
(3 cr.)

MRS 501 - International Migration & Development

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.

(3 cr.)

**MRS 502 - Comparative Migration Policies**

**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.

(3 cr.)

**MRS 503 - Migrants & Refugees in the International System**

**Description**
The course attends to the consequence for the nation state and for the international system of migration and refugee movement. The course focuses on historical and contemporary population movements. By connecting historical and contemporary population movements to, among others, colonization, globalization, nationalism, citizenship, human rights and minority politics, the course interrogates the relationship between migrants, refugees, the nation-state, and the international system.

(3 cr.)

**MRS 504 - Gender and Migration**

**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. This is a joint course offered by the Center for Migration Studies and Refugee Studies and the Institute for Gender and Women’s studies.
Cross-listed
GWST 504.
(3 cr.)

**MRS 505 - Palestinian Refugee Issues**

**Description**
This interdisciplinary 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.

Cross-listed
Same as MEST 505.

(3 cr.)

**MRS 507 - Introduction to Forced Migration and Refugee Studies**

**Description**
This course examines the changing political, social, and legal context within which people become forced migrants or refugees. Of particular concern are policies which generate, regulate, and protect the movement of forced migrants, the interaction between national governments and the United Nations High Commissioner for Refugees, the Psychosocial aspect of refugee status, and the social and cultural organization of refugee and migrant communities, including notably gender aspects and the role of children.

Cross-listed
Same as SOC 507.

**When Offered**
Offered in the fall.

(3 cr.)

**MRS 508 - Special Topics in Migration and Refugee Studies**

**Description**
Topics discussed vary every semester and depends on the instructor. The topic of the course will be announced prior to registration.

Cross-listed
Same as SOC/ANTH 508.

(3 cr.)

**MRS 512 - Psychosocial Issues in Forced Migrants**

**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 412/512.

**When Offered**
Offered in the spring
(3 cr.)

MRS 513 - Practicum in Psychosocial Interventions for Forced Migrants and Refugees

(2 cr.)

MRS 514 - Psychosocial Interventions for Forced Migrants and Refugees

(3 cr.)

MRS 518 - International Refugee Law

Description
This course considers the dynamics between the legal rights of forced migrants and the privilege of states to grant asylum.

Cross-listed
Same as LAW 518.

When Offered
Offered in the fall.
(3 cr.)

MRS 528 - Migration in International Law

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 528.

(3 cr.)

MRS 576 - Methods of Research with Forced Migrants & Refugees: Issues in Forced Migration

Description
This course complements other courses offered in the postgraduate Diploma in Forced Migration and Refugee Studies during any given semester by a critical examination of the particular problems and ethics of empirical research on forced migrants and refugees. Students will undertake a group project using different types of research including historical, survey, ethnographic and focus group methods with a view to gaining first-hand experience in understanding the benefits as well as the problems and limitations of research in the field.

Cross-listed
Same as POLS and SOC 576.

When Offered
Offered in the spring.
(3 cr.)
**MRS 584 - Practicum: Internship or Research**

**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.

**Prerequisites**
Permission of Advisor.

(3 cr.)

**MRS 599 - Research Guidance and Thesis**

**Description**
Supervision in the writing of the thesis.

**When Offered**
Offered in fall and spring.

(3 cr.)

**MUSC 180 - How to Read Music**

**Description**
Instruction in how to read music.

**Notes**
Students taking MUSC 280, Applied Private Instruction (2 cr) are required to take this course in the same semester, or pass the music literacy placement exam.

(2 cr.)

**MUSC 199 - Selected Topic for Core Curriculum**

**Description**
Course addressing broad intellectual concerns and accessible to all first-year students as part of the Primary Level Core.

**When Offered**
Offered occasionally.

(3 cr.)

**MUSC 220 - Introduction to Music**

**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, and texture, and to the instruments of the orchestra, voices, and choirs. Students will also learn the elements of musical notation and how to read it. The second is a short survey of great music in the western tradition, and of the composers who created it.

**When Offered**
Offered in fall and spring.

(3 cr.)

**MUSC 225 - World Music**
Description
Study of the musical practices and cultures of representative diverse nations and peoples.

Notes
Requires no previous musical training

(3 cr.)

**MUSC 232, 332, 432 - Digital Audio / MIDI Lab**

**Description**
The course teaches the theory and practice of digital audio recording and editing, and music instruments digital interface (MIDI) composing and arranging, using a digital audio workstation (DAW) application and MIDI controllers. The DAW software used to accomplish this will be Protools HD, Protools LE, and Protools M-Powered systems (v.8.0.1), which are the market standard for digital audio workstation applications used for sound recording and mixing.

**Prerequisites**
MUSC 220 and MUSC 330.
Students entering the course for the first time register in MUSC 232. Students who have taken a semester of MUSC 232 should register for MUSC 332; those who have completed MUSC 332 register for MUSC 432.
(1 cr. each)

**MUSC 240 - Western Music Theory I**

**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.

**Prerequisites**

**When Offered**
Offered in fall and spring.
(3 cr.)

**MUSC 241 - Sight-Singing and Aural Skills I**

**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.

**Prerequisites**
Concurrent with MUSC 240

**Notes**
Students must be able to match pitch within a 1-octave range.

(1 cr.)

**MUSC 245 - Arab Music Theory I**

**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.

**Prerequisites**
MUSC 180, MUSC 220 and MUSC 280. Concurrent with MUSC 246.
(3 cr.)

**MUSC 246 - Maqam I (Arab Music Sight-Singing and Aural Skills)**

**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.

**Prerequisites**
MUSC 180, MUSC 220 and MUSC 280. Concurrent with MUSC 245.
(1 cr.)

**MUSC 250 - Guitar and Piano: Accompaniment and improvisation "by ear"**

**Description**
Students will acquire an understanding of the division of the octave into 12 semitones, and of basic related scales and chords. They will learn to play improvised song accompaniments on piano and guitar, and to develop more elaborate accompaniments over time.

**Notes**
Requires no previous musical training.

(3 cr.)

**MUSC 252 - Vocal Methods**

**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.

(3 cr.)

**MUSC 255 - The Songs of America**

**Description**
An introduction to popular American music via genre and performance. Study of discrete sets of American songs, drawn from the major genres of current popular American music, and identification of salient features of these genres.

**Notes**
Requires no previous musical training.

(3 cr.)

**MUSC 262/362/462 - Arab Music Ensemble**
Description
The class will constitute a vocal and instrumental performing ensemble, which will rehearse during class periods.

Prerequisites
must be taken concurrently with MUSC 342

When Offered
Offered in fall and spring.

Repeatable
MUSC 462 may be repeated for credit.

Notes
Rehearsal will lead to a concert performance of the music prepared.

(1 cr.)

MUSC 263/363/463 - Guitar Ensemble

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.

Prerequisites
There are no pre-requisites for MUSC 263. Students who have taken MUSC 263 should register for MUSC 363; those who have completed MUSC 363 register for MUSC 463. MUSC 463 may be repeated for credit indefinitely.

(1 cr.)

MUSC 264/364/464 - Chamber Music Ensembles

Description
Private coaching for a chamber music ensemble, normally of two to six players (rarely more). This may be a jazz combo, a takht, a percussion ensemble, or conventional chamber ensemble for Western art music (e.g. string quartet or piano-violin duo). Twelve one-hour coachings 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.

Prerequisites
Permission of the Director of the Music Program. Students who have taken MUSC 264 should register for MUSC 364; those who have completed MUSC 364 register for MUSC 464. MUSC 464 may be repeated for credit indefinitely.

(1 cr.)

MUSC 265/365/465 - Rehearsal/Performance Practicum

Description
465 may be repeated for credit.

Prerequisites
Prerequisite: consent of music faculty (required prior to registration).

Notes
A significant contribution to departmental concerts and recitals, or membership in the Cairo Choral Society, or other appropriate organizations approved by the Director of the Music Program.

(1 cr.)

MUSC 266/366/466 - Chamber Singers
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.

Prerequisites
Prerequisite: consent of the director.

When Offered
Offered in fall and spring.

Repeatable
466 may be repeated for credit.

Notes
Rehearsal will lead to a concert performance of the music prepared.

(1 cr.)

**MUSC 267/367/467 - Cairo Choral Society**

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 a professional orchestra (the Cairo Festival Orchestra) and soloists at various venues in Cairo. 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.)

Prerequisites
Permission of the instructor. Students who have taken MUSC 267 should register for MUSC 367; those who have completed MUSC 367 register for MUSC 467. MUSC 467 may be repeated for credit indefinitely.

(1 cr.)

**MUSC 280/281 - Applied Private Instruction**

Description
Private lessons in voice or an instrument. 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.

Prerequisites
Concurrent: Students in MUSC 280 must register concurrently in MUSC 180, or achieve a passing grade on the placement exam. Students who have taken MUSC 280 should register for MUSC 281; those who have completed MUSC 282 should register for MUSC 283. MUSC 283 may be repeated for credit indefinitely. Music majors would normally register for MUSC 480 after completing MUSC 283.

Notes
All students are required to meet with their teacher IN THE FIRST WEEK OF CLASSES. They MUST contact the Music Coordinator in the Department of the Arts' Main Office by the first day of classes in order to arrange this. Students in MUSC 280 may be assigned to a different teacher after this initial meeting, at the discretion of the Music Program.

(1 cr.)

**MUSC 282/283 - Applied Private Instruction**
Description
Private lessons in voice or an instrument. Twelve one-hour lessons in the semester. Students are expected to practice a minimum of two hours 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.

Prerequisites
MUSC 280/281. Students who have completed MUSC 281 register for MUSC 282, and those who have completed MUSC 282 register for MUSC 283. MUSC 283 may be repeated for credit indefinitely. Music majors would normally register for MUSC 480 after completing MUSC 283.

Notes
All students are required to meet with their teacher IN THE FIRST WEEK OF CLASSES. They MUST contact the Music Coordinator in the Department of the Arts’ Main Office by the first day of classes in order to arrange this. Students in MUSC 280 may be assigned to a different teacher after this initial meeting, at the discretion of the Music Program.

(2 cr.)

MUSC 284/285/286 - Private Instruction for Piano Proficiency

Description
Private lessons in piano, intended for music 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.

Prerequisites
There are no pre-requisites for MUSC 284. Students who have taken MUSC 284 should register for MUSC 285; students who have register for MUSC 285 should register for MUSC 286.

Concurrent: Students in MUSC 284 with no prior experience, or who cannot read music, MUST register concurrently in MUSC 180.

Notes
1. Students registering in this course for the first time should enroll in MUSC 284.
2. Students in MUSC 284 with no prior experience, or who cannot read music, MUST register concurrently in MUSC 180.
3. All students are required to meet with their teacher in the first week of classes. They must contact the Music Coordinator in the Department of the Arts’ Main Office on the first day of classes in order to arrange this. Students in MUSC 280 may be assigned to a different teacher after this initial meeting, at the discretion of the Music Program.

(1 cr.each)

MUSC 299 - Selected Topic for Core Curriculum

Description
Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

Prerequisites
RHET 101

When Offered
Offered occasionally.

(3 cr.)

MUSC 311 - Guitar Pedagogy
Description
Preparation for a professional career that balances performance and teaching. Coursework will involve the analysis of guitar methods, technique manuals, and literature. The topics that will be addressed over the semester will include early childhood education methods and group instruction, as well as how to coordinate beginning, intermediate and advanced level private guitar lessons and studios for adults.

Prerequisites
MUSC 180 MUSC 220 and MUSC 280/480.
(3 cr.)

MUSC 330 - Introduction to Music Technology

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.

(3 cr.)

MUSC 331 - Music Production Using Protools I

Description
After finishing this course, students will be qualified to apply for certification from Digidesign, the creator of Protools software, the industry standard. Students will learn to combine audio multi track recordings of live instruments with music instruments digital interface (MIDI) recording for arranging and composing, using software synthesizers and samplers (electric and real recorded acoustic instruments), and audio looping. Also, this course will develop essential techniques for recording, editing, and mixing. The software used to accomplish this will be Protools HD, Protools LE, and Protools M-Powered systems (v. 8.0.1), which are the market standard for digital audio workstation applications used for sound recording and mixing.

(3 cr.)

MUSC 333 - Microphone Techniques

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.

Prerequisites
MUSC 330 and MUSC 331
(3 cr.)

MUSC 334 - Music Production for Visual Media

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.

**Prerequisites**
MUSC 220 MUSC 330 and MUSC 331
(3 cr.)

**MUSC 335 - Electronic Music**

**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, and the Digital Revolution and MIDI. In addition to history, the course will explain Electronic musical instruments, forms, and composers.

**Prerequisites**
MUSC 220 and MUSC 330
(3 cr.)

**MUSC 336 - Sound for Picture Production**

**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.

**Prerequisites**
MUSC 330 and MUSC 331
(3 cr.)

**MUSC 337 - Music for Film**

(3 cr.)

**MUSC 340 - Western Music Theory II**

**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.

**Prerequisites**
MUSC 240 and MUSC 241. Concurrent with 340
(3 cr.)

**MUSC 341 - Sight-Singing and Aural Skills II**
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.

Prerequisites
(1 cr.)

MUSC 342 - Music in the Arab Tradition

Description
Study of Arab music and song in its historical and cultural context, from its origins to the present day.

Prerequisites
MUSC 220

Notes
No previous experience in Arab music is required.

(3 cr.)

MUSC 345 - Arab Music Theory II

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.

Prerequisites
MUSC 245 and MUSC 246.
Concurrent: Students in this course must also register for MUSC 346
(3 cr.)

MUSC 346 - Maqam II (Arab Music Sight-Singing and Aural Skills)

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.

Prerequisites
MUSC 245 and MUSC 246. Concurrent: Students in this course must also register for MUSC 345
(1 cr.)

MUSC 360 - Music in the Western Tradition

Description
The study of western music in its historical and cultural context, from its medieval roots to the present day, with an emphasis on representative great works and their composers.

Prerequisites
MUSC 220 and MUSC 240.
(3 cr.)

MUSC 370 - Selected Topics in Music

Description
Offered occasionally.

Prerequisites
Prerequisite: consent of the instructor.

Repeatable
May be repeated for credit if content changes.
(3 cr.)

MUSC 371 - Western and Arab Musical Instruments

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.

Prerequisites
MUSC 220
(3 cr.)

MUSC 372 - Diction for Singers in the Western Tradition

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; some prior study of voice is required, however.

Prerequisites
MUSC 280/480 (at least two semesters) or permission of the instructor.
(3 cr.)

MUSC 402 - Independent Study

Description
In exceptional circumstances, some advanced music students may arrange, with departmental approval, to study beyond the regular course offerings.

Prerequisites
Open to students with a minimum B average.

When Offered
Offered in fall and spring.

Repeatable
May be repeated for credit if content changes.
(1-3 cr.)
MUSC 438 - Music Production Using Protools II

Description
A continuation of Music Production Using Protools 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. Students will learn how to set time and tempo operations and key signature for composing and arranging songs using Protools, and how to upgrade the quality of the MIDI recorded tracks performed by amateurs into professional-quality output. 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.

Prerequisites
MUSC 330 and MUSC 331
(3 cr.)

MUSC 439 - Digital Mixing Techniques

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.

Prerequisites
MUSC 220, MUSC 330 and MUSC 331
(3 cr.)

MUSC 440 - Western Music Theory III

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.

Prerequisites
MUSC 340 and MUSC 341. Concurrent: students in this course must also register for MUSC 441
(3 cr.)

MUSC 441 - Sight-Singing and Aural Skills III

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.

Prerequisites
MUSC 340 and MUSC 341. Concurrent: students in this course must also register for MUSC 440 (1 cr.)

**MUSC 480/481/482/483 - Advanced Applied Private Instruction**

**Description**
Private lessons in voice or an instrument. Twelve one-hour lessons in the semester. Students are expected to practice three hours each day. Students will perform before a jury of teachers for final examination. A lab fee will be assessed for each semester of instruction.

**Prerequisites**
MUSC 283. Students who have taken a semester of MUSC 480 should register for MUSC 481; those who have completed MUSC 481 register for MUSC 482, and those who have completed MUSC 482 register for MUSC 483. MUSC 483 may be repeated for credit indefinitely.

**Notes**
All students are required to meet with their teacher IN THE FIRST WEEK OF CLASSES.

(3 cr.)

**MUSC 490 - Advanced Seminar**

**Description**
In-depth examination of special advanced topics in music determined by the special interest and expertise of the faculty.

**Prerequisites**
Prerequisite: Consent of the instructor.

**When Offered**
Offered occasionally.

**Notes**
Designed for advanced students.

(3 cr.)

**MUSC 492 - Capstone Final Recital**

**Description**
Twelve one-hour private 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. Students are expected to practice at least three hours each day. A lab fee will be assessed. The student must play the full recital as a juried exam with a grade of B or higher at least thirty days before presenting the recital. Students who do not achieve a grade of B or higher in the jury may repeat the course once for credit in order to qualify to present the recital, which is required for graduation with the B.M.A. The jury will also attend the recital and assign the final grade for the course.

**Prerequisites**
MUSC 482.

(3 cr.)

**NANO 501 - Advanced Quantum Mechanics**

**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.

**Prerequisites**
PHYS 421 or equivalent.

**Cross-listed**
Same as PHYS 506.

**When Offered**
Offered in fall and spring.
(3 cr.)

**NANO 502 - Simulation and Modeling for Nanoscale Materials and Systems**

**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 532.
(3 cr.)

**NANO 503 - Advanced Testing and Characterization Techniques**

**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 calorimetry 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 528.
(3 cr.)

**NANO 504 - Fabrication of Nanomaterials For Films And Devices**

**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 531.
(3 cr.)

**NANO 505 - Nanochemistry**
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).

(3 cr.)

NANO 506 - Management and Economics of Nanotechnology

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)

(3 cr.)

NANO 521 - MEMS/NEMS Technology and Devices

Description
This course will cover basic MEMS/NEMS fabrication technologies, various transduction mechanisms such as piezoelectric, pyroelectric, thermoelectric, thermionic, piezoresistive, etc. In addition, the theory of operation of few sensors will be covered this will include infrared detectors, radiation sensors, rotation and acceleration sensors, flow sensors, pressure and force sensors, and motion sensors. Finally, the course will give insight of different techniques for analyzing experimental data.

Prerequisites
NANO 504

Cross-listed
Same as PHYS 556 and RCSS 542.

(3 cr.)

NANO 522 - Electronic Transport in Semiconductors

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 526.

(3 cr.)

NANO 531 - Nanomaterials, Synthesis, Processing and Applications

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.

(3 cr.)

**NANO 532 - Nanocomposite Science and Technology**

**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.

(3 cr.)

**NANO 533 - Materials for Energy Conversion and Storage**

**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 534.

(3 cr.)

**NANO 541 - The Chemistry of Nanostructures**

**Description**
This course addresses the synthesis and chemical properties of the different categories of nanostructures such as carbon nanotubes/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.

**Prerequisites**
NANO 505

(3 cr.)

**NANO 542 - Nanoelectrochemistry**

**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, etc...). Characterization and analysis techniques would also be addressed.

**Prerequisites**
NANO 505

(3 cr.)
NANO 551 - Nanotechnology Applications in Construction Materials

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.

(3 cr.)

NANO 552 - Nanotechnology in Studying Damage and Failure in Structures

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.

(3 cr.)

NANO 561 - Advanced Solid-State Devices

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.

Prerequisites
Graduate standing in engineering and physics. Electromagnetics, vector algebra, differential equations, and MATLAB programming.

Cross-listed
Same as EENG 510.

(3 cr.)

NANO 562 - Advanced Integrated Circuit Design

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 EENG 518.

(3 cr.)

NANO 571 - Bionanotechnology
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.

(3 cr.)

NANO 590 - Graduate Thesis Seminars I

Description
Seminar on research topics, research methodology and thesis writing. The seminars given by invited speakers include topics on the economic impact of nanoscale sciences and nanotechnology, nano-industry and nano-entrepreneurship.

(2 cr.)

NANO 591 - Graduate Thesis Seminar II

Description
Seminars on research topics given by invited speakers that includes health and environmental impact of nanotechnology. In addition, seminars are given by the enrolled students on their research work.

Prerequisites
NANO 590
(1 cr.)

NANO 592 - Selected Topics in Nanotechnology

Description
Topics to be chosen every year according to specific interests. Maybe taken for credit more than once if content changes.

Prerequisites
Consent of the faculty advisor.
(3 cr.)

NANO 599 - Research Guidance Thesis

Description
Consultation on problems related to student thesis
Must be taken at least twice for credit.

Prerequisites
NANO 590
(3 cr.)

NANO 621 - Nanophotonics

Description
The course will cover: Maxwell’s equations, light-matter interaction, dispersion, EM properties of nanostructures, etc.,
Photonic crystals Photic crystal fibers, Photonic nanocircuits Metal optics, manipulating light with plasmonic nanostuctures, plasmonic nano-sensors, near-field optics, metamaterials, negative refractive index and super-resolution.

(3 cr.)

**NANO 630 - Biomaterials**

**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 535

(3 cr.)

**NANO 640 - Nanoporous Materials**

**Description**

**Prerequisites**
NANO 505

(3 cr.)

**NANO 642 - Nanocatalysis**

**Description**

(3 cr.)

**NANO 699 - Research Guidance Dissertation**

**Description**
Consultation on problems related to student thesis. To be taken 11 times for credit.

(3 cr.)

**OPMG 202 - Statistics for Business**

**Description**
Basic concepts and applications of statistical analysis in business decisions. Methods include probability, risk analysis, estimation, forecasting, analysis of variances, and regression analysis.

**Prerequisites**
MACT 101 or ECON 216.

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.

(3 cr.)

OPMG 310 - Operations for Competitive Advantage

Description
How firms can gain competitive advantage from the operation function. This course introduces the basic concepts, tools and principles that are essential for the analysis and improvement of business processes. Topics may include forecasting, product and service design, capacity planning, quality management, materials management and project management.

Prerequisites
MACT 112 or ECON 216

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.

(3 cr.)

OPMG 401 - Supply Chain Management

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.

Prerequisites
OPMG 310

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.

(3 cr.)

OPMG 402 - Production/Operations Management II

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.

Prerequisites
OPMG 310

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.

(3 cr.)

**OPMG 403 - Business Process Management and Simulation**

**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.

**Prerequisites**
OPMG 310

**When Offered**
Offered in fall.

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.

(3 cr.)

**OPMG 404 - Service Operations and Strategy**

**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.

**Prerequisites**
OPMG 310

**When Offered**
Offered in 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.

(3 cr.)

**OPMG 409 - Quantitative Approach to Management**

**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.

**Prerequisites**
OPMG 402
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.

(3 cr.)

**OPMG 470 - Special Topics in Production / Operation Management**

**Description**
Considers selected topics of current relevance in Production / Operation Management.

**Prerequisites**
Prerequisite: Consent of Instructor.

**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.

(3 cr.)

**OPMG 475 - Independent Study in Production/Operation Management**

**Description**
Guided readings, research, and discussions on specific selected topic in Production/Operation Management.

**Prerequisites**
Prerequisites: Senior standing and consent of OPMG unit head and chair.

**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.

(1-3 cr.)

**OPMG 507 - Introduction to Business Statistics**

**Description**
This course provides a basic introduction to statistics as applied to business 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, numerical 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.
(3 cr.)

**OPMG 520 - Operations Management for Competitive Advantage**

**Description**
This course provides a basic understanding of manufacturing and service operations, and their role in the organization. Topics covered include process analysis, process capacity, quality management and control, forecasting, inventory control, lean operations, and planning and control. Topics are covered with emphasis on managerial, applications-oriented perspective.

**Prerequisites**
OPMG 507

**When Offered**
Offered in fall and spring.
(3 cr.)

**OPMG 521 - Managing and Coordinating Supply Chains**

**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.

**Prerequisites**
OPMG 520

**When Offered**
Offered occasionally.
(3 cr.)

**OPMG 528 - Managing Dynamic Projects**

**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.

**Prerequisites**
OPMG 520

**When Offered**
Offered occasionally.
(3 cr.)

**OPMG 530 - Data Analysis**
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.

Prerequisites
OPMG 520

When Offered
Offered occasionally.
(3 cr.)

OPMG 531 - Stochastic Models in Managerial Decision Making

Description
This course presents a normative approach to making decisions in one’s personal and professional life. The first half of the course introduces the fundamentals of decision analysis: probabilistic modeling, preference modeling and the Markov process, decision tree construction and rollback, the value of imperfect and perfect information. The second half of the course stresses how decision analysis is used in real-world practice. Topics include sensitivity analyses, influence diagrams, stochastic dominance, probabilistic encoding and tornado diagrams and Analytical Hierarchy Process (AHP).

Prerequisites
OPMG 520.

When Offered
Offered occasionally.
(3 cr.)

OPMG 532 - Operations Strategy

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.

Prerequisites
OPMG 520

When Offered
Offered occasionally.
(3 cr.)

OPMG 533 - Business Dynamics

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.

Prerequisites
OPMG 520
When Offered
Offered occasionally.
(3 cr.)

OPMG 570 - Selected Topics in Operations Management

Description
It considers selected topics of current relevance in Operations Management.

Prerequisites
Prerequisites: consent of the instructor.

When Offered
Offered occasionally.
(3 cr.)

OPMG 575 - Independent Study in Operations Management

Description
Guided readings, research, and discussions on specific selected topic in Production/Operation Management.

Prerequisites
Prerequisite: Consent of OPMG unit head and chair.

When Offered
Offered occasionally.
(1-3 cr.)

PENG 200 - Introduction to Petroleum Geology

Description
Basic concepts of Geology; Uniformatization, Geologic Time, Plate Tectonics, Rocks and Minerals (Igneous, Sedimentary and Metamorphic), Minerals, Origin of Sedimentary particles, Sedimentary Transport, Depositional Environments (Continental, Transitional and Marine), Sedimentary Facies, Lithification, classification of sedimentary rocks, Mechanical behavior of the rocks, Stratigraphy (correlation, superposition, unconformity, faunal succession and relative age), Structure, folds and its types, faulting and their types.

Prerequisites
CHEM 105

When Offered
Offered in fall and spring.
(2 cr.)

PENG 218 - Electrical Engineering

Description
Electric circuit theory; Three-phase systems; circuit analysis; electrical insulation; electrical measurements; energy conversion; induction motors, switchgear and substation apparatus, electric heating, Acoustics.

Prerequisites
PHYS 112 and MACT 231.

When Offered
Offered in fall or spring.
(2 cr.)

PENG 219 - Fundamentals of Surveying
Description
Principles of plane surveying, methods of measuring distances, angles and difference in heights (levels); traverse computations, earthwork computations-Surveying Fundamentals, Survey Mathematics, Introduction to Leveling Heights Contouring, Area and Volume Computations.

Prerequisites
MACT 132

When Offered
Offered in fall or spring.
(1 cr.)

PENG 227 - Materials Engineering

Description
Structure & properties of materials; Metals; Ceramics; Plastics; Phase Equilibria; Structure/Properties relationship; Materials Selection; Performance of materials in oil environment.

Prerequisites
CHEM 105 and ENGR 261

When Offered
Offered in fall or spring.
(3cr.)

PENG 301 - Petroleum Geology and Exploration

Description
History of Petroleum Geology, Oil & Gas accumulation, Origin (Chemical, Biological, and Physical), Porosity, Source Rocks, Migration, Accumulation, Types of Traps (Structural Traps, Stratigraphic Traps, Hydrodynamic Traps and combination Traps), Timing and preservation of Traps, Subsurface Geology and mapping; well sitting (duties of well geologist, introduction to logging and formation testing), Oil and Gas Exploration (Seismic, Gravity and magnetic Methods), Exploration Risk and Analysis, Project.

Prerequisites
PENG 200

When Offered
Offered in fall or spring.
(3cr.)

PENG 302 - Fluid and Rock Properties

Description
Physical Properties of the Rocks: Lithology, Porosity, Relative and effective Permeability, Capillary pressure and rock-fluid interactions; Petroleum Fluid properties, Gas behavior, Application of deviation factor to ideal gas law, Fundamentals of phase behavior: bubble point and dew point curves, retrograde, characterizing the reservoir fluid, Properties of reservoir fluids: Formation Volume Factor, Viscosity, Solution Gas-Oil Ratio, API gravity, specific gravity; and estimating gas, oil, and water properties from correlations.

Prerequisites
PENG 301

When Offered
Offered in spring.
(3 cr.)
PENG 303 - Fluid and Rock Lab

Description
Lab safety and working with petroleum fluids and rocks, Introduction to rock measurement equipment, Fluid saturation measurement from core, Fluid saturation by high temperature retort oven, Capillary pressure calculation versus saturation curves, Porosity measurement, Permeability measurement, Introduction to reservoir fluid measurement (PVT), Evaluation of black oil properties, review of phase behavior experiments in the lab to obtain pressure and volume graph, Saturation pressure, Solution gas oil ratio, oil formation volume factor, etc. Also, the students will be introduced to the state of the art PVT simulation software in the lab.

Prerequisites
PENG 302 or concurrent.

When Offered
Offered in spring or fall.

(1 cr.)

PENG 311 - Drilling Engineering I

Description
Properties of Reservoirs; Subsurface Pressure & Temperature; Conventional & Current Drilling Techniques; Drilling Fluids; Drilling Hazards & Safety; Hydraulics of Rotary Circulation & Penetration Rates; Casing; Cementing; Well Head Equipment, well planning and control, basic rig components, drilling bits, hole stability and problems, vertical and directional hole drilling

Prerequisites
PENG 302.

When Offered
Offered in fall and spring.

(3 cr.)

PENG 313 - Drilling Engineering I Lab

Description
This drilling lab will cover the following; lab safety, introduction to drilling machinery simulator, drilling Controls, drilling Operations & guidelines, data acquisition systems, hydraulics, blow out preventers (BOP), rate of penetration against drilling parameters and drilling well control. In addition, the students will be introduced to the state of the art drilling design software and well planning, well design, rig types, components, selection, drilling oil well, drilling bits, dull classification, hole problems, well control, well surveying, directional drilling and cost estimation

Prerequisites
PENG 311 or concurrently.

When Offered
Offered in fall or spring.

(1 cr.)

PENG 320 - Well Logging

Description
Methods of Well Logging, Basic Relationship of Well Logging, Spontaneous Potential Logs, The Resistivity Logs, Porosity Logs, Gamma Ray Log, Lithology logs, Well Log Interpretation Techniques, Lab exercise using the Electrical Properties System (EPS) equipment to simulate well logging tools measurement and obtain resistivity and formation factor from core plug. Also, the students will be introduced to the state of the art well logging interpretation software to
perform exercises, logging objectives, basic petrophysical relationships, calipers, dipmeters, pressure and temperature logs, porosity determination, fluid saturation and Archie equation, cross plotting techniques, permeability relationships, reserve estimation, correlation between well logging and core data, nuclear magnetic resonance, latest techniques (LWD, logging on bit and geosteering), integrated formation evaluation, recommended logging program, introduction to cased-hole logging and case study.

**Prerequisites**
PENG 311

**When Offered**
Offered in fall.
(2cr. + 1cr.)

### PENG 322 - Oil and Gas Production

**Description**
Pressure Draw Down and Productivity; Flow regime in Vertical and Horizontal Pipes; Off Shore and Deep Water Production; Gas Lift Principles and Design; Well Inflow Performance; Naturally Flowing Wells; Vertical lift performance, Multiphase flow, Well Pumping Design and Analysis; Pumps; Gas Separation; Emulsions and Inhibitors; Field Measurements; Pumps; Exercises’ on analysis of the production systems using the state of the art software, nodal analysis, formation damage, stimulation, matrix acidizing, hydraulic fracturing, numerical analysis of petroleum production system.

**Prerequisites**
PENG 332

**When Offered**
Offered in spring.
(2cr. + 1cr. lab)

### PENG 331 - Reservoir Engineering and Recovery

**Description**

**Prerequisites**
PENG 302

**When Offered**
Offered in fall.
(3 cr.)

### PENG 332 - Well Completion and Workover

**Description**
Classification of completions, design, productivity, perforation, completion fluids and equipment, unstable formations and sand control, subsea completion (for offshore wells), workover operations, corrosion control, scale deposition, intelligent completion.

**Prerequisites**
PENG 322 and PENG 374

**When Offered**
Offered in fall.
(3 cr.)

**PENG 333 - Reservoir Simulation and Well Testing**

**Description**
Overview of the Diffusivity Equation for Well Test Analysis, Well Test Analysis (Build up and Draw down well testing); Variable Rate Testing; Well Interference Testing; Gas Well Testing, Design of Well Tests, drillstem (DST) test, multiple-well test, pressure derivative analysis, Reservoir Simulation Fundamentals; Data Required; Models; Exercises using the state of the art well simulation and testing software.

**Prerequisites**
PENG 331.

**When Offered**
Offered in spring
(3 cr.)

**PENG 334 - Reservoir Simulation and Well Testing lab**

**Description**
Data Analysis and Modeling Exercises using the state of the art well testing and reservoir simulation software.

**Prerequisites**
PENG 333 or concurrently.

**When Offered**
Offered in spring.
(1 cr.)

**PENG 351 - Natural Gas Engineering**

**Description**
Phase Behavior of Multicomponent Systems; Differential and Flash Vaporization, gas reservoir deliverability, material-balance calculations and decline curve analysis, gas flow measurement, dehydration and gas sweetening processes, hydrate control.

**Prerequisites**
PENG 331.

**When Offered**
Offered in fall or spring.
(3 cr.)

**PENG 361 - Thermodynamics**

**Description**
Fundamental Concepts and Definitions; Properties of Pure Substances; First and Second Law of Thermodynamics; Reversed Cycles; Reversibility and Entropy; Vapor and Gas Power Cycles.

**Prerequisites**
ENGR 261 and CHEM 105

**When Offered**
Offered in fall or spring.
(3cr.)
PENG 363 - Heat Transfer

Description

Prerequisites
PHYS 111 and PENG 361

When Offered
Offered in spring
(3 cr.)

PENG 373 - Principles of Energy Engineering

Description
Basic energy calculations; material, mass, and energy balance; reaction rates during chemical transformations in energy systems. Energy storage; Regeneration.

Prerequisites
ENGR 261 and PENG 363

When Offered
Offered fall or spring.
(3 cr.)

PENG 374 - Corrosion and Oxidation Protection

Description
Corrosion theory; types of Corrosion; Oxidation; Wagner's theory; gas solid reactions; Creep; Fatigue; Stress Corrosion; Hot Corrosion; Inspection; Corrosion and Oxidation Protection of Pipe Lines and Drilling equipment; Underwater Protection.

Prerequisites
CHEM 105, PENG 227 and PENG 361

When Offered
Offered in fall or spring.
(3 cr.)

PENG 375 - Hydrogen and Fuel cells

Description
Principles of electrochemical conversion; Hydrogen production; Chemical and physical storage; Multicomponent storage systems; Efficiency of hydrogen energy; Principles of fuel cell technology; Fuel Reforming; types and design of fuel cells; fuel cell materials; efficiency and emissions.

Prerequisites
PENG 218 and PENG 374

When Offered
Offered fall or spring.
(3 cr.)

PENG 411 - Drilling Engineering II
Description
Controlled drilling, Drilling Hazards & Safety, Horizontal Drilling; Multilateral Drilling, Drilling Optimization; Hole Problems; Modern Drilling Techniques; Well Control, Offshore Drilling, principles of directional drilling engineering, new drilling technologies, well survey, MWD and LWD tools, state of the art directional drilling technology (horizontal, multilateral, relief wells), different directional trajectory using basic calculations, software for well trajectory.
Prerequisites
PENG 320
When Offered
Offered in fall
(3 cr.)

PENG 412 - Enhanced Oil Recovery

Description
Fundamentals of enhanced oil recovery; Immiscible displacement, fractional flow and frontal advance; Overview of water flooding, patterns, mobility ratio and Recovery Efficiencies; water flooding reservoir heterogeneity, Stiles Method, Dykstra-parsons method, Craig-Geffen & Morse Method; polymer flooding, surfactant flooding, miscible gas flooding and thermal EOR, microbial EOR, technical challenges and futures techniques
Prerequisites
PENG 331
When Offered
Offered in spring.
(3 cr.)

PENG 451 - Petroleum and Gas Transmission and Storage

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.
Prerequisites
PENG 322 and PENG 374
When Offered
Offered every other semester.
(3 cr.)

PENG 461 - Reservoir Economics, Management, & Risk Analysis

Description
Analysis of investment projects, reserves, depletion, regional and global legislation and taxation regulations, management functions focusing on planning, organizing, leading and controlling, production forecasts and reserves estimation, human resources development and people management; incentives, industrial risk assessment and management in terms of hazard, spill control, dose response, exposure, risk and uncertainty, and characterization.
Prerequisites
PENG 322 and ENGR 345
When Offered
Offered in spring.
(3 cr.)
PENG 462 - Renewable and Alternative Energy

**Description**

**Prerequisites**
PENG 373 and PENG 375

**When Offered**
Offered in fall or spring.

(3 cr.)

PENG 463 - Energy conversion and materials

**Description**
Conversion of fossil, nuclear, biomass to fuel; Electrochemical conversion in fuel cells and photovoltaics; Criteria determining efficiency of energy conversions; Materials for energy applications including membranes, catalysis, electrodes, supercapacitors, and semi conductors.

**Prerequisites**
PENG 462

**When Offered**
Offered fall or spring.

(3 cr.)

PENG 470 - Environmental Protection & Chemical Pollution

**Description**
Air Pollution; Water Pollution; Chemical Pollution, Combustion Emissions; Toxicity, and Poisoning; Environmental Management; Environmental Hazards; Industrial Pollution; Safety; Regional and Global Regulations and Certifications. Biologica Oxygen Demand, Health and Safety, Oil spills and disasters, selected Case Studies.

**Prerequisites**
PENG 373

**When Offered**
Offered every other semester.

(3 cr.)

PENG 471 - Reservoir Simulation and Modeling

**Description**
Reservoir simulation fundamentals, data required, model design concepts, simulation results interpretation, History matching, Field wide Simulation, Future performance prediction, Reservoir Management, and Optimization techniques using economic analysis.

**Prerequisites**
ENGR 313 and PENG 333

**When Offered**
Offered in fall.

(3 cr.)
PENG 472 - Ground Water Hydrology and Contamination

Description
Underground Hydrologic Cycle; Aquifers; Ground Water Movements; Flow Lines and Flow Nets; Steady and Unsteady State Flow; Flow Problems; Oil Field Waters; Corrosion and Microbiological Problems; Scales and Sludge; Water Treatment and Disposal; Well Injection.

Prerequisites
PENG 363 and PENG 374

When Offered
Offered occasionally.
(3cr.)

PENG 474 - Energy and the Environment

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.

Prerequisites
PENG 218 PENG 373 and PENG 374

When Offered
Offered in fall or spring.
(3 cr.)

PENG 475 - Greenhouse Technology and Emission Reduction

Description
Technologies employed to reduce CO2, CH4, and soot emissions from energy utilization; Advantages and limitations of technologies applied to reduce energy emissions; Efficient use of energy; Catalytic conversion; Greenhouse challenges; Emerging greener technologies; Capture and storage of CO2; Emissions from nuclear power; Reforming; Sulphur and sulphur scrubbers; Climate changes and greenhouse gases; Energy efficiency in combating emissions NOFA (non fossil fuel agreements) Kyoto and beyond.

Prerequisites
PENG 218 PENG 373 and PENG 374

When Offered
Offered fall or spring.
(3cr.)

PENG 476 - Principles of Nuclear Engineering

Description
Introduction to nuclear engineering; Global and nations energy requirements; Radioactivity; Atomic models; Fission and fusion reactor concepts; Neutron diffusion theory; Radiation protection and safety.

Prerequisites
PENG 373 and PENG 462

When Offered
Offered fall or spring.
(3 cr.)
PENG 480 - Special Problems in Petroleum and Energy Engineering

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.

Prerequisites
Consent of instructor and department chair on the basis of a well-defined proposal.

(1-3 cr.)

PENG 490 - Senior Project I

Description
A capstone project. Topics are selected by groups of students and approved by faculty advisor. Topics must be related to applied industrial problems using an integrated engineering approach.

Prerequisites
Prerequisite: Senior standing.

When Offered
Offered fall and spring.

(1 cr.)

PENG 491 - Senior Project II

Description
Continuation of the capstone project. Oral presentation and report submission required.

Prerequisites
Prerequisite: Senior standing and PENG 490.

When Offered
Offered fall and spring.

(2 cr.)

PENG 494 - Selected Topics in Petroleum and Energy Engineering

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.

Prerequisites
Senior standing.

When Offered
Offered fall and spring.

(3 cr.)

PENG 497 - Industrial Training

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.

Prerequisites
Prerequisite: Completion of 110 credits including 18 credits in PENG.
When Offered
Offered fall and spring.
(1cr.)

**PHDE 691 - Advanced Research Seminar**

**Description**
- All Ph.D. students should attend a common class. This class will be a series of general lectures having a broad interdisciplinary nature.
- Each student should give a presentation in this series on a topic that shows how his/her capability of dealing with more than one discipline.
- The student will be evaluated based on:
  - Reports submitted at the end of each class.
  - The quality of the presentation and the extent of diversity.
- The first four lectures will be given by faculty members or renowned researchers conducting diverse interdisciplinary research. This will give the students guidance on how to select their topics and how to link to other disciplines.
- The maximum number of students who can register in the Ph.D. seminar must not exceed 10.
- The Ph.D. seminar will be offered only once every academic year.

**Prerequisites**
Graduate Seminar I (BIOT 590, CHEM 590, CSCE 590, ENGR 590, NANO 590, RCSS 590).
(1 cr.)

**PHDS 691 - Advanced Research Seminar**

**Description**
- All Ph.D. students should attend a common class. This class will be a series of general lectures having a broad interdisciplinary nature.
- Each student should give a presentation in this series on a topic that shows how his/her capability of dealing with more than one discipline.
- The student will be evaluated based on:
  - Reports submitted at the end of each class.
  - The quality of the presentation and the extent of diversity.
- The first four lectures will be given by faculty members or renowned researchers conducting diverse interdisciplinary research. This will give the students guidance on how to select their topics and how to link to other disciplines.
- The maximum number of students who can register in the Ph.D. seminar must not exceed 10.
- The Ph.D. seminar will be offered only once every academic year.

**Prerequisites**
Graduate Seminar I (BIOT 590, CHEM 590, CSCE 590, ENGR 590, NANO 590, RCSS 590).
(1 cr.)

**PHDS/PHDE 601 - Systems and Computational Biology**

**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 the fall.
(3 cr.)

**PHDS/PHDE 612 - Design and analysis of Experiments**

**Description**
Learn how to plan, design and conduct experiments efficiently and effectively, and analyze the resulting data to obtain objective conclusions. Both design and statistical analysis issues are discussed. This course is intended for practical researchers and scientists from a variety of fields such as engineering, physics, chemistry, biotechnology, and biology. Applications from various fields of engineering, physics, chemistry, and biotechnology will be illustrated throughout the course. Computer software packages (Design-Expert, Minitab) to implement the methods presented will be illustrated extensively, and you will have opportunities to use it for homework assignments and the term project.

**Prerequisites**
ENGR 518 or equivalent.
(3 cr.)

**PHIL 100 - Reading Philosophy**

**Description**
In this course we read philosophy in class, and therefore read it together. This classroom experience is learning to read in a new way, a careful way, the way of philosophy. Reading together, we open ourselves to understanding also in a new way. This course will not only prepare students for Phil.220, but also for any other course in philosophy that is based on the capacity to read, to interpret, and then to write philosophy.

**When Offered**
Offered occasionally.
(3 cr.)

**PHIL 199 - Selected Topic for Core Curriculum**

**Description**
Course addressing broad intellectual concerns and accessible to all students, irrespective to major.

**When Offered**
Offered occasionally.
(3 cr.)

**PHIL 220 - Philosophical Thinking (core curriculum requirement)**

**Description**
This course concerns the human desire to know. It is, therefore, a course in 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.

**Prerequisites**
RHET 102 or concurrent.

**When Offered**
Offered in fall and spring.
(3 cr.)
PHIL 221 - Informal Logic

Description
Informal logic 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.

When Offered
Offered in alternate years.

(3 cr.)

PHIL 224 - Self and Society

Description
What is 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 that plurality of selves we call society.

When Offered
Offered in alternate years.

(3 cr.)

PHIL 226 - Philosophy of Religion

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.)

When Offered
Offered occasionally.

(3 cr.)

PHIL 230 - Introduction to Ethics

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.

(3 cr.)

PHIL 234 - Philosophy of the Social Sciences

Description
The social sciences do not consist simply of the application of the methodology of modern natural science to the study of society, but instead are grounded in philosophy, both historically and thematically. This course presents the basic philosophy and presuppositions from which the social sciences operate. The course is especially for students who major or minor in a social science and who need a philosophic background as a context in which the social sciences can be
properly understood.

When Offered
Offered occasionally.
(3 cr.)

PHIL 238 - World Philosophy

Description
The goal of this course is to introduce students to the wider context of philosophy beyond the West. Philosophical issues and methodologies will be discussed as they have been addressed by classical philosophical texts and eminent philosophers of Eastern traditions.
This course will offer an advanced introduction to philosophical thinking using this broader historical scope. Topics covered may include issues of ethics and action, knowledge and awareness, reality, truth, and value.

When Offered
Offered occasionally.
(3 cr.)

PHIL 242 - Philosophical Anthropology

Description
In this course we engage and explore various philosophical accounts of human nature. What are the unique features of the human being? Ever since Aristotle defined man as a rational animal, as the animal with language, or as a political animal, there have been various attempts at defining what is specifically human. Other philosophers have emphasized, in addition to rationality and an interest in public life, the religious dimension of human beings. These considerations lead to further questions: What is the good life, and what role do reason and passion play in it? Are human beings essentially selfish, or are we ‘hard-wired’ for altruism? This course comes to grips with these fundamental philosophical issues from a variety of places and periods.

When Offered
Offered occasionally.
(3 cr.)

PHIL 258 - Political Philosophy

Description
What is the justification of state power and legal authority? What is a good political system? How do we relate our judgments about how the political world should be to the way it actually is at present? This course will examine such questions, which will involve a study of the genesis and structure of political entities and the mutual responsibilities of citizen and government.

When Offered
Offered in alternate years.
(3 cr.)

PHIL 299 - Selected Topic for Core Curriculum

Description
Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

Prerequisites
RHET 101

When Offered
Offered occasionally.
(3 cr.)
PHIL 310 - Philosophy and Art

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.

When Offered
Offered in spring.
(3 cr.)

PHIL 312 - Ancient Philosophy

Description
This course explores some philosophical systems and issues characteristic of the earliest period of philosophy, especially fourth-century BC Greece. Typical figures discussed might include: Thales, Anaxagoras, Heraclitus, Empedocles, Parmenides, Plato and Aristotle; and also later figures from the Stoic, Epicurean and Neoplatonic traditions. Topics may include: early natural philosophy, the riddle of non-being, theories of intelligible form, the good-life theories of knowledge, and the nature of the human soul.

Prerequisites
Prerequisite: Two philosophy courses or consent of instructor.

When Offered
Offered every year.
(3 cr.)

PHIL 313 - Medieval Philosophy

Description
This course explores some philosophical systems and issues characteristic of the period commonly called the "Middle Ages", from 500 CE to 1500 CE. Typical figures discussed might include: Augustine, Boethius, al-Farabi, Ibn Sina, Anselm, Maimonides, Ibn Rushd, Aquinas, Al-Ghazali, John Duns Scotus, William Ockham, and Suarez. Topics may include: reason and faith, divine command ethics, truth and meaning, theories of human nature, occasionalism, virtues and the soul, the problem of universals, free will, and illumination and knowledge.

Prerequisites
Two philosophy courses or consent of instructor.

When Offered
Offered every year.
(3 cr.)

PHIL 314 - Modern Philosophy

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.

Prerequisites
Two philosophy courses or consent of instructor.

When Offered
Offered every year.
(3 cr.)

PHIL 315 - Nineteenth Century Philosophy
Description
This course examines how nineteenth century philosophers reacted to the Enlightenment's faith in reason: Whereas earlier nineteenth century thinkers believed that all aspects of reality and human experience could be explicated with a rationalistic 'system', this faith in reason became increasingly undermined by the belief that a more adequate insight is provided by non-rational 'feeling' and/or aesthetic experience. The course will also explore the 'historical turn' in nineteenth century philosophy. Figures discussed might include: Reinhold, Fichte, Schelling, Hegel, Schopenhauer, Comte, Feuerbach, Mill, Kierkegaard, Marx, Nietzsche, and Bergson.

Prerequisites
Two philosophy courses or consent of instructor.

When Offered
Offered occasionally.
(3 cr.)

PHIL 316 - Twentieth Century Philosophy

Description
The twentieth century has been marked above all by a focus on issues of language and the constitution of meaning. This course will examine representative thinkers drawn from one or both of the traditions of analytic and continental philosophy.

Prerequisites
Two philosophy courses or consent of instructor.

When Offered
Offered every year.
(3 cr.)

PHIL 317 - Current Trends in Philosophy

Description
This course covers key philosophical themes found in books published since the year 2000. While the popular imagination still regards Derrida and Foucault as the cutting edge in continental philosophy, different and even opposed trends have arisen over the course of the past decade. By the end of the semester, students should feel comfortable with major themes of philosophical debate going on at this very moment.

Prerequisites
Two philosophy courses or consent of instructor.

When Offered
Offered occasionally.
(3 cr.)

PHIL 318 - Theory of Knowledge

Description
What is the nature of knowledge? How can we know? How is science possible? Is knowledge innate or acquired? These are some of the questions that are examined in the context of selected classical as well as contemporary texts.

Prerequisites
Two philosophy courses or consent of instructor.

When Offered
Offered in alternate years.
(3 cr.)

PHIL 319 - Development and Responsibility
Description
Western Civilization has gone to great lengths to 'develop' the 'underdeveloped world'. This course is a critical review of practices and goals of international development. By concentrating on ethical considerations within the various relevant fields, such as business, engineering and environmental protection, the students explore the mutual responsibilities in this cooperative enterprise.

When Offered
Offered in alternate years.
(3 cr.)

**PHIL 330 - Advanced Ethics**

Description
This course will explore the theoretical underpinnings of ethical judgments and behavior. It will involve a more complex set of reading than the Introduction to Ethics and apply ethical theories to particular issues.

Prerequisites
Two philosophy courses or consent of instructor.

When Offered
Offered in alternate years.
(3 cr.)

**PHIL 344 - Literature and Philosophy**

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 344.

When Offered
Offered occasionally.

Repeatable
May be repeated for credit if content changes
(3 cr.)

**PHIL 354 - Islamic Philosophy**

Description
A survey of the rational and spiritual dimensions of Arab-Islamic civilization as shown in the thought and ideas of major theologians, philosophers, and mystics.

Prerequisites
HIST 246 or ARIC/HIST 343 or consent of instructor.

Cross-listed
Same as ARIC 354.

When Offered
Offered occasionally.
(3 cr.)

**PHIL 356 - American Philosophy**

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.

**Prerequisites**
Two philosophy courses or consent of instructor.

**When Offered**
Offered occasionally.

(3 cr.)

**PHIL 360 - Philosophy of Language and Communication**

**Description**
Language is the basis of learning, understanding and communication. Therefore, a detailed study of language (oral, physical and written) is necessary for any true understanding of self and society. This course investigates such topics as the nature of sign systems, the problems of meaning, reference, sense and interpretation, the place of rhetoric and the methods of communicative practice.

**Prerequisites**
Prerequisite: Two philosophy or consent of instructor.

**When Offered**
Offered in alternate years.

(3 cr.)

**PHIL 362 - Formal and Mathematical Logic**

**Description**
This course is an introduction to the ideas and methods of mathematical logic. The basis of predicate calculus (first order logic) will be presented in some details. More advanced topics such as Gödel's completeness and incompleteness theorems, some of the philosophico-mathematical problems in set theory and alternative logics will be discussed.

**Prerequisites**
PHIL 221 or MACT 200 or permission of the instructor.

**Cross-listed**
Same as MACT 362.

**When Offered**
Offered occasionally.

(3 cr.)

**PHIL 382 - Philosophy of Science and Technology**

**Description**
The relationship between science and technology has become a serious topic of debate. Is technology applied science or is science itself techno-science? Both have become pervasive facts which have altered human abilities and experiences of the world. This increase in power brings with it new responsibilities for the creators and users of science and technology. This course will explore these new powers and attendant obligations upon humanity, other cultures and the environment.

**When Offered**
Offered in alternate years.

(3 cr.)

**PHIL 402 - Metaphysics**

**Description**
This course deals with questions as to the ultimate reality of the world, e.g., why is there something rather than nothing? Profound metaphysical questions posed by ancient, modern, and contemporary philosophers will be discussed. Issues may include Aristotle's Being qua Being, Leibniz' Principle of Sufficient Reason, and Heidegger's Analysis of
Being.

**Prerequisites**
Two philosophy courses on the 300 or 400 level or consent of instructor.

**When Offered**
Offered occasionally.

(3 cr.)

**PHIL 403 - Selected Topics in Philosophy**

**Description**
According to special interest of faculty and students.

**Prerequisites**
One philosophy course on the 300 or 400 level or consent of instructor.

**When Offered**
Offered occasionally.

**Repeatable**
May be repeated for credit if content changes.

(3 cr.)

**PHIL 405 - Independent Study in Philosophy**

**Description**
Independent research projects in Philosophy.

**Prerequisites**
Three philosophy courses and consent of instructor

(1-3 cr.)

**PHIL 410 - Advanced Seminar in Aesthetics**

**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.

**Prerequisites**
PHIL 310 or consent of instructor.

**When Offered**
Offered occasionally.

(3 cr.)

**PHIL 418 - Philosophical Masterpieces**

**Description**
This course will be an in-depth study of a single great work of philosophy and its place in the history of ideas.

**Prerequisites**
One philosophy course on the 300 or 400 level or consent of instructor.

**When Offered**
Offered in alternate years.

**Repeatable**
May be repeated for credit if the content changes

(3 cr.)
PHIL 420 - Philosophical Figures

Description
This course is an in-depth study of one great philosophical figure. It is an opportunity to explore the philosophy of the thinker as a whole concentrating on his/her place in the history of ideas and in history itself.

Prerequisites
Prerequisites: One philosophy course on the 300 or 400 level or consent of instructor.

When Offered
Offered in alternate years.

Repeatable
May be repeated for credit if content changes.

(3 cr.)

PHIL 500 - Classical Western Philosophy

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). Because it provides valuable background material for PHIL 501, the course will generally run in the Fall Semester.

(3 cr.)

PHIL 501 - Advanced Seminar in Islamic Philosophy

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. Because PHIL 500 provides valuable material for PHIL 501, the latter will generally run in the Spring Semester.

(3 cr.)

PHIL 502 - Metaphysics

Description
This course deals with questions as to the ultimate reality of the world, e.g., why is there something rather than nothing? Profound metaphysical questions posed by ancient, modern, and contemporary philosophers will be discussed.

When Offered
Offered occasionally.

(3 cr.)
PHIL 503 - Selected Topics in Philosophy

Description
According to special interest of faculty and students.

When Offered
Offered occasionally.

Repeatable
May be repeated for credit if content changes.
(3 cr.)

PHIL 504 - Kant and Idealism

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.

(3 cr.)

PHIL 505 - Advanced Seminar in Phenomenology

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 and Merleau-Ponty, may also be discussed.

(3 cr.)

PHIL 510 - Advanced Seminar in Aesthetics

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.
(3 cr.)

PHIL 517 - Current Trends in Philosophy

Description
This course covers key philosophical themes found in books published since the year 2000. While the popular imagination still regards Derrida and Foucault as the cutting edge in continental philosophy, different and even opposing trends have arisen over the course of the past decade. By the end of the semester, students should feel comfortable with major themes of philosophical debate going on at this very moment.

When Offered
Offered occasionally.

(3 cr.)

**PHIL 518 - Philosophical Masterpieces**

**Description**
This course will be an in-depth study of a single great work of philosophy and its place in the history of ideas.

**When Offered**
Offered in alternate years.

**Repeatable**
May be repeated for credit if the content changes.

(3 cr.)

**PHIL 520 - Philosophical Figures**

**Description**
This course is an in-depth study of one great philosophical figure. It is an opportunity to explore the philosophy of the thinker as a whole concentrating on his/her place in the history of ideas and in history itself.

(3 cr.)

**PHIL 530 - Advanced Ethics**

**Description**
This course will explore the theoretical underpinnings of ethical judgments and behavior. It will involve a more complex set of reading than the Introduction to Ethics and apply ethical theories to particular issues.

(3 cr.)

**PHIL 560 - Philosophy of Language and Communication**

**Description**
Language is the basis of learning, understanding and communication. Therefore, a detailed study of language (oral, physical and written) is necessary for any true understanding of self and society. This course investigates such topics as the nature of sign systems, the problems of meaning, reference, sense and interpretation, the place of rhetoric and the methods of communicative practice.

(3 cr.)

**PHIL 562 - Formal and Mathematical Logic**

**Description**
This course is an introduction to the ideas and methods of mathematical logic. The basis of predicate calculus (first order logic) will be presented in some details. More advanced topics such as Goedel’s completeness and incompleteness theorems, some of the philosophico-mathematical problems in set theory and alternative logics will be discussed.

(3 cr.)

**PHIL 599 - Research Guidance and Thesis**
PHYS 100 - Physics for Poets

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 111 - Classical Mechanics, Sound and Heat

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.

Prerequisites
Prerequisites: Thannawia Amma MACT or Science, or IGCSE O-level physics, or German Abitur, or French Baccalaureate, or International Baccalaureate, or PHYS 100. MACT 131 or concurrent enrollment. Concurrent enrollment with PHYS 123L.

When Offered
Offered in fall, spring and summer.

PHYS 112 - Electricity and Magnetism

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.

Prerequisites
PHYS 111, PHYS 123L, MACT 132 or concurrent. Concurrent with PHYS 124L.

When Offered
Offered in fall, spring and summer.

PHYS 123L - General Physics Laboratory I

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.

Prerequisites
Concurrent with PHYS 111

Hours
One three-hour laboratory period

When Offered
Offered in fall, spring and summer.

(1 cr.)

**PHYS 124L - General Physics Laboratory II**

**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.

**Prerequisites**
Concurrent with PHYS 112

**Hours**
One three-hour laboratory period

**When Offered**
Offered in fall, spring and summer.

(1 cr.)

**PHYS 199 - Selected Topic for Core Curriculum**

**Description**
Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

**When Offered**
Offered occasionally.

(3 cr.)

**PHYS 204L - Optics Laboratory**

**Description**
Basic experiments in physical optics with special emphasis on laser optics.

**Prerequisites**
PHYS 214 or concurrent.

**When Offered**
Offered in fall and spring.

(1 cr.)

**PHYS 211 - Modern Physics**

**Description**

**Prerequisites**
PHYS 112 and MACT 231 or concurrent.

**When Offered**
Offered in fall and spring.

(3 cr.)

**PHYS 212 - Quantum Mechanics I**

**Description**
Wavelike properties of matter. The probability interpretation. The uncertainty principle. The Schrodinger equation in

**Prerequisites**
MACT 233 or concurrent.

**When Offered**
Offered in fall and spring.
(3 cr.)

**PHYS 214 - Waves and Optics**

**Description**
Wave phenomena; EM waves, geometrical and physical optics.

**Prerequisites**
PHYS 112 and PHYS 204L concurrent.

**When Offered**
Offered in fall and spring.
(3 cr.)

**PHYS 215 - Introduction to Electronics**

**Description**
Foundation of circuit analysis, AC theory, introduction to semiconductor devices, amplifiers, feedback oscillators.

**Prerequisites**
PHYS 112 and PHYS 221L concurrent.

**When Offered**
Offered in fall, spring and summer.
(3 cr.)

**PHYS 221L - Electronics Laboratory I**

**Description**
Basic experiments in electronics.

**Prerequisites**
Prerequisite: concurrent with PHYS 215 .

**When Offered**
Offered in fall, spring and summer.
(2 cr.)

**PHYS 222L - Electronics lab for Computer Scientists & Computer Engineers**

**Description**
Basic experiments in electronics for the Computer Science & Engineering majors.

**Prerequisites**
Concurrent with PHYS 215

**When Offered**
Offered in fall and spring.
(1 cr.)

**PHYS 279 - Computational Methods in Physics**
Description
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.

Prerequisites
CSCE 106 and MACT 231.

Hours
Two credits lectures and one credit computer lab.

When Offered
Offered in spring.

(2 cr. + 1 cr.)

PHYS 305L - Modern Sensors Laboratory

Description
Experiments in instrumentation illustrating material covered in PHYS 315.

Prerequisites
Concurrent with PHYS 315

When Offered
Offered in fall.

(1 cr.)

PHYS 307L - Electronics Laboratory II

Description
Basic experiments in instrumentation electronics.

Prerequisites
Concurrent with PHYS 327

When Offered
Offered in spring.

(1 cr.)

PHYS 309L - Digital Logic Design Laboratory

Description
The laboratory will cover experiments in digital design and experiments illustrating material of course PHYS 319.

Prerequisites
Concurrent with PHYS 319

Cross-listed
Same as EENG 218L.

When Offered
Offered in fall, spring and summer.

(1 cr.)

PHYS 311 - Thermodynamics and Statistical Mechanics

Description
A macroscopic and microscopic study of equilibrium thermal physics, fundamental laws of thermodynamics, and
statistical mechanics applied to various systems.

Prerequisites
PHYS 212 and MACT 233
When Offered
Offered in spring.
(3 cr.)

PHYS 312 - Theoretical Mechanics

Description
Vector and tensor analysis, statics, kinematics, and dynamics of a particle and system of particles, rigid and deformable bodies; rotating coordinate systems, Lagrange's and Hamilton's equations with applications.

Prerequisites
PHYS 212, MACT 233

When Offered
Offered in fall.
(3 cr.)

PHYS 314 - Optical Systems and Instruments

Description

Prerequisites
PHYS 204L, PHYS 214

When Offered
Offered in spring.
(3 cr.)

PHYS 315 - Modern Sensors

Description
Physical principles of sensing, sensors characteristics, micro-fabrication technology, theory of operation of the following sensors: Infrared sensors, acceleration and angular rate sensors, occupancy and motion detectors, pressure sensors, flow sensors, radiation detectors, error analysis of experimental data and design of experiments.

Prerequisites
PHYS 215, PHYS 221L. Concurrent with PHYS 305L

When Offered
Offered in fall.
(3 cr.)

PHYS 316 - Electromagnetic Theory

Description

Prerequisites
PHYS 112, MACT 232

Cross-listed
Same as EENG 341.

When Offered
Offered in spring.
(3 cr.)

**PHYS 318 - Instrumentation Systems and Control**

**Description**
Linearity, Laplace transform, step and impulse response, block diagrams, signal graphs, state variables, feedback control, transfer functions of system components, criteria for design, stability analysis, Nyquist and Routh criteria, root locus method.

**Prerequisites**
MACT 233

**When Offered**
Offered in fall.
(3 cr.)

**PHYS 319 - Digital Logic Design**

**Description**
The nature of digital logic and numbering systems. Boolean algebra, Karnaugh map, decision-making elements, memory elements, latches, flip-flops, design of combinational and sequential circuits, integrated circuits and logic families, shift registers, counters and combinational circuits, adders, subtracters, multiplication and division circuits, memory types. Exposure to logic design automation software.

**Prerequisites**
CSCE 106 . Concurrent with PHYS 309L

**Cross-listed**
Same as EENG 210.

**When Offered**
Offered in fall, spring and summer.
(3 cr.)

**PHYS 321L - Nuclear Physics Lab**

**Description**
Experiments in atomic and nuclear physics.

**Prerequisites**
PHYS 211 or concurrent.

**When Offered**
Offered in fall and spring.
(1 cr.)

**PHYS 322L - Solid-State Physics Lab**

**Description**
Experiments in solid-state physics and semiconductor devices.

**Prerequisites**
PHYS 325

**When Offered**
Offered in fall and spring.
(2 cr.)

**PHYS 323L - Semiconductor Technology Lab**
Description
Experiments in semiconductor and electronics technology.

Prerequisites
PHYS 215 and PHYS 221L

When Offered
Offered in fall and spring.
(2 cr.)

PHYS 325 - Introduction to Solid-State Physics

Description
Classification of materials and their structural characteristics, symmetry and properties of materials, free-electron theory, band theory, dielectric processes, optical processes in material.

Prerequisites
PHYS 212

When Offered
Offered in spring.
(3 cr.)

PHYS 327 - Operational Amplifiers and Applications

Description
Differential amplifiers, operational amplifiers, open-loop characteristics, inverting and noninverting amplifiers, comparators, signal generators, op amps with diodes, differential instrumentation and bridge amplifiers, bias, offsets and drift, bandwidth, slew rate noise and frequency compensation, active filters, IC timers, power supplies and power amplifiers.

Prerequisites
PHYS 215 concurrent with PHYS 307L

When Offered
Offered in spring.
(3 cr.)

PHYS 333 - Introduction to Applied Geophysics

Description
Introduction to dynamic Earth; magnetic and gravimetric (potential), geoelectric and seismic methods to determine the physical properties, structure and dynamics of the Earth; seismic instruments and sources.

Prerequisites
PHYS 214 and PHYS 315 or concurrent.

When Offered
Offered in spring.
(3 cr.)

PHYS 401 - Senior Thesis and Seminar

Description
Methods used in obtaining and reporting the results of research. Each student selects a topic in his/her field of interest under the supervision of a faculty member, prepares an outline, assembles a bibliography, and makes a study plan to be followed in preparing his project. After finishing the project, each participant then makes an oral presentation of his/her chosen topic. A written thesis has to be completed after criticism and suggestions.

Prerequisites
Senior standing.
When Offered
Offered in fall and spring.
(3 cr.)

**PHYS 402 - Independent Study**

**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.

**Prerequisites**
Prerequisites: consent of the instructor, senior standing.
(1-3 cr.)

**PHYS 404L - Photonics and Optical Communication Laboratory**

**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.

**Prerequisites**
PHYS 204L or consent of instructor.

**When Offered**
Offered in fall.
(1 cr.)

**PHYS 407L - Process Instrumentation and Digital Control Laboratory**

**Description**
Experiments on process measurement, digital process control and programmable logic controllers.

**Prerequisites**
PHYS 417 concurrent.

**When Offered**
Offered in spring.
(1 cr.)

**PHYS 409L - Computerized Instrumentation Laboratory**

**Description**
Experiments in computerized instruments illustrating material covered in PHYS 429.

**Prerequisites**
Concurrent with PHYS 429

**When Offered**
Offered in spring.
(1 cr.)

**PHYS 412 - Semiconductor Physics**
Description
Fundamental theory and characteristics of elemental and compound semiconductors. Semiconductor technology. P-N junctions and transistors.

Prerequisites
PHYS 325

When Offered
Offered in fall.
(3 cr.)

**PHYS 413 - Nuclear Physics**

Description
Nuclear Structure and Nuclear Properties; Nuclear models; deuteron, liquid drop model, shell model; hyperfine structure. Nuclear decay and radioactivity. Nuclear reactions; Nuclear fission and fusion; reactors. Nuclear astrophysics. Nuclear medicine. Particle physics and fundamental interactions.

Prerequisites
PHYS 211 PHYS 212 and PHYS 421 (recommended).

When Offered
Offered in fall.
(3 cr.)

**PHYS 414 - Photonics**

Description

Prerequisites
PHYS 214 or consent of instructor.

When Offered
Offered in fall.
(3 cr.)

**PHYS 415 - Selected Topics in Physics**

Description
Topics chosen according to special interest, such as temperature physics, vacuum physics, solid-state electronics, electronics and communications.

Prerequisites
Prerequisite: Junior standing or consent of instructor.

When Offered
Offered occasionally.

Repeatable
May be repeated for credit more than once if content changes.
(3 cr.)

**PHYS 416 - Experimental Methods in Undergraduate Research**

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.
Prerequisites
Prerequisites: Junior standing. Consent of instructor.

When Offered
Offered in fall and spring.
(3 cr.)

PHYS 417 - Process Instrumentation

Description
Basic concepts in process measurement and control; process controllers; Final control devices; Typical applications; Programmable logic controllers; Distributed control systems; Process safety and alarming.

Prerequisites
PHYS 215 and PHYS 407L concurrent.

When Offered
Offered in spring.
(3 cr.)

PHYS 421 - Quantum Mechanics II

Description

Prerequisites
PHYS 212

When Offered
Offered in spring.
(3 cr.)

PHYS 426 - Industrial Physics

Description
Vacuum technology, pumps, manometers and gauges. Application of vacuum technology in research and industry. Handling of industrial gases; gas separation, purification and gas analysis; physics in industry, sensors in industrial environments.

Prerequisites
Prerequisites: Junior standing. Consent of instructor.

When Offered
Offered in spring

Notes
Students field trips to several factories and manufacturing firms.

(3 cr.)

PHYS 427 - Analytical Techniques in Instrumentation

Description
UV and visible light absorption instruments, nuclear magnetic resonance instruments, electron-spin resonance spectroscopy; x-ray instruments; atomic absorption spectrometry (a case study), thermal analysis, gas chromatography, infrared spectroscopy, electron microscopy. Lab activities include: conducting experiments using analog recorders and data acquisition systems, methods to upgrade old analog instruments, in addition to student projects in the area of instrumentation.
Prerequisites
PHYS 215 and PHYS 221L.

When Offered
Offered in fall.
(3 cr: 2 cr. lecture, 1 cr. lab)

PHYS 429 - Computerized Instrumentation

Description

Prerequisites
PHYS 319 or consent of instructor. Concurrent with PHYS 409L

When Offered
Offered in spring.
(3 cr.)

PHYS 501 - Mathematical Physics

Description

Prerequisites
MACT 233 or equivalent.

When Offered
Offered in fall.
(3 cr.)

PHYS 502 - Classical Electrodynamics

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.

Prerequisites
PHYS 316 or equivalent and PHYS 501.

When Offered
Offered in spring.
(3 cr.)

PHYS 504 - Classical Mechanics

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.
Prerequisites
PHYS 312 or equivalent.

When Offered
Offered in fall.
(3 cr.)

PHYS 506 - Advanced Quantum Mechanics

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.

Prerequisites
PHYS 421 or equivalent.

Cross-listed
Same as NANO 501.

When Offered
Offered in fall and spring.
(3 cr.)

PHYS 507 - Computational Physics

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.

Prerequisites
MACT 233 MACT 304 or consent of instructor.

When Offered
Offered in fall.
(3 cr.)

PHYS 508 - Advanced Experimental Techniques

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.

Prerequisites
PHYS 321L PHYS 322L and PHYS 323L or equivalent.

When Offered
Offered in spring.
(3 cr.)

PHYS 509 - Advanced Thermodynamics and Statistical Mechanics
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.

Prerequisites
PHYS 311 or equivalent.

When Offered
Offered in spring.

(3 cr.)

PHYS 510 - Introduction To Solids

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.

Prerequisites
PHYS 325 or equivalent.

When Offered
Offered in fall.

(3 cr.)

PHYS 512 - Electronic Transport in Semiconductor

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.

Prerequisites
PHYS 215 and PHYS 325 or equivalent.

When Offered
Offered in fall.

(3 cr.)

PHYS 513 - Theory of Solids

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.

Prerequisites
PHYS 325 or equivalent.
When Offered
Offered in spring.
(3 cr.)

PHYS 549 - Passive Microwave Circuits

Description
Transmission line theory, Different types of planar transmission lines, Empirical and quasistatic solution of planar lines, Network parameters and their relationships, Matching circuits based on lumped elements/transformers/tuning stubs, Lossy and lossless power dividers, Different types of directions couplers, Microstrip antenna elements and arrays, Electromagnetic simulation of different microwave circuits, Optimization of microwave circuits.

Prerequisites
PHYS 316 or equivalent.

When Offered
Offered in spring.
(3 cr.)

PHYS 556 - MEMS/NEMS Technology and Devices

Description
This course will cover basic MEMS/NEMS fabrication technologies, various transduction mechanisms such as piezoelectric, pyroelectric, thermoelectric, thermionic, piezoresistive, etc. In addition, the theory of operation of few sensors will be covered this will include infrared detectors, radiation sensors, rotation and acceleration sensors, flow sensors, pressure and force sensors, and motion sensors. Finally, the course will give insight of different techniques for analyzing experimental data.

Prerequisites
PHYS 215 and consent of instructor.

Cross-listed
Same as NANO 521 and RCSS 542.

When Offered
Offered in spring.
(3 cr.)

PHYS 561 - Independent Studies

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.

Prerequisites
Prerequisite: Consent of supervisor, graduate standing.

Notes
Maximum of 3 credit hours of independent studies can be used towards the M. Sc. degree in physics.

(1-3 cr.)
PHYS 562 - Selected topics in Physics

Description
Topics to be chosen according to specific interests. Maybe taken for credit more than once if content changes.

Prerequisites
Consent of the faculty advisor.

Cross-listed
PHYS 662.

When Offered
Offered in fall and spring.
(3 cr.)

PHYS 590 - Graduate Seminar I

Prerequisites
Seminars of research topics given by invited speakers. The student must register for this course prior to submitting a thesis topic.

When Offered
Offered in fall.
(1 cr.)

PHYS 591 - Graduate Seminar II

Description
Presentations and discussions of results obtained by the graduate students during research work.

Prerequisites
PHYS 590

When Offered
Offered in spring.
(1 cr.)

PHYS 599 - Research Guidance and Thesis

Description
Thesis consultation for qualified students. Two semesters are required, with credit being given each time.

(3 cr. + 3 cr.)

PHYS 602 - Classical Electrodynamics II

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.

Prerequisites
PHYS 502

When Offered
Offered in fall and spring.
(3 cr.)

PHYS 641 - Integrated Photonics
Description
This course will introduce students to a range of passive photonic components; students will gain an understanding of the fundamentals of how these devices operate and an appreciation of where these components find applications in communications, energy and sensing systems. Topics covered in this course include: interaction of light with matter; resonator optics; periodic structures, optical thin films and gratings; photonic band gap materials; waveguides and couplers, Plasmonics and Nanoparticles. Hands on experience for modeling and design of these devices and structures using photonic software is of prime essential to illustrate and validates the fundamentals of the course.

Prerequisites
PHYS 414 or equivalent.

When Offered
Offered in fall and spring.

(3 cr.)

PHYS 642 - Computational Electromagnetics

Description
Modeling electromagnetic phenomena related to microwave, millimeter, terahertz, and optical frequencies.

Prerequisites
PHYS 502, PHYS 507 or equivalent.

When Offered
Offered in fall and spring.

(3 cr.)

PHYS 662 - Advanced Selected Topics in Physics

Description
Topics to be chosen according to specific interests. May be taken for credit more than once if content changes.

Prerequisites
Consent of the faculty advisor.

Cross-listed
PHYS 562.

When Offered
Offered in fall and spring.

(3 cr.)

POLS 101 - Introduction to Political Science

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.

Prerequisites
ENGL 100

(3 cr.)

POLS 199 - Selected Topic in Political Science

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.
(3 cr.)

**POLS 203 - Introduction to Political Science II**

**Description**
This course is reserved for students above the level of their first semester sophomores who wish to major in Political Science, but cannot be taken if students have already taken POLS 101. See the description of POLS 101.

**Prerequisites**
ENGL 100
(3 cr.)

**POLS 204 - Research Methods in Political Science**

**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.

**Prerequisites**
RHET 101, POLS 101 or POLS 203
(3 cr.)

**POLS 205 - Europe in the Age of Revolution and Reform (1789-1914)**

**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.

**Cross-listed**
Same as HIST 205.
(3 cr.)

**POLS 206 - Europe in International Politics in the Twentieth Century**

**Description**
This Course explores major development in European and international socio-economic politics from the end of the 1800’s to the present day. It introduces the key events and trends of this tumultuous century including wars, revolutions, and ideological movements.

**Cross-listed**
Same as HIST 206.

**When Offered**
Offered in fall and spring.
(3 cr.)

**POLS 299 - Selected Topics for Core Curriculum**

**Description**
Course addressing broad intellectual concerns and accessible to all students, irrespective of major

**Prerequisites**
RHET 101

When Offered
Offered occasionally.
(3 cr.)

POLS 301-302 - History of Political Theory

Description
Analysis of the thought of the major contributors, from Plato to the present. Fall semester (301): ancient and medieval political philosophy and the modern break with traditions. Spring semester (302): main currents of modern thought.

Prerequisites
RHET 101 and POLS 101 or POLS 203

When Offered
POLS 302 is not offered in the fall semester.
(3 cr. per semester)

POLS 303 - American Government and Politics

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.

Prerequisites
RHET 101 and POLS 101 or POLS 203

When Offered
Offered occasionally.
(3 cr.)

POLS 305 - Politics and Society in Contemporary Africa

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.

Prerequisites
RHET 101 and 6 hours of social sciences.

When Offered
Offered occasionally.
(3 cr.)

POLS 308 - Comparative Politics of the Middle East

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.

Prerequisites
RHET 101 and POLS 101 or POLS 203.

When Offered
Offered in fall and spring.
(3 cr.)

POLS 310 - Introduction to Development
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.

Prerequisites
RHET 101 and POLS 101 or POLS 203

When Offered
Offered in fall and spring.
(3 cr.)

POLS 313 - Introduction to Comparative Politics

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.

Prerequisites
RHET 101 and POLS 101 or POLS 203
(3 cr.)

POLS 320 - International Relations

Description
The nature of politics among sovereign states: approaches and basic concepts, national power, the balance of power, nationalism and imperialism, instruments and goals of national policy, real or ideal limitation on international anarchy. Emphasis on international law and the United Nations, selected topics in contemporary international political history.

Prerequisites
RHET 101, POLS 101 or POLS 203 and POLS 206

When Offered
Offered in fall and spring.
(3 cr.)

POLS 323 - Comparative Government and Politics: Developing Systems

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.

Prerequisites
RHET 101 and POLS 101 or POLS 203

When Offered
Offered in fall.
(3 cr.)

POLS 324 - Comparative Government and Politics in Contemporary Eastern Europe and Russia

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.

**Prerequisites**
RHET 101 and POLS 101 or POLS 203

**When Offered**
Offered in spring.

(3 cr.)

**POLS 325 - Government and Politics of Egypt**

**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.

**Prerequisites**
RHET 101.

(3 cr.)

**POLS 350 - Introduction to Political Economy**

**Description**
Analysis of interconnections between politics and economics, political authority and the market, power and wealth. Survey of main schools of thought in political economy, their evolution, convergence and divergence. Empirical issues essential to the understanding of the interaction between politics and economics in today's world will be included.

**Prerequisites**
RHET 101, POLS 101 or POLS 203 and ECON 201

(3 cr.)

**POLS 351 - Theory and History of Political Economy**

**Description**
Traces the history of political economy and its major schools, covers how different schools conceptualize the mutual relationships between the economy and politics. Relates these schools to the development of capitalism and the process of globalization.

**Prerequisites**
RHET 101

(3 cr.)

**POLS 354 - Political and Social Thought in the Modern Arab World**

**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.

**Prerequisites**
RHET 101

**When Offered**
Offered in fall and spring.

(3 cr.)

**POLS 400 - Honors Seminar: Political Theory and Current Issues in World Affairs**
Description
This seminar aims at training the honors students in the use of various political theories in the course of understanding some of the major world issues of our time. It seeks to establish the relevance of a range of political frameworks to our great issues of today's world with focus on conflict, crises situations and environmental, demographic and ecological changes.

Prerequisites
Pre-requisites: Honors Status, PS 301 or 302
(3 cr.)

POLS 402 - The Political Economy of Egypt

Description
The course focuses on the political factors that shaped the economy, the polity and society at large. In this class, we will try to understand the dynamics of internal and international power relations that shaped the history of modern development, the factors of policy making, the role of the state and the role of external factors.

Prerequisites
RHET 201, POLS 310 and POLS 350
(3 cr.)

POLS 404 - Introduction to Political Science Methods

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 quantitative and qualitative research methods. 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.

Prerequisites
RHET 201, POLS 204 and 3 credit hours at 300 level in POLS.
Cross-listed
Same as POLS 504.
(3 cr.)

POLS 405 - International Politics in the Middle East

Description
This seminar seeks to examine 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.

Prerequisites
RHET 201, POLS 308 and POLS 320.
(3 cr.)

POLS 409 - Seminar: International Organization

Description
This seminar examines the structure and evolution international organizations, both intergovernmental (IO's) and non-governmental (NGO's), with an emphasis on the United Nations system, its specialized agencies, and recent issues of global governance.

Prerequisites
RHET 201 and POLS 320
When Offered
Offered in spring.
(3 cr.)
POLS 410 - International Security

Description
Discusses the major theories of war and peace. Encompasses a study of international crisis, conflict, war, and strategies for managing conflicts. Covers critical security studies to understand the challenges of the assumptions underpinning traditional security studies. Diverse topics including environmental security, global human security, and international terrorism will be studied with a view of focusing on the changing nature of international security.

Prerequisites
RHET 201 and POLS 320.
(3 cr.)

POLS 411 - Contemporary Foreign Policies

Description
Investigates the processes involved in foreign policy decision-making. Focus will be on understanding the contexts, constraints and influences which foreign policy decision-makers have to deal with, combined with specialized knowledge of the post-1945 foreign policies of major and emerging states in the international system.

Prerequisites
RHET 201 and POLS 320.
(3 cr.)

POLS 413 - International Financial Institutions

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.

Prerequisites
RHET 201, ECON 201 and POLS 320.
(3 cr.)

POLS 414 - Egyptian Foreign Policy

Description
Main themes of Egyptian foreign policy from 1952 including: Egypt's relations with the great powers; inter-Arab relationships and policy including unity experiments, the inter-Arab arena including the Arab League, and the Gulf Cooperation Council; effects on foreign policy of the Arab-Israeli conflict; relations with the Non-Aligned Movement, the Islamic Conference, the Organization of African Unity; policy concerns of the national interest including Nile waters and the Suez Canal.

Prerequisites
RHET 201 and POLS 320.
(3 cr.)

POLS 415 - U.S. Foreign Policy

Description
Examines major issues and processes of U.S. foreign policy considered historically focusing on the post World War II era. Processes of policy formulation and values manifested in U.S. foreign policy are explored in the context of specific issue areas such as the Cold War, the end of the Cold War, the Western Alliance, and development aid and assistance to Latin America, Africa, and Asia.
POLS 416 - Race, Class and Gender: Theorizing Political Identity

Description
This course will survey 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.

Prerequisites
Six credits at 300 level in POLS.

(3 cr.)

POLS 420 - Issues in Middle East Politics

Description
Selected Topics in Middle East Politics investigated under the guidance of a faculty member. May be offered as a seminar.

Prerequisites
RHET 201 and POLS 308.

When Offered
Offered occasionally.

Repeatable
May be repeated for credit if content changes

(3 cr.)

POLS 422 - Contemporary Egypt

Description
This course examines the current Politics of Egypt, including elections, civil society activism and changing power relations between social forces.

Prerequisites
RHET 201 and POLS 308

When Offered
Offered in fall.

(3 cr.)

POLS 423 - The Political Economy of Poverty and Inequality

Description
The focus of this seminar is on the mechanisms that influence poverty. Some of the major issues are: the socio-economic and political characterization of the poor; the role of the state in poverty alleviation; the impact of globalization on poverty and the best policies to reduce poverty.

Prerequisites
RHET 201, POLS 310 and POLS 350

(3 cr.)

POLS 424 - Political Economy of the Middle East and North Africa
Description
An examination of the interconnection between the socio-political forces and economic policies in the Middle East and North Africa. For instance: how liberalization affects democratization and vice versa, how economic national characteristics affect the political process and vice versa. Required for all students in Political Economy Specialization.

Prerequisites
RHET 201, POLS 310 and POLS 350
(3 cr.)

POLS 425 - Global Political Economy

Description
The dialectics of the relationship between market and state. Types of international actors and the international division of labor; old and new. Theory of international regimes and the evolution of mechanisms of international trade and finance. Transformation of the global political economy and its impact on patterns of hegemony/marginalization in the contemporary world.

Prerequisites
RHET 201, POLS 320 and POLS 350
(3 cr.)

POLS 426 - Contemporary Political Islam

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.

Prerequisites
RHET 201
(3 cr.)

POLS 430 - Seminar: Special Topics in Political Science

Description
Selected topics to be investigated under the guidance of a faculty member.

Prerequisites
RHET 201 and 6 credit hrs at 300 level in POLS.

When Offered
Offered in fall and spring.

Repeatable
May be repeated for credit if content changes

Notes
May be offered as a seminar.

(3 cr.)

POLS 431 - Political Sociology

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.

**Prerequisites**
Prerequisites: 9 hours of social science, and junior or senior standing.

**Cross-listed**
Same as SOC 431.

**When Offered**
Offered in fall.
(3 cr.)

**POLS 432 - Seminar: Comparative Politics and/or Policies**

**Description**
Selected topics in the field of comparative politics or policies, with concentration on a single country, problem, or policy.

**Prerequisites**
RHET 201 and one of POLS 308 POLS 323 POLS 324.

**When Offered**
Offered in fall and spring.

**Repeatable**
May be repeated for credit if content changes.
(3 cr.)

**POLS 433 - Individual Study and Selected Reading**

**Description**
Guided reading, research, and discussion based on a subject of mutual interest to a student and faculty member.

**Prerequisites**
RHET 201 and consent of instructor and department on the basis of a well-defined proposal.

**When Offered**
Offered in fall and spring.
(1-3 cr.)

**POLS 435 - The State and Society**

**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.

**Prerequisites**
RHET 201 and 6 credit hrs. at 300 level in Political Science.
(3 cr.)

**POLS 438 - Modern China**

**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.

**Prerequisites**
RHET 201
When Offered
Offered occasionally.
(3 cr.)

POLS 439 - Government and Politics in the Modern Caucasus and Central Asia

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.

Prerequisites
RHET 201, POLS 101 and POLS 203
(3 cr.)

POLS 440 - Seminar: Special Topics in International Relations

Description
A special issue or theme in international relations investigated under the guidance of a faculty member.

Prerequisites
RHET 201 and POLS 320

Repeatable
May be repeated for credit if content changes.
(3 cr.)

POLS 442 - Environmental Politics

Description
This course analyzes 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.

Prerequisites
RHET 201
(3 cr.)

POLS 450 - Business -Government Relations

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.

Prerequisites
RHET 201 and POLS 350.
(3 cr.)

POLS 460 - Development Studies Seminar

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.
Prerequisites
RHET 201 and 12 hours of social science.

Cross-listed
Same as ANTH/ECON/SOC 460.

When Offered
Offered occasionally.

POLS 470 - The Politics of Human Rights

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.

Prerequisites
RHET 201 and 6 credit hrs at 300 level in Political Science.

POLS 471 - International Law

Description
Introduction to the study of international law. Exposes students to the practical and theoretical foundations of contemporary international law by analyzing such issues as customary law, the law of treaties, jurisdiction, international legal personality, and state responsibility.

Prerequisites
RHET 201 and POLS 320

When Offered
Offered in fall and spring.

POLS 472 - International Law in the Middle East

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.

Prerequisites
RHET 201 and POLS 471.

When Offered
Offered in spring.

POLS 473 - Special Topics in Public Law

Description
Topics drawn from constitutional and administrative law, including related jurisprudence and judicial institutions.

Prerequisites
RHET 201 and 6 credit hrs at 300 level in POLS.

Repeatable
May be taken a second time if content changes.
POLS 474 - Special Topics in Public International Law

Description
Specialized areas of international law, such as human rights and humanitarian law.

Prerequisites
RHET 201 and POLS 471

Repeatable
May be taken if content changes.
(3 cr.)

POLS 475 - Egyptian Law

Description
The Egyptian legal system will be considered according to its present structure and historical development, including institutions, processes, laws, and the courts. The specific role of the Supreme Constitutional Court in contemporary political and legal context will also be examined. This course may be counted towards the requirements of the Specializations in Public and International Law.

Prerequisites
RHET 201
(3 cr.)

POLS 477 - Law and Development

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.

Prerequisites
RHET 201, POLS 310 and POLS 471
(3 cr.)

POLS 480 - Israeli Politics and Society

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.

Prerequisites
RHET 201 and 6 credit hrs. of Social Science.
(3 cr.)

POLS 481 - The Politics of Palestinian–Israeli Relations

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.
POLS 499 - Senior Year Thesis

Description
This course provides students enrolled in the department’s Honors Program the opportunity to write an original research thesis with faculty supervision.

Prerequisites
The pre-requisites for POLS 499 is being enrolled in the Honors Program and accumulating the requisite credits in the prescribed courses, including, but not limited to, POLS 400 and POLS 404

POLS 501 - Comparative Theory

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.

Prerequisites
Prerequisite: graduate standing.

POLS 502 - Scope and Method of Developmental Analysis

Description
A critical review of the theories, models, and methodologies relevant to the study of political development, especially in the Third World.

When Offered
Offered in fall and spring.

POLS 503 - International Relations Theory

Description
Critical review of major theories and concepts in international relations, and 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.

When Offered
Offered in fall and spring.

POLS 504 - Introduction to Political Science Methods

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 quantitative and qualitative research methods. 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.

Prerequisites
RHET 201, POLS 204 and 3 credit hours at 300 level in POLS.

Cross-listed
Same as POLS 404.
(3 cr.)

POLS 505 - Identity, Culture and Norms in World Politics

Description
Studies identities, cultures and norms in world politics. 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, at the global level.

When Offered
Offered in Spring.
(3 cr.)

POLS 510 - Global Governance and World Order(s)

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.

When Offered
Offered in Fall.
(3 cr.)

POLS 520 - Protracted Social Conflicts

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.

(3 cr.)

POLS 525 - International Political Economy

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.

When Offered
Offered in fall.
(3 cr.)

POLS 526 - The Political Economy of Regionalism

Description
This course examines the patterns, criteria, and dynamics of regionalism in the global political economy. The course takes a comparative approach to analyzing the political economy of regionalism, studying the Middle East, Latin America, Asia, Europe and Sub-Saharan Africa. We will examine the positive and negative effects of the trends of
regionalism, identify patterns, and compare the political, economic, military/security, socio-cultural, linguistic, historical, and ideological variables of each region under study.

(3 cr.)

POLS 530 - Regime Change and Democratization

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.

Prerequisites
POLS 501
(3 cr.)

POLS 534 - Middle East Conflicts

Description
The Arab-Israeli conflict is at the core of Middle East conflicts; the numerous Arab-Israeli wars and peace efforts dominated the conflict scene in the region for more than half a century. Other conflicts are fueled, affected, and intertwined with the various aspects of Arab-Israeli conflict. This seminar analyzes roots of this protracted conflict since Zionism clashed with Palestinian nationalism in the early 20th century until the most recent effort to settle it.

When Offered
Offered in Fall.
(3 cr.)

POLS 535 - Middle East Politics

Description
This course provides an in-depth examination of the nature and dynamics of Middle East politics. It explores some of the main approaches to understanding the Middle East Political system. The course will focus on state formation, national identities, leadership, elites and the impact of the west.
(3 cr.)

POLS 536 - Contemporary Issues in Political Islam

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.
(3 cr.)

POLS 540 - Politics of Modern Egypt

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.
(3 cr.)

**POLS 544 - European Politics**

**Description**
Considers the governance structures, processes, and patterns of politics in major states, institutions of the EU, and international organizations.
(3 cr.)

**POLS 545 - Politics and Development**

**Description**
Domestic and international contexts within which development occurs: ethnicity, class, gender, dependence; central institutions involved in decision making (the state, international donors, international financial institutions); contemporary policy sectors such as rural development, industry, health, etc.

**When Offered**
Offered occasionally.
(3 cr.)

**POLS 550 - Politics In Asia**

**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.

**When Offered**
Offered occasionally.
(3 cr.)

**POLS 551 - African Politics**

**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.

(3 cr.)

**POLS 552 - Arab-American Relations**

**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.
(3 cr.)

**POLS 554 - Comparative Foreign Policy: Theories and Applications**
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.

When Offered
Offered in spring.
(3 cr.)

POLS 555 - Conflict and Security in Global Politics

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.

When Offered
Offered in fall.
(3 cr.)

POLS 558 - Comparative Politics and the Middle East

Polity, economy, and society considered as interconnected areas for research in comparative politics; the impasse debate about theory in Middle East politics explored in relation to comparative work on other areas and analysis of representative studies; consideration of materials relevant for studying the Middle East; practice in formulating a research proposal and in developing an agenda for research.

Prerequisites
POLS 501 or POLS 502 and POLS 535 or POLS 540
(3 cr.)

POLS 561 - Public Policy and Development

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.

Prerequisites
ECON 201 and POLS 502 or POLS 535
(3 cr.)

POLS 562 - International Development Organizations

The structure of international aid and assistance, with emphasis on analyzing the activities of multilateral, and bilateral organizations and NGOs which attempt to promote development. Emphasis will be on the political and bureaucratic environments in which these organizations operate.

Prerequisites
POLS 502
(3 cr.)

POLS 570 - Special Topics in Political Science
Description
Alternating selected Topics to be investigated and reported.

When Offered
Offered in fall and spring.

Repeatable
May be taken more than once if content changes.

(3 cr.)

POLS 571 - Seminar: Special Topics in International Relations

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.

(3 cr.)

POLS 580 - Independent Study and Readings

Description
Guided individual readings and/or research on a subject of mutual interest to student and faculty member.

Prerequisites
Prerequisite: Department approval.

When Offered
Offered in fall and spring.

Repeatable
May be taken only once.

(3 cr.)

POLS 584 - Practicum: Internship or Research

Description
Internship for four to six months in an organization pursuing development activities, or active involvement on an institutional research project having a development emphasis. The work is assessed on the basis of a written report and discussion.

Prerequisites
Prerequisites: At least eighteen hours of master’s degree work, or adviser's permission.

(3 cr.)

POLS 585 - Project Seminar

Description
This is a special seminar for the practical development specialization. It includes the examination, specification and identification of problem areas; conceptualization and design of programs and their implementation; evaluation of project proposals and implementation. Students will be assessed by a variety of practical exercises, and the design of a project proposal.

(3 cr.)

POLS 586 - Skills in Development Practice
Description
This special seminar for the development specialization offers practical skills integral for working in the development field. The approach will be thematic and students will be introduced to the latest in techniques relevant to the field. A critique of the various approaches will be encouraged. Students will be assessed by a variety of practical exercises, essays and research projects.
(3 cr.)

POL 599 - Research Guidance and Thesis

(no cr.)

PPAD 299 - Selected Topics for the Core Curriculum

Description
Course addressing broad intellectual concerns and accessible to all students, irrespective of major.
Prerequisites
RHET 101
When Offered
Offered occasionally.
(3 cr.)

PPAD 308 - Management in Government

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.
(3 cr.)

PPAD 490 - Practicum

Description
Students work on an approved individual or team professional assignment with a relevant government, non-profit, or other organization. Class meets weekly 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. 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.
Prerequisites
Junior or senior status and permission of the department.
Cross-listed
Same as PPAD 590.
When Offered
Offered in fall and spring.
(3 cr.)

PPAD 500 - Research Methods for Public Policy and Administration
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.

(3 cr.)

PPAD 501 - Strategic Management for Government and Nonprofit Organizations

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.

(3 cr.)

PPAD 502 - Economics for Public Policy Analysis

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.

(3 cr.)

PPAD 503 - Role of Government in a Market-Oriented Economy

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.

Prerequisites
PPAD 502 or equivalent economic preparation.

When Offered
Offered in spring.

(3 cr.)

PPAD 504 - Essentials of Financial Planning and Management for Government and Nonprofit Organizations
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.
(3 cr.)

PPAD 505 - Institutions, Democratization, and Public Policy

Description
Review of theoretical and philosophical underpinnings of the state, institutions and public policy; explores dynamic relationships among state, society and economy. Introduction to political theory, institutional theory and public policy theory, from theories of who governs and how to the policy process. Extensive use of case studies to explore how institutions shape political life, policy, reform, and the democratic transition.

When Offered
Offered in spring.
(3 cr.)

PPAD 506 - Essentials of Public Policy and Administration

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.
(3 cr.)

PPAD 507 - Government Finance for Policy Analysis

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.

Prerequisites
Completion of economics core or equivalent economics preparation.

When Offered
Offered in alternate years.
(3 cr.)

PPAD 508 - Qualitative Analysis for Policy and Administration
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.
(3 cr.)

PPAD 509 - Applied Quantitative Analysis

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.
(3 cr.)

PPAD 510 - Organizational Behavior for Government and Nonprofit Management

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.
(3 cr.)

PPAD 511 - Administrative Environment and Public Policy in Egypt and the Middle East

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.
(3 cr.)

PPAD 512 - Management of Development Programs

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.
(3 cr.)

**PPAD 513 - Comparative Public Governance**

**Description**
Consideration of public governance and reform of governance systems in a comparative context, with an emphasis on the MENA region and developing countries. Application of comparative analytic tools and models of government behavior to explore strategies to improve performance in diverse contexts.

**When Offered**
Offered in alternate years.
(3 cr.)

**PPAD 514 - Human Resource Management for Government and Nonprofit Organizations**

**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.
(3 cr.)

**PPAD 515 - Public Policy Analysis and Program Evaluation**

**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, including cost-benefit and simulation. 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 spring.
(3 cr.)

**PPAD 516 - Core Concepts and Applications for Social and Environmental Policy**

**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.

**When Offered**
Offered in spring.
(3 cr.)

**PPAD 517 - Non-profit Management**
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.
(3 cr.)

PPAD 518 - Governance, Accountability, and Stakeholder Negotiations

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.
(3 cr.)

PPAD 519 - Leadership and Communication for Public Affairs

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.
(3 cr.)

PPAD 520 - Global Health Issues and Policies

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.
(3 cr.)

PPAD 521 - Core Concepts and Applications for Government Regulation

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.
(3 cr.)

**PPAD 522 - Core Concepts and Applications for Government Promotion of the Private Sector**

**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.
(3 cr.)

**PPAD 523 - Citizen-centered government**

**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.
(3 cr.)

**PPAD 524 - Globalization and Development**

**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.
(3 cr.)

**PPAD 525 - Reforming Delivery of Social Services**

**Description**
Exploration of the causes and consequences of ineffective government programming in social service delivery and strategies to improve performance. Comparative analysis of issues in health, education, anti-poverty programming, including the interaction of financial, human resource, and governance failures and ways to address them in a developing country context. Application of intervention strategies to increase responsiveness to citizen needs, including the uses of information, technology, capacity-building, and accountability mechanisms.
When Offered
Offered in alternate years.
(3 cr.)

PPAD 526 - Corporate Social Responsibility and NGO Partnerships

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.
(3 cr.)

PPAD 527 - International Organization in Global Governance

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.
(3 cr.)

PPAD 528 - International Negotiation: Theory and Practice

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.
(3 cr.)

PPAD 529 - Issues in International Security

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.
(3 cr.)

**PPAD 530 - Conflict Management and Resolution**

**Description**
This course is about the theoretical underpinnings and policy aspects of conflict management and resolution. It addresses theories of conflict and discusses concepts such as deterrence, early warning, crisis bargaining, negotiations strategies, mediation and peacekeeping. In addressing these issues, the course will examine specific processes of conflict management and/or resolution such as those of the Middle East, Bosnia-Herzegovina, Sri Lanka and the policies and objectives of participant states.

**When Offered**
Offered in spring.
(3 cr.)

**PPAD 531 - Armament, Arms Control and Disarmament**

**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.
(3 cr.)

**PPAD 532 - Issues in regional security in the Middle East and Africa**

**Description**
This course is about comparable and other issues of regional security in the Middle East and Africa. 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.
(3 cr.)

**PPAD 533 - Cooperation for Development in the Multilateral System**
**Description**

This course will review the foundations of multilateral cooperation for development and the current development issues tackled by the United Nations system such as poverty, employment, food security, the environment and population. It will examine the processes through which multilateral approaches are defined; the attitudes towards these approaches of great, middle range powers and developing countries; as well as the principles and means of multilateral action. The realization of the Millennium Development Goals (MDGs) will be particularly studied.

**When Offered**
Offered in alternate years.
(3 cr.)

**PPAD 534 - Comparative Bilateral Cooperation Policies for Development**

**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.
(3 cr.)

**PPAD 535 - Multilateral Cooperation for Development at the Country Level: Issues and Practice**

**Description**

This course is about the programs at the country level put in place by multilateral organizations to support public administrations in developing countries carry out their development functions. It will review primary issues of development faced by these countries. The course will then examine the design and implementation of programs of a number of organizations that meet the priorities and needs of partner developing countries. The course will examine examples of programs of specific organizations such as the World Bank, UNDP, ILO FAO and UNESCO.

**When Offered**
Offered in alternate years.
(3 cr.)

**PPAD 536 - Policy for Sustainable Cities**

**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 537 - Greening the Built Environment

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 538 - Urban Infrastructure Development for Sustainability

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 570 - Special Topics in Public Policy and Administration

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.

Prerequisites
Consent of the instructor and advisor.

When Offered
Offered occasionally.

PPAD 575 - Independent Study in Public Policy and Administration

Description
Guided readings, research, and discussions on specific selected topics in Public Policy and Administration

Prerequisites
Pre-requisites: Permission of the instructor and unit head

PPAD 590 - Practicum

Description
Students must complete an approved individual or team professional assignment with a relevant government, non-profit, or other organization. Class meets weekly 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. 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.

**Prerequisites**
Completion of at least 3 courses or approval of department and instructor.

**Cross-listed**
Same as PPAD 490.

**When Offered**
Offered in fall and spring.

(3 cr.)

**PPAD 598 - Thesis Research Seminar**

**Description**
Support to students in research phase of the thesis. Weekly meetings and assignments to support ongoing analysis, research, and writing, guided discussions, peer-to-peer assessment, and critique of thesis components. Ungraded; required for all students.

**Prerequisites**
Supervisor approval of a thesis proposal or permission of the supervisor and instructor.

**When Offered**
Offered in fall and spring.

(0 cr.)

**PPAD 599 - Research Guidance and Thesis**

**When Offered**
Offered in fall and spring.

(no cr.)

**PSYC 201 - Introduction to Psychology**

**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.

(3 cr.)

**PSYC 207 - Introduction to Psychological Statistics**

**Description**
Basic statistical procedures used in psychological research. Includes central tendency, variability, parametric and nonparametric techniques. Emphasis will be on conceptual understanding and practice.

**When Offered**
Offered in fall and spring.

(3 cr.)

**PSYC 208 - Research Methods for Psychology**
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.

Prerequisites
PSYC 201 and PSYC 207

When Offered
Offered in fall and spring.

Notes
This course is designed for psychology majors.

(3 cr. + 1 cr. lab)

PSYC 240 - Introduction to Community Development

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 ANTH/SOC 240.

When Offered
Offered in fall.

(3 cr.)

PSYC 299 - Selected Topics in Psychology

Description
Topics will vary depending on contemporary trends in the field of psychology.

Prerequisites
PSYC 201 , sophomore or junior standing and permission of the instructor.

When Offered
Offered occasionally.

Repeatable
May be repeated for credit if content changes.

(3 cr.)

PSYC 301 - Social Psychology

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.

Prerequisites
PSYC 201

Cross-listed
Same as SOC 301.
When Offered
Offered in fall and spring.
(3 cr.)

**PSYC 302 - Personal Growth and Adjustment**

**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.

**Prerequisites**
PSYC 201

When Offered
Offered in fall and spring.
(3 cr.)

**PSYC 304 - Lifespan Development**

**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.

**Prerequisites**
PSYC 201

When Offered
Offered in fall and spring.
(3 cr.)

**PSYC 308 - Cognitive Psychology**

**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.

**Prerequisites**
PSYC 208

When Offered
Offered in fall.
(3 cr.)

**PSYC 310 - Educational Psychology**

**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.

**Prerequisites**
PSYC 201

When Offered
Offered occasionally.
(3 cr.)

**PSYC 313 - Learning and Behavioral Psychology**

**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 occasionally.
(3 cr.)

**PSYC 315 - Psychological Testing and Assessment**

**Description**
Nature of individual differences, methods and rationale of their assessment, with emphasis upon widely used psychological tests of intellectual function and personality.

**Prerequisites**
PSYC 201 and PSYC 207

**When Offered**
Offered in spring.
(3 cr.)

**PSYC 327 - Theories of Personality**

**Description**
The study of the development and dynamics of personality from a variety of theoretical perspectives. The following theoretical viewpoints and theorists are studied: Psychoanalytic (Freud, Jung), Socio-cultural (Adler, Horney, Erikson), Trait (Allport, Cattell, Eysenck), Learning (Skinner, Dollar, Miller, Bandura, Mischel), Sociobiological (Wilson), and Existential-Humanistic (Kelly, Rogers, Maslow, May).

**Prerequisites**
PSYC 201

**When Offered**
Offered in fall and spring.
(3 cr.)

**PSYC 330 - Community Psychology**

**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.

**Prerequisites**
PSYC 201 or permission of instructor.

**When Offered**
Offered in fall.
(3 cr.)
PSYC 340 - Participatory Action Research in Community Settings

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.

Prerequisites
ANTH 240 or consent of the instructor.

Cross-listed
Same as ANTH/SOC 340.

When Offered
Offered in spring.
(3 cr.)

PSYC 342 - Abnormal Psychology

Description
Different theoretical approaches and empirical studies of causes, symptoms, and treatment of abnormal patterns of behavior. Problems and advantages of creating a classification scheme for abnormal behavior. The major diagnostic categories and review of the more common patterns of abnormal behavior. How such disorders arise from subtle interactions between organic or psychological predispositions.

Prerequisites
PSYC 201

When Offered
Offered in fall and spring.
(3 cr.)

PSYC 380 - Biopsychology

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.

Prerequisites
BIOL 103 or BIOL 104 and PSYC 201 and PSYC 208.

When Offered
Offered in fall.
(3 cr.)

PSYC 400 - Selected Topics in Psychology

Description
Topics to be chosen according to specific interest, for example: learning theory, conflict and stress, psycholinguistics, ethnopsychology.

Prerequisites
Prerequisite: junior or senior standing, and permission of the instructor.

When Offered
Offered occasionally.

Repeatable
May be repeated for credit if content changes.
(3 cr.)

PSYC 401 - Supervised Research in Psychology
Description
Student will assist with a research project by working under the individual guidance of a Psychology faculty member. Requirements may include library research, data collection, data entry, statistical analysis, qualitative analysis, and assistance in planning or conducting parts of a research project.

Prerequisites
PSYC 208, minimum B average, and permission of instructor.

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.
(1-3 cr.)

PSYC 402 - Independent Study

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.

Prerequisites
Prerequisites: a minimum B average, consent of the instructor, and approval by the Unit Head and the Department Chair.

When Offered
Offered in fall and spring.

Repeatable
May be repeated for credit if content changes
(1-3 cr.)

PSYC 403 - History and Systems of Psychology

Description
Places recent developments in psychology in a broad perspective. Emphasizes how new movements in psychology reflect both psychology's past and the influence of related fields such as the cognitive and neurosciences.

Prerequisites
Prerequisites: junior or senior standing and 15 hours of psychology, or permission of instructor.

When Offered
Offered in spring.
(3 cr.)

PSYC 407 - Psychological Anthropology

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.

Prerequisites
Prerequisites: 6 hours of anthropology, 6 hours of psychology, and junior or senior standing

Cross-listed
Same as ANTH 407.

When Offered
Offered occasionally.
(3 cr.)

**PSYC 410 - Cultural Psychology**

**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.

**Prerequisites**
PSYC 201 and junior or senior standing.

**When Offered**
Offered occasionally.
(3 cr.)

**PSYC 412/512 - Psychosocial Issues in Forced Migration**

**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.

**Prerequisites**
Prerequisites: Permission of the instructor.

**Cross-listed**
Same as MRS 512

**When Offered**
Offered occasionally.
(3 cr.)

**PSYC 414 - Child Psychology**

**Description**
. Child psychology familiarizes students with contemporary theoretical and practical knowledge of child development. The theoretical level involves theories of child development, with a special emphasis on children with special cognitive, emotional and medical needs. The practical level requires students' involvement in the field by providing them with supervised applied experience in dealing with children with various special needs such as disability, childhood illnesses, and child abuse and neglect.

**Prerequisites**
PSYC 304 or permission of instructor.

**When Offered**
Offered occasionally
(3 cr.)

**PSYC 420 - Industrial/Organizational Psychology**
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.

Prerequisites
PSYC 301 and PSYC 327.

When Offered
Offered occasionally.

(3 cr.)

PSYC 430 - Advanced community psychology: Applied research and service

Description
This course provides an advanced introduction to theory and practice in community psychology, incorporating hands-on community service as an integral part of the course requirements. This course will build upon the theories and concepts covered in Psychology 330 (Community Psychology) by covering advanced research and program development strategies, and by introducing special topics of particular importance to Egypt. For example, internal migration, public policy, refugee integration and the importance of religion and religious-based services to community programs will be covered in this course. This service-learning course will combine theoretical readings, class discussions, and guest lectures by service providers from the Cairo area with experiential learning in the form of direct community service.

Prerequisites
PSYC 201, PSYC 330 and permission of instructor.

(3 cr.)

PSYC 440-441 - Practicum in Community Development

Description
Two semester, nine month field experience in an approved international development agency, local NGO or other professional setting approved by faculty supervisor. Supervised by a professional and faculty supervisor.

Prerequisites
ANTH 240 and ANTH 340

Cross-listed
Same as ANTH/SOC 440-441.

When Offered
Offered in fall (440) and spring (441).

(6 cr.)

PSYC 442 - Clinical Psychology

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.

Prerequisites
PSYC 327, PSYC 342 and PSYC 380 or permission of instructor.

When Offered
Offered occasionally.

(3 cr.)

PSYC 500 - Fundamentals of Counseling
Description
This course is an introduction to culturally sensitive interviewing, listening, and report writing skills required of professional helpers. The course will also cover counseling theories and different schools of thought, combined with an overview of the techniques used by some of the theorists.
(3 cr.)

**PSYC 502 - Community Psychology and Systems Theory**

Description
This course examines the core theories, values, and methodologies of community psychology and systems theory.
(3 cr.)

**PSYC 503 - International and Multicultural Psychology**

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.
(3 cr.)

**PSYC 504 - Advanced Human Growth and Development**

Description
This course provides an in-depth examination of special topics in human development. Biological, cognitive, social, emotional, personality development through the life span will be examined.
(3 cr.)

**PSYC 505 - Ethics and Professional Issues**

Description
This course provides students with a multicultural working knowledge of ethical issues in mental health care practice and will introduce the concept of professional development. Students will discuss and role play ethical and legal dilemmas and solutions
(3 cr.)

**PSYC 506 - Psychopathology and Resilience across Cultures**

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.
(3 cr.)

**PSYC 508 - Applied Research Design and Statistical Analysis**

Description
This 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.
(3 cr.)
PSYC 510 - Counseling: Models and Methods

Description
This course reviews the history, present applications, and future trends in counseling. Students will be introduced to the principles assumptions and approaches associated with major theoretical schools including traditional and post-modern approaches.
(3 cr.)

PSYC 515 - Counseling Assessment: International Perspectives

Description
This course reviews commonly used methods for assessing and writing reports on dyadic relationships (couples, parent-child), and individuals across diverse cultural settings. These methods can be utilized during the intake, as an integrated component in counseling, or in clinical research.
(3 cr.)

PSYC 520 - Psychology in the Schools

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.
(3 cr.)

PSYC 525 - Consultation to non-Profit Organizations

Description
The purpose of this course is to provide students with the knowledge and skills necessary to engage in consultation, collaborative problem solving, and systems level intervention in non-profit settings, such as non-governmental organizations (NGOs).
(3 cr.)

PSYC 530 - Community Assessment and Program Evaluation

Description
This course will cover readings explicating concepts in and providing examples of ecological needs assessments and program evaluation.
(3 cr.)

PSYC 535 - Prevention and Intervention in Communities

Description
The purpose of this course is to provide students with structured readings and explorations of 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.
(3 cr.)

PSYC 540 - Community and Group Interventions
Description
This course provides an overview of the concepts and applications of group interventions in community and counseling contexts. Principles of group work will be reviewed, including systemic thinking, group dynamics and cohesion, professional tasks and challenges, and stages of group development.
(3 cr.)

PSYC 545 - Seminar in Cross-Cultural Family Studies

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.
(3 cr.)

PSYC 550 - Couples Counseling and Human Sexuality

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.
(3 cr.)

PSYC 551 - Arabic for Mental Health Professionals

Description
This course is an overview of basic Arabic phrases that can help mental health professionals in their clinical interventions with Arab-speaking clients.
(0 cr.)

PSYC 552 - Professional Development Seminar

Description
This course is an overview of topics that can enhance professional success of graduate students.
(0 cr.)

PSYC 570 - Special Topics in Psychology

Description
In-depth examination of a specific topic in psychology of current theoretical, research, or clinical interest. Topics will vary depending on instructor.

Prerequisites
Approval of advisor.

When Offered
Offered Occasionally.

Repeatable
May be repeated for credit if content changes.

(3 cr.)
PSYC 575 - Independent Study and Guided Readings

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.

Prerequisites
Minimum 3.0 GPA, consent of instructor, and approval of graduate advisor.

When Offered
Offered occasionally.
(1-3 cr.)

PSYC 580 - Practicum I in Counseling Psychology

Description
Introductory practicum in which students provide direct counseling 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. counseling assessment and interventions; b. session and case management skills; c. ethical and legal principles, and d. documentation such as record keeping and report writing.

Prerequisites
PSYC 500 PSYC 502 PSYC 504 PSYC 505 PSYC 510 PSYC 515 and approval of advisor.
(3 cr.)

PSYC 581 - Practicum II in Counseling Psychology

Description
Advanced practicum in which students provide direct counseling 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. counseling 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.

Prerequisites
PSYC 500 PSYC 502 PSYC 504 PSYC 505 PSYC 510 PSYC 515 and approval of advisor.
(3 cr.)

PSYC 586 - Practicum I in Community Psychology

Description
Introductory practicum in which students apply community psychology principles and methods in community settings with the support of individual and group supervision. Specialized skills will be gained at various levels of ecological analysis with an emphasis on ethical and professional practices, and may include consultation, prevention, community assessment or intervention, program evaluation, or public policy development.

Prerequisites
Approval of Advisor.
(3 cr.)

PSYC 587 - Practicum II in Community Psychology
Description
Advanced practicum in which students apply community psychology principles and methods in community settings with the support of individual and group supervision. Specialized skills will be gained at various levels of ecological analysis with an emphasis on ethical and professional practices, and may include consultation, prevention, community assessment or intervention, program evaluation, or public policy development.

Prerequisites
Approval of Advisor.
(3 cr.)

PSYC 589 - Professional Portfolio

Description
Diploma students will be responsible for completing and presenting a final capstone project under the supervision of a faculty advisor. This project is meant to provide diploma students with additional training in a specialization area such as schools, children, domestic violence, and HIV prevention. The portfolio includes a written paper and may be based on case studies, clinical work, or research.

Prerequisites
Approval of Advisor.
(1 cr.)

PSYC 590 - Internship in Counseling Psychology

Description
This course provides students with clinical training and experience in counseling 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.

Prerequisites
Completion of PSYC 506 PSYC 508 PSYC 540 PSYC 550 PSYC 580 and PSYC 581
(3 cr. + 3 cr.)

PSYC 596 - Internship in Community Psychology

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.

Prerequisites
PSYC 500 PSYC 502 PSYC 505 PSYC 508 PSYC 530 PSYC 535 and approval of advisor.
(3 cr.)

PSYC 599 - Research Guidance and Thesis

Description
Supervision in the preparation and writing of the Masters thesis. May be repeated for credit.

Prerequisites
Approval of advisor.
(3 cr.)
RCSS 501 - Robotics: Kinematics, Dynamics and Control

Description

Cross-listed
Same as MENG 561.
(3 cr.)

RCSS 502 - Embedded Real Time Systems

Description

Cross-listed
Same as MENG 562.
(3 cr.)

RCSS 503 - Modern Control Design

Description

Cross-listed
Same as MENG 563.
(3 cr.)

RCSS 504 - Applied Estimation

Description
RCSS 521 - Intelligent and Autonomous Robotic Systems

**Description**

**Cross-listed**
Same as MENG 564.

(3 cr.)

RCSS 522 - Mechatronics Innovations and Experimental Robotics

**Description**

(3 cr.)

RCSS 523 - Bioinspired Robotics and Multi Robotic Systems

**Description**

(3 cr.)

RCSS 524 - Robotics and Intelligent Automated Manufacturing

**Description**
RCSS 531 - Teleoperation, Haptic Systems and Collaborative Control

Description

RCSS 532 - Robust and Optimal Control

Description

RCSS 533 - Nonlinear and Adaptive Control

Description

Prerequisites
Consent of instructor.

Cross-listed
Same as MENG 620.

RCSS 534 - Networked Control Systems: Design and Applications

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.

Prerequisites
EENG 321 and EENG 432
Cross-listed
Same as EENG 556.
(3 cr.)

RCSS 541 - Smart Systems and Computational Intelligence

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.

(3 cr.)

RCSS 542 - MEMS/NEMS Technology and Devices

Description
This course will cover basic MEMS/NEMS fabrication technologies, various transduction mechanisms such as piezoelectric, pyroelectric, thermoelectric, thermionic, piezoresistive, etc. In addition, the theory of operation of few sensors will be covered this will include infrared detectors, radiation sensors, rotation and acceleration sensors, flow sensors, pressure and force sensors, and motion sensors. Finally, the course will give insight of different techniques for analyzing experimental data.

Prerequisites
PHYS 215 and consent of instructor.

Cross-listed
Same as PHYS 556 and NANO 521.
(3 cr.)

RCSS 543 - Image Analysis and Computer Vision

Description

(3 cr.)

RCSS 544 - Sensors, Perception and Smart Systems

Description
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.

(3 cr.)

**RCSS 545 - Advanced Artificial Intelligence**

**Description**

**Cross-listed**
Same as CSCE 565.
(3 cr.)

**RCSS 590 - Graduate Thesis Seminar I**

**Description**
Seminar on research topics, research methodology and thesis writing. The seminars given by invited speakers include topics on the sustainable development and economic impact of RCSS and relevant technology, Industrial needs and the evolution of RCSS and advanced research.

**Cross-listed**
Same as ENGR 590.
(2 cr.)

**RCSS 591 - Graduate Thesis Seminar II**

**Description**
Seminars on research topics given by invited speakers that include ongoing development in the area of RCSS interdisciplinary field. In addition, seminars are given by the enrolled students on their research work.

**Prerequisites**
RCSS 590

**Cross-listed**
Same as ENGR 591.
(1 cr.)

**RCSS 592 - Selected Topics in RCSS**

**Description**
Topics to be chosen according to specific interests. Maybe taken for credit more than once if content changes.

**Prerequisites**
Consent of the faculty advisor.
(3 cr.)

**RCSS 593 - Capstone Project**
**Description**
Students are required to attend the library and the writing modules of RCSS 590 and 599, 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.

(3 cr.)

**RCSS 599 - Research Guidance Thesis**

**Description**
Consultation on problems related to student thesis. Must be taken at least twice for credit.

**Prerequisites**
RCSS 590

(3 cr.)

**RCSS 692 - Advanced Selected Topics in Robotics, Control and Smart Systems (RCSS)**

**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.

(3 cr.)

**RHET 101 - Approaches to Critical Writing**

**Description**
Develops proficiency in critical expository writing, critical reading and greater fluency in expression. Focuses on the writing process with an emphasis on developing the student's voice, organizing and developing ideas independently within the context of academic writing. Introduces library research and use of sources.

When Offered
Offered in fall, spring and summer.

(3 cr.)

**RHET 102 - Effective Argument**

**Description**
Develops the skills to produce effective argument with a focus on organization, content, analysis of readings, critical thinking. Provides training in the use and integration of sources, library and online research.

**Prerequisites**
RHET 101

When Offered
Offered in fall, spring and summer.

(3 cr.)

**RHET 199 - Selected Topics**

**Description**
Course addressing broad intellectual concerns and accessible to all first year students irrespective of major.

When Offered
Offered occasionally.
(3 cr.)

**RHET 201 - Research Writing**

**Description**
Develops the skills to produce extended forms of academic essays and research papers with a focus on the methods of research, process of research paper writing, integration and evaluation of sources and critical analysis.

**Prerequisites**
RHET 102 or its equivalent.

**When Offered**
Offered in fall, spring and summer.
(3 cr.)

**RHET 225 - Public Speaking**

**Description**
Public Speaking is a course designed to provide both a practical introduction to the fundamental principles of speaking in public and a forum for practicing public speaking skills. Through a variety of instructional strategies - discussion, class workshops, readings, lectures, and presentations - students learn the processes by which effective speeches are conceived, prepared, and delivered.

**Prerequisites**
RHET 201 or its equivalent.
(3 cr.)

**RHET 299 - Selected Topics**

**Description**
Course addressing broad intellectual concerns and accessible to all students irrespective of major.

**Prerequisites**
RHET 101

**When Offered**
Offered occasionally.
(3 cr.)

**RHET 310 - Effective Rhetoric: Discourse and Power**

**Description**
This course guides students through key texts in rhetorical theory to give them not only a foundational knowledge of major questions, concepts and debates in the field but also to provide them with the language and tools to critically analyze a variety of texts, whether these texts be visual, oral, or written. Students will reflect on, through various writing assignments, the intellectual, social, and political contributions of rhetoric to the study of human communication.

**Prerequisites**
RHET 201 or its equivalent.
(3 cr.)

**RHET 320 - Business Communication**
Description
This course focuses on the methods of persuasion that business professionals and administrators of organizations use to shape messages for professional and public audiences. Rhetorical analyses of various workplace document genres are followed by application of knowledge and skills to produce effective and appropriate business messages. Students will conduct research on topics of interest to the business community, and present findings in the form of proposals, formal reports, and oral presentations.

Prerequisites
RHET 201 or equivalent; junior standing or instructor approval.

When Offered
Offered in fall, spring and summer.
(3 cr.)

RHET 321 - Technical Communication

Description
This course develops the knowledge and skills to produce technical documents that meet professional and ethical standards required by technical fields and professions. It focuses on both the rhetorical and workplace problems that are addressed by writers, such as audience, exigency and purpose, and workplace constraints. Throughout the course, students will analyze and discuss recent areas of concern in the field technical communication, as well as produce documents in various technical genres, including proposals and formal reports.

Prerequisites
RHET 201 or equivalent; junior standing or instructor approval; science and engineering majors or instructor approval.

When Offered
Offered in fall, spring and occasionally in summer.
(3 cr.)

RHET 322 - Writing in the Social Sciences

Description
This course focuses on writing in the student's discipline. Particular attention is paid to the conventions of professional writing and citation, as well as a variety of approaches to delivering discipline-specific information to diverse audiences. Also included are advanced research, public writing and public presentations.

Prerequisites
RHET 201 or equivalent; consent of instructor, consent of Chair/Associate Chair, junior or senior standing.
(3 cr.)

RHET 323 - Changing Words, Changing Worlds

Description
Changing Words, Changing Worlds engages students with contemporary discourse within the humanities. It takes as its point of departure a seminal work that frames our understanding and concepts within the humanities relating how this key text acts as a trajectory creating a paradigm shift and permeating into other fields, such as Marx's Manifesto of the Communist Party. By analyzing the interplay between language and ideas, students will be able to relate to how discourse within one area of the humanities is infiltrated becoming a reference point for other fields.

Prerequisites
RHET 201 or equivalent.
(3 cr.)

RHET 325 - The Rhetoric of Argument in the Humanities and Social Sciences
Description
This course engages students in the study of argumentation, its theory and practice. Students will employ instruments for identifying differences of opinion, analyzing and evaluating explicit and implicit standpoints of argument, and presenting arguments in oral and written discourse.

Prerequisites
RHET 201 or equivalent.
(3 cr.)

RHET 330 - Writing and Cognition

Description
This course takes an interdisciplinary approach to the phenomenon of writing by examining the cultural values embedded in writing and the cognitive claims about the relationship between thought and language, and by surveying the ways written expression has been used as a tool for reconstructing perception, memory, self and society. These issues will be approached through reading and writing together, and through experimenting with assumptions and hypotheses about what happens when people write. Class readings come from history, philosophy, cognitive psychology, composition studies, and literature.

Prerequisites
RHET 201 or equivalent.
(3 cr.)

RHET 332 - Presentation and Persuasion in Business

Description
This course acquaints students with both the presentation and interpersonal communication skills required in business-related, professional situations. It addresses both the composition and the delivery of professional speeches, such as sales presentations, convention addresses, job bids, as well as the interpersonal skills necessary for the successful conduct of business discourse, in particular negotiation contexts.

Prerequisites
RHET 201 or equivalent.
(3 cr.)

RHET 334 - Digital Rhetoric

Description
This is a course in the rhetorical analysis of the relatively new but increasingly important genres that comprise the various practices of E-Writing, including: blogging, wiki-development, networked writing, hypertext, social networking and other manifestations of the digital age. Students will study and work with various digital environments with attention to their evolving possibilities and constraints.

Prerequisites
RHET 201 or equivalent.
(3 cr.)

RHET 340 - Life Narratives: Reading as Writers

Description
This reading-intensive course will introduce students to the field of autobiographical and biographical literature known as life writing. Students will analyze writing strategies in 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.

Prerequisites
RHET 201 or equivalent.
(3 cr.)

**RHET 341 - Travel Writing**

**Description**
In this course, students will become familiar with the genre of travel writing, and 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-à-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.

**Prerequisites**
RHET 201 or equivalent.
(3 cr.)

**RHET 342 - Writing Children's Literature**

**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.

**Prerequisites**
RHET 201 or equivalent.
(3 cr.)

**RHET 345 - The Writer's Workshop**

**Description**
This course focuses on the writing and critique of personal narratives, reflecting upon students’ places as individuals within the larger contexts of family, country, and/or region. They will learn fundamentals of narrative life writing, understand the crafts of writing and revising, and consider their life stories in the wider context of cultural theory. Students will learn and practice advanced discussion techniques in workshop, when narratives are critiqued by instructor and peers.

**Prerequisites**
RHET 201 or equivalent.
(3 cr.)

**RHET 380 - Poetry Writing**

**Description**
As a workshop with a significant critical component, this course focuses on developing students' mastery of language through the writing of poetry. That writing is grounded with an examination of poetry's rhetorical and cultural impact. Students in this course will write a series of poems in response to weekly assignments, analyze the work of poets from both the West and the Middle East, and complete a final portfolio that shows significant revision and careful analytical thinking about the poems themselves as well as their place within the genre.

**Prerequisites**
ECLT 370
(3 cr.)
RHET 399 - Selected Topics

Description
Course addresses broad intellectual concerns, and is accessible to all students irrespective of major.

Prerequisites
RHET 201 or equivalent.
(3 cr.)

RHET 400 - Writing and Editing for Publication

Description
This course develops the skills to produce effective articles and presentations with a focus on journal submission requirements, journal review and publication processes. Provides training in the integration of information technology for presentations, and in primary and secondary research methods.

Prerequisites
RHET 201 or equivalent.
(3 cr.)

RHET 410 - Grant Writing for Community Building

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.

Prerequisites
RHET 201 or equivalent.
(3 cr.)

RHET 450 - Imagining the Book

Description
Students in this course will complete a substantial portion of a long writing project while analyzing and modeling approaches to manuscripts. Each student will design and generate a different project, so projects 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.). Students will engage in the process of writing a manuscript through utilizing genre analysis and class workshops. Students in a number of writing contexts and disciplines, as well as Rhetoric and Writing Minors, are encouraged to take this capstone course.

Prerequisites
At least one 300-level RHET course and/or instructor permission solicited through a project proposal.
(3 cr.)

RHET 460 - Independent Study

Description
In exceptional circumstances, students, in consultation with a faculty member and with approval of the Chair/Associate Chair, 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.
Prerequisites
Pre-requisites: Consent of Instructor, Consent of Chair/Associate Chair, Junior or Senior Standing.
(1-3 cr.)

RHET 480 - Research and Writing Internship

Description
This capstone course immerses students into an applied, real-world writing experience that helps them transition from academic writing to workplace writing, as well as provides in-class guidance and reflection. Students select one of three tracks of internship experience – professional business writing, literary writing and publishing, or technical writing for non-profits.

Prerequisites
RHET 201 or equivalent; B in 300 or 400-level RHET course.
(3 cr.)

RHET 490 - Advanced Scientific and Technical Writing

Description
This course develops advanced scientific and technical communication skills for both academic and practical environments. It features the IMRAD method of report writing, oral and visual presentation skills for senior projects, literature reviews for scientists and engineers, technical reports for the workplace, and technical documents that represent organizations to the public.

Prerequisites
RHET 201 or equivalent. Engineering and Science Majors only; junior or senior standing.
(3 cr.)

SCI 105 - Science and Technology of Ancient Egypt

Description
Development of civilization in ancient Egypt. Primitive time reckoning and measurement. Building materials. Outline of the different chemical arts and crafts which developed in Egypt as interpreted from mural paintings and works of art. Mummification. Aspects of mathematics and medicine in ancient Egypt.

Prerequisites
Prerequisite: Not for credit for Science, Engineering and Computer Science students.

When Offered
Offered in fall and spring.
(3 cr.)

SCI 109 - Exploration of the Universe

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.

Prerequisites
Prerequisite: Not for credit for Science, Engineering and Computer Science students.

When Offered
Offered in fall and spring.
(3 cr.)
SCI 120 - Scientific Thinking

Description
The course emphasizes the unifying aspects of the scientific approach to the study of nature and human behavior. About one-third of the course is devoted to scientific inquiry and investigation. The course focuses on fact identification and concept formation and testing. In the remaining parts, the students are exposed to applications of the approach in various disciplines. The course sets some basic concepts and theories of science into broad historical, philosophical, and cultural context and traces the development of these theories to their present status. This serves the double purpose of acquainting students with the appropriate setting in which a given idea gained relevance and exposing them to the evolution toward the current methods of investigation. Moral and ethical issues in science are examined.

When Offered
Offered in the fall and spring.
(3 cr.)

SCI 150L - General Science Laboratory

Description
Introduction to experimental techniques of measurement in the general fields of physics, chemistry, and other sciences.

Prerequisites
SCI 120 or concurrently and not for credit for Science, Engineering and Computer Science students.

Hours
One three-hour lab period.

When Offered
Offered in fall, spring, and occasionally in winter and summer
(1 cr.)

SCI 199 - Selected Topic for Core Curriculum

Description
Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

When Offered
Offered occasionally.
(3 cr.)

SCI 240 - Chemistry, Art and Archaeology

Description
The course provides students with some grounding in the application of Natural Sciences to the solution of problems related to Art and Archaeology and instigates in them an appreciation of the complementary contributions of the Humanities and Sciences to the study of particular phenomenon. Students are introduced to analytical scientific techniques on a need to know basis depending on relevant applications. Celebrated cases of fakes and forgeries are discussed. The course aims at enhancing the student’s analytical ability and skills to solve problems related to forgery.

When Offered
Offered in fall and spring.
(3 cr.)

SCI 250 - Introduction to Geology

Description
Fostering a basic understanding of the physical environment and the nature of forces at work that shape our dynamic
planet, this course provides an introduction to the material, origin, history, internal structure of the earth and the presently accepted system unifying plate tectonics, continental drift and sea floor spreading. The economic contribution of geology to development with an emphasis on Egypt is included.

**When Offered**
Offered in fall and spring.
(3 cr.)

**SCI 251L - Introduction to Geology Lab**

**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.
(1 cr.)

**SCI 260 - Environmental Geology**

**Description**
Environmental geology is applied geology focussing briefly on the entire spectrum of possible interactions between people and the physical environment.

**When Offered**
Offered occasionally.
(3 cr.)

**SCI 302 - Science, Technology and the Environment**

**Description**
An introductory, multidisciplinary approach to studying the relationships between science, technology and the environment. Principles of ecosystem structure, function, balance, communities and populations. Principles of environmental sciences, outline of crises, overpopulation, depletion and pollution. Framework for understanding environmental problems. Group projects, aimed at exploring broad range of environmental issues from an interdisciplinary approach, constitute a major component of the course.

**Prerequisites**
Prerequisites: Junior standing or higher.

**When Offered**
Offered occasionally.
(3 cr.)

**SCI 450 - Geology of Raw Materials**

**Description**
An interdisciplinary study. The geology of naturally occurring minerals, methods for determining the utility of natural resources, and the environmentally sound industrial conversion of raw materials. Particular attention given to the natural resources of Egypt, especially to their importance in economic development.

**Prerequisites**
SCI 250 or consent of instructor

**When Offered**
Offered occasionally.
(3 cr.)

**SEMR 111 - The Human Quest: Exploring the “Big Questions”**

**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.

(3 cr.)

**SEMR 112 - “Who Am I?”: Explorations in Consciousness and Self Across the Disciplines”**

**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.

(3 cr.)

**SEMR 123 - Celebrating Ideas: A Voyage Through Books, film, Art and Theater**

**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.

(3 cr.)

**SEMR 199 - Selected Topics in Core Curriculum**

(3 cr.)

**SEMR 200 - Core Seminar**

**SEMR 299 - Selected Topics in the Humanities**

(3 cr.)

**SEMR 300 - Core Honors Seminar**

(3 cr.)
SEMR 310 - Cross-Cultural Perceptions and Representations

Description
This is an interdisciplinary course, which draws upon literary, political, cultural, and sociological sources. It attempts to understand how our conceptions of the other (and of the self) have contributed to some of the abiding political, sociological and cultural issues which animate our global world—especially where these issues implicate both the west and the Middle East; and, second, to articulate our own hopes for a more promising relationship with the Other. Each week a videoconference will be held to bring together students from AUC and students from various US universities to discuss a pressing issue of concern to both east and west and a shared set of texts that address the issue.

(3 cr.)

SOC 199 - Selected Topic for Core Curriculum

Description
Course addressing broad intellectual concerns and accessible to all first-year students as part of the Primary Level Core.

(3 cr.)

SOC 201 - Introduction to Sociology

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.

(3 cr.)

SOC 203 - Social Problems of the Middle East

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.

(3 cr.)

SOC 204 - Social Statistics

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.

Prerequisites
Prerequisites: Students must have taken SOC 201, no exceptions

When Offered
Offered in fall.

(3 cr.)

SOC 206 - Arab Family Structure and Dynamics
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 spring.
(3 cr.)

SOC 210 - Arab Society

Description
Description and analysis of social and cultural characteristics and problems of contemporary Arab Society, taking into consideration the specific historical, economic, and ideological forces that shape it. The social basis for Arab unity and identity. Introduction to basic concepts and principles for understanding social phenomena.

Prerequisites
RHET 201 or concurrent.

Cross-listed
Same as ANTH 210.

When Offered
Offered in fall and spring.
(3 cr.)

SOC 240 - Introduction to Community Development

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 ANTH/PSYC 240.

When Offered
Offered in fall.
(3 cr.)

SOC 299 - Selected Topic for Core Curriculum

Description
Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

Prerequisites
RHET 101

When Offered
Offered occasionally.
(3 cr.)

SOC 301 - Social Psychology

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.
Prerequisites
PSYC 201
Cross-listed
Same as PSYC 301.
When Offered
Offered occasionally.
(3 cr.)

SOC 303 - Social Movements

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.
Prerequisites
Three hours of Social Sciences.
Cross-listed
Same as ANTH 303.
When Offered
Offered in spring.
(3 cr.)

SOC 304 - Development Agencies

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.
(3 cr.)

SOC 306 - Sociology of Literature

Description
The social bases of literary productions both oral and written and the functions of literature for social integration. The interrelationship of literary expression and movements for social change.
When Offered
Offered occasionally.
(3 cr.)

SOC 307 - Social Class and Inequality

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.
(3 cr.)

SOC 309 - History of Social Theory
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.

Prerequisites
Prerequisites: 9 hours of social sciences, and junior or senior standing, or consent of instructor.

Cross-listed
Same as ANTH 309.

When Offered
Offered in fall.
(3 cr.)

SOC 310 - Contemporary Sociological Theory

Description
The main trends, basic problems, and unresolved issues of post-war sociological thought. Essential aspects of the logic of scientific inquiry; contemporary theories as model building in sociology including new functionalism, critical theory, structuralism and poststructuralism.

Prerequisites
SOC 309 or consent of instructor.

Cross-listed
Same as ANTH 310.

When Offered
Offered in spring.
(3 cr.)

SOC 321 - The Urban Experience

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?

Prerequisites
Three hours of Social Sciences.

Cross-listed
Same as ANTH 321.

When Offered
Offered occasionally.
(3 cr.)

SOC 322 - Rural Sociology

Description
The Middle Eastern rural community and its relation to agricultural development, tenure systems, ecological processes, urbanization, migration, and changing technology.

When Offered
Offered occasionally.
(3 cr.)
SOC 323 - Fundamentals of Population Studies

Description
Facts and issues of human population. Creates demographic literacy, and an ability to deal with population realities. Substantive knowledge covering processes and determinants of population structure, growth, and changes: fertility, mortality, and migration, as well as challenges of population growth.

When Offered
Offered in alternate years.

SOC 332 - Social Constructions of Difference: Race, Ethnicity, and Class

Description
The course will first introduce students to the vast theoretical literature on the concepts of race, ethnicity and class 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, ethnic and class identities are shaped by diverse hegemonic systems, modes of resistance, and the structuring of social relations in different societies.

Prerequisites
Three hours of Social Sciences.

Cross-listed
Same as ANTH 332

When Offered
Offered occasionally.

SOC 340 - Participatory Action Research in Community Settings

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.

Prerequisites
ANTH 240 or consent of the instructor.

Cross-listed
Same as ANTH/PSYC 340.

When Offered
Offered in spring.

SOC 370 - Environmental Issues in Egypt

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.

Prerequisites
Three hours of Social Sciences.

Cross-listed
Same as ANTH 370.

When Offered
Offered in alternate years.
SOC 381 - Doing Survey Research in the Social Sciences

Description
This course introduces students to the basic survey methods used in the social sciences. Emphasis is on the logic of social science and the implications of the major forms of quantitative research methodology. Allows students to recognize and analyze merits of research in the social sciences including public opinion and policy action research.

Prerequisites
SOC 201 and SOC 204. For sociology minors only: An equivalent statistics course may be substituted for SOC 204 only with the permission of the instructor.

When Offered
Offered in spring

Notes
Students will be encouraged to conduct mini-scale surveys on the campus and beyond.

(3 cr.)

SOC 400 - Selected Topics in Sociology

Description
Topics to be chosen according to specific interests, such as sociology of medicine, sex roles, symbolic interaction, applied sociology.

Prerequisites
Prerequisites: 9 hours of social sciences, and junior or senior standing.

When Offered
Offered occasionally.

Repeatable
May be repeated for credit if content changes.

(3 cr.)

SOC 402 - Independent Study

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

Prerequisites
Prerequisites: a minimum B average, consent of the instructor, and approval by the Unit Head and the Department Chair.

When Offered
Offered in fall and spring.

Repeatable
May be repeated for credit if content changes

(3 cr.)

SOC 405 - Sociology of Work

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.

Prerequisites
Prerequisites: Junior or senior standing, 6 hrs. of social science or the permission of the instructor.

When Offered
Offered occasionally.
(3 cr.)

**SOC 406 - Educational Sociology**

**Description**
The nature and interrelationship of educational agencies to other social institutions. The emergent structure of Middle Eastern educational programs and their implications for social change and integration.

**Prerequisites**
Prerequisites: 9 hours of social sciences, and junior or senior standing.

**When Offered**
Offered occasionally.
(3 cr.)

**SOC 408 - Criminology**

**Description**
Theories of crime and social control. Institutional programs charged with the custody and treatment of law violators. Problems of deviance as related to class structure and social change.

**Prerequisites**
Prerequisites: 9 hours of social sciences, and junior or senior standing.

**When Offered**
Offered occasionally.
(3 cr.)

**SOC 422 - Religion in a Global World**

**Description**
Comparative study of religion in culture and society. The course will explore a variety of theories and controversies in the anthropological understanding of religion. Emphasis is on how religion may restrict but also empower believers, inform their social identities, and intersect with political and economic practices and institutions in a globalizing world.

**Prerequisites**
Prerequisites: 9 hours of social sciences and junior or senior standing.

**Cross-listed**
Same as ANTH 422 and EGPT 546.

**When Offered**
Offered in fall.
(3 cr.)

**SOC 431 - Political Sociology**

**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.

**Prerequisites**
Prerequisites: 9 hours of social sciences, and junior or senior standing

**Cross-listed**
Same as POLS 431.

**When Offered**
Offered in fall.
(3 cr.)
SOC 435 - Gender and Power in Development

Description
The course will examine the transformations in the lives of women and men through development and incorporation into global economic and political systems from a sociological perspective, particularly from the "Third World". However, the focus is not limited to women, but rather concentrates on the structure and process of gender relations. In examining "gender politics", we will explore the politicization of gender relations at various levels of society, from domestic settings to national contexts to the international sphere.

Prerequisites
Prerequisite: nine hours of social sciences, at least junior standing or the consent of the instructor.

When Offered
Offered annually.

(3 cr.)

SOC 440-441 - Practicum in Community Development

Description
Two semester, nine month field experience in an approved international development agency, local NGO or other professional setting approved by faculty supervisor. Supervised by a professional and faculty supervisor.

Prerequisites
ANTH 240 and ANTH 340

Cross-listed
Same as ANTH/PSYC 440-441.

When Offered
Offered in fall (440) and spring (441).

(6 cr.)

SOC 445 - Selected Topics in Coptic Studies

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, EGPT, HIST, ANTH 445.

When Offered
Offered in fall.

Notes
Students in these majors may petition preferably before registration to have the course included in their major requirements.

(3 cr.)

SOC 450 - Third World Development

Description
Contemporary theories of development as they apply to and illuminate the problems of development in underdeveloped countries. The approach will be interdisciplinary.

Prerequisites
Prerequisites: 9 hours of social sciences and junior or senior standing.

Cross-listed
Same as ANTH 450.

**When Offered**
Offered in fall and spring.

(3 cr.)

**SOC 455 - Seminar in African Studies**

**Description**
Through the examination of a contemporary topic in African Studies, this interdisciplinary seminar examines epistemological and methodological issues in African Studies such as transformation, resistance, power, technology, and women and development. Original sources will be used to examine the theoretical assumptions, data, and methods underlying the literature. Prior course work in African Studies is recommended.

**Prerequisites**
9 hours of Social Sciences and Junior or Senior standing.

**Cross-listed**
Same as ANTH 455.

**When Offered**
Offered occasionally.

(3 cr.)

**SOC 460 - Development Studies Seminar**

**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.

**Prerequisites**
Prerequisites: 12 hours of social science

**Cross-listed**
Same as ANTH/ECON/POLS 460.

**When Offered**
Offered occasionally.

(3 cr.)

**SOC 495 - Senior Seminar**

**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.

**Prerequisites**
Senior standing and SOC 381 or ANTH 380 or 12 hours of Social Sciences.

**Cross-listed**
Same as ANTH 495.

**When Offered**
Offered in spring.

**Notes**
The student will be required to write a methodologically sound senior paper, preferably based on field research.

(3 cr.)

**SOC/ANTH 500 - Classical Social Thought**
Description
An in-depth examination of classical sociological and anthropological theories of culture and society.

When Offered
Offered in fall.
(3 cr.)

SOC/ANTH 501 - Contemporary Social Thought

Description
An in-depth examination of contemporary sociological and anthropological theories of culture and society.

Prerequisites
SOC/ANTH 500

When Offered
Offered in spring.

SOC/ANTH 502 - Structure and Process in Egyptian Society

Description
Emphasis on those forces which have given Egyptian society cohesion and continuity in a rapidly changing world. Crucial issues confronting social scientists and planners.

When Offered
Offered in occasionally.
(3 cr.)

SOC/ANTH 503 - Middle Eastern Societies and Cultures

Description
A survey of the present state of knowledge concerning Middle Eastern societies, with an emphasis on the disciplinary approaches of sociology and anthropology.

When Offered
Offered in spring.
(3 cr.)

SOC/ANTH 505 - Ethnographic Fieldwork

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.
(3 cr.)

SOC/ANTH 506 - Survey Research

Description
Techniques and issues in survey research. Sampling, operationalization, questionnaire design, survey application and analysis of survey data. The course is designed to give students hands-on experience in every aspect of survey research.

When Offered
Offered in spring.
(3 cr.)
SOC/ANTH 507 - Introduction to Forced Migration and Refugee Studies

Description
This course examines the changing political, social, and legal contexts within which people become forced migrants or refugees. Of particular concern are policies which generate, regulate, and protect the movement of forced migrants, the interaction between national governments and the United Nations High Commissioner for Refugees, the psychological aspect of refugee status, and the social and cultural organization of refugee and migrant communities, including notably gender aspects and the role of children. This course is required of all students seeking the diploma in Forced Migration and Refugee Studies.

Prerequisites
Prerequisite: Graduate standing or advanced undergraduate standing and permission of instructor.

Cross-listed
Same as MRS 507.

When Offered
Offered in fall.
(3 cr.)

SOC/ANTH 508 - Special Topics in Migration and Refugee Issues

Description
Topics discussed may vary depending on the instructor. Focus of the course will be announced prior to registration. Course may be repeated for credit if content changes.

Cross-listed
Same as MRS 508.
(3 cr.)

SOC/ANTH 510 - Problems in Sociology-Anthropology

Description
Problems discussed may vary depending on the instructor and the needs of the students. Focus of the class will be announced prior to registration. Course may be repeated for credit if content changes.

When Offered
Offered occasionally.
(3 cr.)

SOC/ANTH 515 - Kin, Friends and Neighbors

Description
Principles underlying group formation at the local level, such as kinship, residence, and friendship and the resultant web of collective and dyadic relations; special emphasis on the articulation of these groups with class, occupational and ethnic groups, and the state.

When Offered
Offered in alternate years.
(3 cr.)

SOC/ANTH 520 - Sex Roles, Gender and Society

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.
SOC/ANTH 525 - Religion, Ideology and Society

Description
The relation of ideology and world religions to social action; special emphasis on the integrative aspects on society as well as their potential for change and transformation.

When Offered
Offered in alternate years.
(3 cr.)

SOC/ANTH 530 - Theorizing the State

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.
(3 cr.)

SOC/ANTH 535 - World Systems and Development

Description
Theories of the growth of the new international division of labor and its relationship to socioeconomic change in both developed and developing societies.

When Offered
Offered in alternate years.
(3 cr.)

SOC/ANTH 540 - Revisiting the Rural

Description
This course examines the remaking of rural communities in relation to historical shifts in capital and state dynamics, the organization and practice of everyday life, the politics of labor and property, and the production of desire and subjectivity.

When Offered
Offered in alternate years.
(3 cr.)

SOC/ANTH 545 - Cities: Structure and Dynamics

Description
The structure of urban forms, patterns of city life, and the relationship of cities to the wider societies of which they are part.

When Offered
Offered in alternate years.
(3 cr.)

SOC/ANTH 550 - Sociology of Knowledge
Description
The epistemological foundations and social framework of knowledge; what is involved in “having knowledge” about society.

When Offered
Offered in alternate years.

(3 cr.)

SOC/ANTH 555 - Comparative Health and Healing Systems

Description
Cross-cultural and multidisciplinary approach to the crucial issues which link the social sciences to health and healing systems. Special emphasis on issues of health and healing under conditions of social and cultural change; development and policy in the Middle East.

When Offered
Offered in alternate years.

(3 cr.)

SOC/ANTH 560 - Population Dynamics

Description
A consideration of the causes and consequence of the growth and decline of population through the analysis of fertility, mortality, and migration. Issues and research related to rapid population growth and labor migration will be emphasized.

When Offered
Offered in alternate years.

(3 cr.)

SOC/ANTH 565 - Ethnicity, Identity and Nationalism

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.

(3 cr.)

SOC/ANTH 570 - Environment and Society

Description
This course uses a broad interdisciplinary approach to analyze the relationship between development and environmental degradation, the ways in which development enhances protection, and the issues of sustainable development. It covers the social movements that may emerge around the environmental concerns, and the social processes that lead to environmental risks.

When Offered
Offered in alternate years.

(3 cr.)

SOC/ANTH 575 - Modern Social Movements
Description
The emergence of modern social movements based on such issues as gender, ecology, race, ethnicity, community control, and identity. The relation between "new" social movements and earlier social movements based on class, national liberation, and revolutionary transformation, with comparison between First and Third World movements.

When Offered
Offered in alternate years.
(3 cr.)

SOC/ANTH 580 - History and Memory

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.
(3 cr.)

SOC/ANTH 591 - Guided Research

Description
Fieldwork under the supervision of the Social Research Center or a member of the departmental staff.
(1-3 cr.)

SOC/ANTH 598 - Thesis Writing Seminar

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.

Prerequisites
SOC/ANTH 500, SOC/ANTH 501 and either SOC/ANTH 505, SOC/ANTH 506 or the consent of the instructor.
(3 cr.)

SOC/ANTH 599 - Research Guidance and Thesis

Description
Consultation for students in problems related to their theses.

When Offered
Offered in fall and spring.
(no cr.)

TAFL 501 - Principles of Linguistic Analysis

Description
Concepts fundamental to linguistic analysis in the areas of syntax, semantics, phonology, historical linguistics, sociolinguistics, and language acquisition.

Cross-listed
Same as TESL 501.

When Offered
Offered in fall.
(3 cr.)
TAFL 502 - Assessment in Language Learning

Description
A practical course that will enable the student to develop valid and reliable assessment procedures, analyze results, and evaluate the procedures.

Cross-listed
Same as TESL 502.

When Offered
Offered in fall.

(3 cr.)

TAFL 503 - Second Language Acquisition

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.

Prerequisites
TAFL 501 or permission of the department. Recommended prerequisite: TAFL 520

Cross-listed
Same as TESL 503.

When Offered
Offered in fall and spring.

(3 cr.)

TAFL 507 - Computer Assisted Language Learning (CALL)/Computer Operations Techniques

Description
Description, analysis and evaluation of CALL software. Integration of CALL into AFL learning. Guided practical experience in producing AFL software using authoring programs. Using the Internet as a resource for learning AFL.

Prerequisites
TAFL 510

When Offered
Offered once a year.

(3 cr.)

TAFL 510 - Methods of Teaching a Foreign Language I

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.

Cross-listed
Same as TESL 510.

When Offered
Offered consecutively with TAFL 511.

(3 cr.)

TAFL 511 - Methods of Teaching a Foreign Language II
Description
Survey of approaches to the design and implementation of foreign language curricula and teaching materials and teaching practicum. The practicum includes foreign language classroom observations, supervised practice teaching, and materials development, selection, and adaptation.

Prerequisites
TAFL 510

When Offered
Offered consecutively with TAFL 510.
(3 cr.)

**TAFL 515 - The Phonetics of Arabic**

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.
(3 cr.)

**TAFL 516 - The Linguistics of Arabic**

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.
(3 cr.)

**TAFL 520 - Research Methods in Applied Linguistics**

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.

Cross-listed
Same as TESL 520.
(3 cr.)

**TAFL 525 - Language Transfer, Contrastive Analysis, and Error Analysis**

Description
The study of language contact and language transfer phenomena. Contrastive Analysis and error analysis within and beyond the sentence level. Models, procedures and theoretical underpinnings. Discourse function and organization. Implications for second/foreign language teaching and learning.

Prerequisites
TAFL 501

Cross-listed
Same as TESL 525.
When Offered
Offered once a year.
(3 cr.)

TAFL 540 - Selected Topics in Applied Linguistics

Description
Special topics and current issues in linguistics and language teaching with special reference to Arabic.

Cross-listed
Same as TESL 540.

Repeatable
May be taken more than once if content changes.
(1, 2, or 3 cr.)

TAFL 550 - Language Pragmatics

Description

Prerequisites
TAFL 501.

Cross-listed
Same as TESL 550.

When Offered
Offered once a year.
(3 cr.)

TAFL 551 - Advanced Arabic Grammar

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.
(3 cr.)

TAFL 553 - Sociolinguistics

Description

Cross-listed
Same as TESL 553.

When Offered
Offered once a year.
(3 cr.)

TAFL 555 - Seminar on Challenges Facing AFL Teachers
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. 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.

Prerequisites
TAFL 553
(3 cr.)

TAFL 560 - Supervised Study in TAFL

Description
Individual research on specific area of interest to the student.

Prerequisites
Prerequisite: consent of instructor.

When Offered
Offered in fall and spring.

Repeatable
May be taken a second time if content changes.
(3 cr.)

TAFL 563 - Language Variation and Change

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 will be analyzed 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 analyze linguistic data.

Prerequisites
TAFL 553
(3 cr.)

TAFL 588 - Comprehensives

Description
Individual consultation for students preparing for the comprehensive examination.

When Offered
Offered occasionally.
(no cr.)

TAFL 599 - Research Guidance and Thesis

Description
Consultation for students on matters related to their thesis.

When Offered
Offered in fall and spring.
(no cr.)

TESL 500 - English Grammar
Description
(3 cr.)

**TESL 501 - Principles of Linguistic Analysis**

Description
Concepts fundamental to linguistic analysis in the areas of syntax, semantics, phonology, historical linguistics, sociolinguistics, and language acquisition.

Cross-listed
Same as TAFL 501.
(3 cr.)

**TESL 502 - Assessment in Language Learning**

Description
A practical course that will enable the student to develop valid and reliable assessment procedures, analyze results, and evaluate the procedures.

Cross-listed
Same as TAFL 502.
(3 cr.)

**TESL 503 - Second Language Acquisition**

Description
Relationship between first and second language acquisition. Aspects of acquisition from a psycholinguistic perspective. Cognitive, linguistic, personality and classroom factors influencing SLA. Implications for teaching.

Prerequisites
TESL 501 or permission of the department. Recommended prerequisite: TESL/TAFL 520.

Cross-listed
Same as TAFL 503.
(3 cr.)

**TESL 507 - Computer Assisted Language Learning (CALL)**

Description
Description, analysis and evaluation of CALL software. Integration of CALL into EFL syllabus. Guided practical experience in producing EFL software using authoring programs. Using the Internet as a resource for teaching and learning EFL.

Prerequisites
TESL 510
(3 cr.)

**TESL 510 - Methods of TESOL I**

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.

Cross-listed
Same as TAFL 510.
(3 cr.)

**TESL 511 - Methods of TESOL II**

**Description**
Survey of approaches to the design and implementation of foreign language curricula and teaching materials. This teaching practicum is a capstone course and includes foreign language classroom observations, supervised practice teaching, and materials development, selection, and adaptation.

**Prerequisites**
TESL 510
(3 cr.)

**TESL 520 - Research Methods in Applied Linguistics**

**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.

**Cross-listed**
Same as TAFL 520.
(3 cr.)

**TESL 521 - English Syntax**

**Description**
A study of contemporary syntactic theories of generative grammar with particular reference to the choice of formalism, universal grammar and the claims they make about the nature of language, linguistic descriptions and implications for language teaching.

**Prerequisites**
TESL 501
(3 cr.)

**TESL 525 - Language Transfer, Contrastive Analysis, and Error Analysis**

**Description**
The study of language contact and language transfer phenomena. Contrastive analysis and error analysis within and beyond the sentence level. Models, procedures and theoretical underpinnings. Discourse function and organization. Implications for second/foreign language teaching and learning.

**Prerequisites**
TESL 501

**Cross-listed**
Same as TAFL 525.
(3 cr.)

**TESL 530 - Supervised Study in TESOL**

**Description**
Individual research on a specific area of interest to the student in consultation with the instructor.

**Prerequisites**
Consent of instructor.
Repeatable
May be taken a second time if content changes.
(3 cr.)

**TESL 540 - Selected Topics in Applied Linguistics**

**Description**
Special topics and current issues in linguistics and language teaching.

**Cross-listed**
Same as TAFL 540.

**Repeatable**
May be taken more than once if content changes.
(1, 2, or 3 cr.)

**TESL 548 - Corpus Linguistics**

**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.

**Prerequisites**
TESL 501
(3 cr.)

**TESL 550 - Language Pragmatics**

**Description**

**Prerequisites**
TESL 501
Cross-listed
Same as TAFL 550.
(3 cr.)

**TESL 553 - Sociolinguistics**

**Description**

**Cross-listed**
Same as TAFL 553.
(3 cr.)

**TESL 570 - Proposal Writing**

**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.

**Prerequisites**
TESL 520
(3 cr.)

**TESL 588 - Comprehensives**

**Description**
Consultation for students preparing for the comprehensive examination.
(no cr.)

**TESL 599 - Research Guidance and Thesis**

**Description**
Consultation for individual students on matters related to their theses.
(no cr.)

**THTR 125 - Acting for Non-Majors**

**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.
(3 cr.)

**THTR 130 - The World of the Theatre**

**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.
(3 cr.)

**THTR 199 - Selected Topic for Core Curriculum**

**Description**
Course addressing broad intellectual concerns and accessible to all first-year students as part of the Primary Level Core.

**When Offered**
Offered occasionally.
(3 cr.)

**THTR 203 - The Art of the Theatre**
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.
(3 cr.)

THTR 204 - Introduction to Technical Theatre

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.

(3 cr.)

THTR 225 - Acting I

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.

Prerequisites
THTR 203

When Offered
Offered in fall and spring, and occasionally in the summer.
(3 cr.)

THTR 226 - Acting in Arabic I

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.

Prerequisites
THTR 203

When Offered
Offered in fall or spring.
(3 cr.)

THTR 227 - Acting II

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.
Prerequisites
THTR 225

When Offered
Offered once a year.
(3 cr.)

**THTR 230 - Play Analysis**

Description
The development of the art of reading a play through detailed examination of its dramatic structure and in-depth analysis of its text. Both Western and Arabic plays will be examined.

When Offered
Offered in fall or spring.
(3 cr.)

**THTR 240 - Production Practicum**

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. Minimum of 50 hours of practical work are required. Students work under direct supervision of a theatre faculty member. May be repeated twice for credit.
(1 cr. per production)

**THTR 242 - Rehearsal and Performance Practicum**

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. May be repeated twice.
(1 cr. per production)

**THTR 299 - Selected Topic for Core Curriculum**

Description
Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

Prerequisites
RHET 101.

When Offered
Offered occasionally.
(3 cr.)

**THTR 324 - Design for the Theatre**

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.

Prerequisites
THTR 203 and THTR 204
When Offered
Offered once a year.
(3 cr.)

THTR 325 - Acting Styles

Description
An advanced acting class, offering exploration and techniques in varied acting styles, including but not limited to Greek/Roman, Medieval, Restoration, Neo-Classicism, Romanticism, 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.

Prerequisites
THTR 227

When Offered
Offered once every other year.
(3 cr.)

THTR 326 - Acting in Arabic II

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.

Prerequisites
THTR 226

When Offered
Offered in fall or spring.
(3 cr.)

THTR 327 - Special Topics in Acting

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.

Prerequisites
THTR 227

When Offered
Offered occasionally.
Repeatable
May be repeated for credit if content changes
(3 cr.)

THTR 328 - Directing I

Description
The fundamental directorial controls, as well as theoretical and practical training, leading to the production of single scenes.

Prerequisites
THTR 225 and THTR 230

When Offered
Offered in fall.
Repeatable
May be repeated once for credit as content changes.
(3 cr.)

**THTR 340 - Advanced Theatre Practicum**

**Description**  
Advanced, specialized, and intensive participation in theatre production activities. Assignments made in major supervisory positions in consultation with and under the supervision of a theatre faculty member. Technical production areas of scenery, costumes, props, lighting, sound, or stage management.

**Prerequisites**  
THTR 204, THTR 240 and consent of instructor.

**When Offered**  
Offered fall and spring.

**Repeatable**  
Repeatable for credit. No maximum.

(3 cr.)

**THTR 344 - Design Practicum**

**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.

**Prerequisites**  
Prerequisites: Selection by application and interview.

**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.

(3 cr.)

**THTR 350 - Survey of Dramatic Literature**

**Description**  
A study of major periods and distinctive styles and genres of drama from the Greeks to pre-Ibsen nineteenth century drama.

**When Offered**  
Offered in alternate falls.

(3 cr.)

**THTR 351 - History of The Theatre**

**Description**  
A survey of the history of the development of theatre architecture, scenic and costume practices, staging conventions, and acting troupes from the Greeks to the present. The course is taught in a combination of lecture and slide-show presentation.

**When Offered**  
Offered in alternate springs.

(3 cr.)
THTR 360 - Playwriting I

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.
(3 cr.)

THTR 361 - Playwriting II

Description
A workshop in which students develop the scenario they have produced in Playwriting I into a short one-act play to be performed as a staged-reading.

Prerequisites
Prerequisite: THTR 360.

When Offered
Offered in spring.
(3 cr.)

THTR 370 - Selected Topics in Theatre

Description
In-depth examination of specific topics in theatre determined by the special interests and expertise of the faculty.

Prerequisites
Prerequisite: consent of the instructor.

When Offered
Offered occasionally.

Repeatable
May be repeated for credit if content changes
(3 cr.)

THTR 402 - Independent Study

Description
In exceptional circumstances, some senior majors may arrange, with departmental approval, to study beyond the regular course offerings.

Prerequisites
Minimum B average required.

When Offered
Offered in fall and spring.
(1-3 cr.)

THTR 428 - Directing II

Description
Advanced theoretical and practical, production-oriented training in play direction culminating in the presentation of a directorial project.

Prerequisites
THTR 328 and completion of all 200-level requirements.

When Offered
Offered occasionally.
(3 cr.)

**THTR 460 - Modern and Contemporary Drama**

**Description**
An exploration of the drama of the modern age and of its most influential movements through the study of mainly European drama in the period from Ibsen to the present.

**When Offered**
Offered in alternate falls.
(3 cr.)

**THTR 461 - Dramatic Theory and Criticism**

**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.
(3 cr.)

**THTR 470 - Senior Seminar**

**Description**
In-depth examination of advanced topics in theatre determined by the special interests of the faculty.

**Prerequisites**
Prerequisite: consent of the instructor.

**When Offered**
Offered occasionally.

**Notes**
Designed for senior majors.
(3 cr.)

**THTR 490 - Senior Thesis**

**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.

**Prerequisites**
THTR 324 THTR 328 THTR 350 THTR 460 THTR 461 (or currently enrolled). Some projects will have additional prerequisites. Course should be taken in final semester at AUC.
(3 cr.)

**THTR 495 - Senior Honors Project**

**Description**
Offered to first or second semester seniors in the department who have distinguished themselves artistically and
academically (minimum 3.4 GPA in the major, 3.2 cumulative). A major project, combining research and creative work in the areas of directing, design, performance, playwriting, or dramaturgy.

**Prerequisites**
Prerequisite: consent of the instructor.

**When Offered**
Offered in fall and spring.

**Notes**
Projects will be chosen by students in consultation with a faculty advisor.

(3 cr.)