

2011-2012 CATALOG

Coordination

Dahlia A. Saad

Office of the Provost

Cover photo: AUC's Main Library - New Campus

Cover designed by the Communications Office, AUC.

CONTENTS

GENERAL INFORMATION	University Calendar 2011-2012	12
	Undergraduate Degree Programs	16
	Graduate Degree Programs	17
	I. The University	19
	Statement of Mission	19
	Non-Discrimination Policy	19
	History	19
	Accreditation	21
	Program Accreditation	21
	Governance and the Board of Trustees	21
	AUC Faculty	22
	Campus	23
	Profile	24
	Financial Support	25
	Scholarships and Fellowships	27
	Endowed Scholarships and Fellowships	29
	Special Awards	33
	II. Academic Organization and Support Services	35
	Academic Organization	35
	Schools	35
	Research Centers	41
	Research Support Offices	41
	Academic Support Services	41
	Libraries and Learning Technologies	41
	The Writing Center	43
	Information Technology	43
	The American University in Cairo Press	44
	Career Advising and Placement Services	45
	Office of Equal Opportunity and Affirmative Action	47
	Office of International Programs	48
UNDERGRADUATE STUDIES	I. Admissions	50
	Admission Policy and Procedures	50
	Academic Preparation	51
	English Language Proficiency	51
	The Admission Decision	52
	Admission to an Undergraduate Degree Program	52
	Transfer Admission	54
	Transfer Credit Award	54
	Transfer Credit After Matriculation	56
	Readmission	56

Study Abroad/Non Degree Admission	56
Change of Status	
from Non-Degree to Degree	57
Auditors	57
The Arabic Language Institute	57
Arabic Language Placement	57
II. First-Year Experience Program (FYE)	59
III. Academic Requirements and Regulations	60
Student Responsibility	60
Privacy Rights of Student Records	60
Undergraduate Academic Requirements	61
Residence	61
Graduation	62
Majors	62
Double Majors	62
Minors	63
Undergraduate Academic Regulations	63
Registration	63
Change of courses	63
Credit hours	64
Class Standing	64
Declaration of Major	64
Change of Major	65
Academic Load	65
Grades/Examinations	66
Incomplete Work	68
Class Attendance	68
Repeating Courses Under the Course	
Repeat Policy	69
Retaking Courses Outside the Course	
Repeat Policy	70
Honors	70
Probation/Warning	70
Dismissal	71
Planned Educational Leave of Absence	71
Withdrawal from the University	72
Transcripts	73
Non-degree Academic Regulations	73
Academic Integrity Policy	73
IV. Undergraduate Student Finances	76
Tuition and Fees	76
Deferred Payment	76
Tuition Fee for Readmission	77
Refund Policy	77
School of Continuing Education and Training Programs	78

	Scholarships and Financial Aid	78
	Undergraduate Scholarships	78
	Financial Aid and Work Study for Students	80
	Summer Financial Aid	80
	Student Work Program	81
	Other Financial Assistance and Awards for Non-Egyptian Students	81
V.	Undergraduate Student Life	83
	Activities	83
	Counseling and Mental Health	85
	Food Service	86
	International Student Affairs	86
	Medical Service	86
	Orientation	86
	Student Conduct and Academic Integrity	86
	Student Housing	87
VI.	The Core Curriculum	89
	Goals and Objectives	89
	General Description	89
	Restrictions	90
	Primary Level	90
	Secondary Level	93
	Capstone Level	97
	Seminar Courses	99
UNDERGRADUATE DEGREE PROGRAMS	Fields of Undergraduate Study:	
	Course Prefix Identification	102
	Accounting (BAC)	104
	Accounting (Minor)	106
	American Studies (Minor)	109
	Anthropology (BA)	111
	Anthropology (Minor)	113
	Arab and Islamic Civilization	120
	Arabic Studies (BA)	120
	Arab and Islamic Civilizations (Minor)	123
	Arabic Literature (Minor)	123
	Classical/Medieval Islamic History (Minor)	124
	Islamic Art and Architecture (Minor)	124
	Islamic Studies (Minor)	124
	Art (BA)	134
	Art (Minor)	137
	Graphic Arts and Design (Minor)	137
	Traditional Egyptian Arts (Minor)	138
	Biology (BS)	144
	Biology (Minor)	145
	Chemistry (BS)	152

Chemistry (Minor)	153
Archaeological Chemistry (Minor)	154
Science (SCI Courses)	160
Community Development and Organizing (Minor)	163
Computer Science and Engineering	164
Computer Science (BS)	165
Computer Science (Minor)	167
Computer Engineering (BS)	168
Construction and Architectural Engineering	178
Construction Engineering (BS)	178
Architectural Engineering (BS)	182
Architectural Design (Minor)	185
Development Studies (Minor)	198
Economics (BA)	200
Economics (Minor)	201
Egyptology (BA)	207
Egyptology (Minor)	208
Coptic Studies (Minor)	209
Electronics (Minor)	214
Electronics Engineering (BS)	215
Engineering (Courses)	224
English and Comparative Literature (BA)	227
English and Comparative Literature (Minor)	228
Environmental Science (Minor)	233
Film (Minor)	234
History (BA)	237
History (Minor)	238
Comparative Religion (Minor)	238
Journalism and Mass communication	247
Communication and Media Arts (BA)	247
Integrated Marketing Communication (BA)	248
Multimedia Journalism (BA)	250
Linguistics (Minor)	256
Management	258
Business Administration (BBA)	259
Business Administration in Management of Information and Communication Technology (BBA)	262
Business Administration (Minor)	265
Information Systems (Minor)	265
Mathematics and Actuarial Science	275
Mathematics (BS)	275
Actuarial Science (BS)	277
Mathematics (Minor)	279
Applied Probability and Statistics (Minor)	280
Mechanical Engineering (BS)	288
Mechatronics (Minor)	292
Middle East Studies (BA)	301

Music (BA)	305
Music (Minor)	308
Petroleum and Energy Engineering	319
Petroleum Engineering (BS)	319
Philosophy (BA)	328
Philosophy (Minor)	329
Physics (BS)	335
Physics (Minor)	337
Political Science (BA)	345
Honors Program in Political Science (BA)	350
Political Science (Minor)	351
International Relations (Minor)	351
Middle East Politics (Minor)	352
Political Economy (Minor)	352
Premedical Track	361
Psychology (BA)	362
Psychology (Minor)	364
Public Policy and Administration (Courses)	370
Rhetoric and Composition	371
Rhetoric and Writing (Minor)	371
Sociology (BA)	380
Sociology (Minor)	382
Theatre (BA)	389
Theatre (Minor)	391

GRADUATE STUDIES

I. Graduate Admissions	398
Graduate Admissions	398
Criteria for Admission of Graduate Students	398
Categories of Admission	400
Graduate Diploma Programs	401
Non-degree Admissions	401
Other Admissions	401
Transfer Credit	401
Summer Admissions	402
Readmission	402
Auditing	403
II. General Academic Requirements and Regulations	404
Graduate Academic Requirements	404
Adviser	404
Residence	404
Comprehensive Examination	405
Thesis Requirements	405
Submission of Thesis	405
Graduate Academic Regulations	406
Registration	406
Change of Courses	406
Credit Hours	407

Academic Load	407
Grades	407
Dual Graduate Degrees	408
Incomplete Work	408
Probation, Dismissal and Course Retake	409
Planned Educational Leave of Absence	409
Withdrawal from the University	410
Transcripts	411
Non-degree Academic Regulations	411

III. Graduate Student Finances 412

Tuition and Fees	412
Deferred Payment	412
Refund Policy	412
Financial Assistance	413
Financial Aid and Work Study for Graduate Students	413
Graduate Fellowships	414
Assistantships	423
Other Awards	424

MASTER/ GRADUATE DIPLOMA DEGREE PROGRAMS

Fields of Master/ Graduate Diploma Study:

Course Prefix Identification	428
Arabic Studies (MA)	430
Biotechnology (MS)	435
Chemistry (MS)	439
Computer Science and Engineering	444
Computer Science (MS)	444
Computer Science (Graduate Diploma)	445
Computing (M.Comp.)	446
Construction and Architectural Engineering	450
Construction Engineering (MS)	450
Construction Engineering (M.Eng.)	452
Economics (MA)	458
Economics in International Development (MA)	460
International Development (Economics Graduate Diploma)	462
Egyptology	467
Egyptology and Coptology (MA)	467
Electronics Engineering (MS)	476
Electronics Engineering (M.Eng.)	478
Electronics Engineering with Concentration in Management of Technology (M.Eng.)	470
Engineering (Courses)	486
English and Comparative Literature (MA)	488
Comparative Literary Studies (Graduate Diploma)	489
Environmental Engineering (MS)	492

Environmental Systems Design (M.Eng.)	493
European Studies (Graduate Diploma)	497
Gender and Women's Studies in the Middle East and North Africa (MA)	499
Gender and Women's Studies in the Middle East and North Africa (Graduate Diploma)	501
History (Courses)	504
International and Comparative Education (MA)	505
Journalism and Mass Communication (MA)	512
Television and Digital Journalism (MA)	514
Law	519
The Ibrahim Shihata Memorial LL.M Program in International and Comparative Law	519
International and Comparative Law (Graduate Diploma)	520
International Human Rights Law (MA)	521
International Human Rights Law (Graduate Diploma)	522
Management	530
Business Administration (MBA)	531
Mechanical Engineering (MS)	547
Mechanical Engineering (M.Eng.)	549
Middle East Studies (MA)	556
Middle East Studies (Graduate Diploma)	557
Migration and Refugee Studies (MA)	560
Forced Migration and Refugee Studies (Graduate Diploma)	561
Psychosocial Intervention for Forced Migrants and Refugees (Graduate Diploma)	562
Nanotechnology (MS)	567
Physics (MS)	573
Physics (Graduate Diploma)	574
Political Science (MA)	578
Political Science (Graduate Diploma)	582
Psychology	587
Community Psychology (MA)	587
Counseling Psychology (MA)	
Community Psychology (Graduate Diploma)	589
Family Counseling (Graduate Diploma)	590
Public Policy and Administration	596
Public Administration (MPA)	596
Dual Degree Option BSc/CENG-MPA Master's Program in Development Practice (MDP) Option	600
Public Policy (MPP)	601
Global Affairs (MGA)	605
Public Administration (Graduate Diploma)	607
Public Policy (Graduate Diploma)	608
Robotics, Control and Smart Systems (MS)	616

	Sociology-Anthropology (MA)	625
	Teaching Arabic as a Foreign Language (MA)	630
	Teaching Arabic as a Foreign Language (Graduate Diploma)	632
	Teaching English as a Foreign Language (MA)	636
	Teaching English as a Foreign Language (Graduate Diploma)	637
DOCTORATE DEGREE PROGRAMS	Fields of Doctorate Study:	
	Applied Sciences and Engineering	642
	Applied Sciences (PhD)	642
	Engineering (PhD)	648
LANG. INSTITUTES	Language Institutes and Summer & Winter Sessions	659
	Arabic Language Institute	660
	English Language Institute	680
INCOMING ST. ABROAD, OUTGOING EXCHANGE PROGRAMS	Incoming Students Abroad, Outgoing Exchange Programs	684
SUMMER & WINTER SESSIONS	Summer and Winter Sessions	685
RESEARCH	I. Research Support Offices	688
	Office of the Associate Provost for Research Administration	688
	Office of the Dean of Graduate Studies	689
	Office of Sponsored Programs	689
	II. Research Centers	690
	Access to Knowledge for Development Center (A2K4D)	690
	AUC Forum	690
	Desert Development Center	691
	El-Khazindar Business Research and Case Center	695
	Prince Alwaleed Bin Talal Bin Abdulaziz Alsaud Center for American Studies and Research	695
	Social Research Center	696
	The Cynthia Nelson Institute for Gender and Women's Studies	697
	The John D. Gerhart Center for Philanthropy and Civic Engagement	697
	The Yousef Jameel Science and Technology Research Center	698

CONTINUING EDUCATION & TRAINING PROGRAMS	I. School of Continuing Education	700
	SCE Mission Statement	700
	SCE Instructional Divisions	701
	II. Executive Education	702
	International Executive Education Institute (IEEI)	703
	Management Center (MC)	704
	Institute of Management Development (IMD)	704
	Institute of Banking and Finance (IBF)	713
	Institute of Quality Management (IQM)	718
	The Citadel Capital Financial Services Center	721
	The Goldman Sachs Women's Entrepreneurship and Leadership Center (WEL)	722
	El-Khazindar Business Research and Case Center	722
	III. Engineering and Science Services	723
	IV. Kamal Adham Center for Journalism Training and Research	725
	APPENDIX: PERSONNEL AND ENROLLMENT	
Board of Trustees	728	
University Cabinet	731	
Academic Administration	731	
Other Administrators	733	
Faculty Roster	736	
Student Enrollment Statistics	771	
Index	778	

UNIVERSITY CALENDAR: 2011-2012

Fall Semester 2011

Month	Date	Day	Event
May	12-25	Thu-Wed	Web Registration for all continuing students for Fall 2011
August	1	Mon	Start of Ramadan*
August	22-23	Mon-Tue	ALI Registration & Oral Placement Exam
August	22-28	Mon-Sun	New Student Orientation week
Aug-Sept	23-11	Tue-Sun	Late Registration & Course Changes (Web Registration Fall 11)
August	27-28	Sat-Sun	New Graduate Student Session
August	28	Sun	Orientation for ALI Students
Aug-Sept	30-2	Tue-Fri	Eid El Fetr (H) *
September	4	Sun	Classes Begin
September	4-11	Sun-Sun	Registration Period for Auditors
September	11	Sun	Deadline for tuition and fees payment without late fees, late registration & course changes for continuing students
September	12-15	Mon-Thu	Payment with late fees of US\$260 or L.E. 1600
September	15	Thu	Closing Date for payment
October	5	Wed	Fall 2011 Census Day
October	6	Thu	Armed Forces Day (H)
November	5-9	Sat-Wed	Eid El Adha (H) *
November	23	Wed	Deadline to drop courses
November	23	Wed	Deadline for Withdrawal: Undergraduate Students
November	24	Thu	Thanksgiving (H)
November	26	Sat	Islamic New Year (H)
Nov-Dec	29-14	Tue-Wed	Web registration for all continuing students for Spring 2012
Nov-Dec	29-14	Tue-Wed	Advising, web registration and payment of fees for Winter 2012
December	1	Thu	Deadline for Withdrawal: Graduate Students
December	12	Mon	Deadline: Financial Aid Applications for Spring 2012
December	15	Thu	Last Day of Classes for regular courses
December	15	Thu	ALI Last Day of Classes & Final Exams
December	16-21	Fri-Wed	Semester Examination
Dec-Jan	22-28	Thu-Sat	Mid-Year Recess
December	24-25	Sat-Sun	Western Christmas (H)
December	28	Wed	Deadline to submit final grades

Winter Session 2012

Month	Date	Day	Event
January	1	Sun	New Year's Day (H)
January	2	Mon	First Day of Classes for Winter Session 2012
January	2	Mon	Closing date: late registration and course changes
January	2	Mon	International Student Orientation
January	7	Sat	Eastern Christmas (H)
January	12	Thu	Deadline for withdrawal
January	20	Fri	Epiphany Feast –Baptism Day (H)
January	23	Mon	End of Winter Session 2012 & Final Exam
January	25	Wed	Police Day (H)
January	26	Thu	Deadline to submit final grades

Spring Semester 2012

Month	Date	Day	Event
January	22-24	Sun-Tue	ALI Registration & Oral Placement Exam
January	22-26	Sun-Thu	New Student Orientation Week
Jan-Feb	22-5	Sun-Sun	Late Registration & Course Changes (web registration Spring 2012)
January	24-26	Tue-Thu	New Graduate Student Session
January	26	Thu	Orientation for ALI Students
January	29	Sun	Deadline for tuition and fees payment without late fees for continuing students
January	29	Sun	Classes Begin
Jan-Feb	29-5	Sun-Sun	Registration Period for Auditors
February	4	Sat	El Mawled El Nabawi (H) *
February	5	Sun	Closing Date: late registration, payment & course changes
February	15	Wed	Commencement – Graduates
February	17	Fri	Commencement – Undergraduates
March	1	Thu	Spring 2012 Census Day
March	19	Mon	Taba Liberation Day (H)
April	3	Tue	International Day
April	8-16	Sun-Mon	Spring Break (H)
April	8	Sun	Western Easter (H)
April	8	Sun	Palm Sunday (H)
April	12	Thu	Holy Thursday (H)

Month	Date	Day	Event
April	15	Sun	Eastern Easter (H)
April	16	Mon	Sham El Nessim (H)
April	25	Wed	Sinai Liberation Day (H)
April	26	Thu	Deadline for dropping courses
April	26	Thu	Deadline for Withdrawal – Undergraduate Students
May	1	Tue	Labor Day (H)
May	2-3 & 16-17	Wed-Thu Wed-Thu	Web registration for Summer 2012 for all continuing students
May	6-17	Sun-Thu	Web registration for Fall 2012 for all continuing students
May	10	Thu	Deadline: financial aid application for Fall 2012
May	10	Thu	Deadline for withdrawal: Graduate Students
May	17	Thu	Last Day of Classes for regular classes
May	17	Thu	Last Day for ALI Classes & Final Exams
May	19-24	Sat-Thu	Semester Examination for regular classes
May	29	Tue	Deadline to submit Final Grades

Summer Session 2012

Month	Date	Day	Event
June	1-2	Wed-Thu	ALI Registration & Oral Placement Exam
June	3-4	Sun-Mon	ALI Registration & Oral Placement Exam
June	3-11	Sun-Mon	Late Registration & Course Changes
June	5	Tue	International Student Orientation
June	7	Thu	ALI student Orientation
June	10	Sun	Classes Begin for ALI
June	10	Sun	Deadline for tuition & fees payment without late fees for continuing students
June	10	Sun	Classes Begin for the Six-Week Session
June	10-28	Sun-Thu	Three-Week Session A
June	11	Mon	Closing date: late registration, payment, and Course changes

University Calendar 15

Month	Date	Day	Event
June	13	Wed	Commencement – Graduates
June	15	Fri	Commencement – Undergraduates
June	27	Wed	Summer 2012 Census Day
July	1-19	Sun-Thu	Three-Week Session B
July	5	Thu	Deadline for dropping and withdrawal
July	19	Thu	Last Day of Classes for regular classes
July	20	Fri	Start of Ramadan*
July	21-22	Sat-Sun	Semester Examination
July	23	Mon	Revolution Day (H)
July	26	Thu	Deadline to submit final grades
July	29	Sun	Last Day for ALI Classes

* *Exact date will be confirmed by official notice.*

N.B. Holidays that fall on either Fridays or Saturdays will have no substitutes

UNDERGRADUATE DEGREE PROGRAMS

Bachelor of Accounting

Bachelor of Arts

- Anthropology with an interdisciplinary specialization in Community Development
- Arabic Studies
- Arabic Studies with specializations in Arabic Literature, Middle Eastern History and Islamic Art & Architecture
- Art with concentrations in Graphic Arts Design, and Traditional Egyptian Arts
- Communication and Media Arts
- Economics
- Egyptology
- English & Comparative Literature
- History
- Honors Program in Political Science
- Integrated Marketing Communication
- Middle East Studies
- Multimedia Journalism
- Music Technology
- Philosophy
- Political Science
- Political Science, with specializations in International Relations, Middle East Politics, Political Economy, and Public & International Law
- Psychology with an interdisciplinary specialization in Community Development
- Sociology with an interdisciplinary specialization in Community Development
- Theatre

Bachelor of Business Administration

with concentrations in Marketing, Finance, Management of Information Systems and General Business

Bachelor of Business Administration in Management of Information and Communication Technology

Bachelor of Musical Arts (BMA)

with concentration in Performance

Bachelor of Science

- Actuarial Science
- Architectural Engineering
- Biology
- Chemistry, with specializations in Clinical Chemistry and Industrial Chemistry
- Computer Engineering
- Computer Science
- Construction Engineering with concentrations in Construction Materials & Structures, Construction Management & Technology, and Environmental Engineering
- Electronics Engineering
- Mathematics with an option in Statistics & Data Analysis
- Mechanical Engineering, with concentrations in Design, Industrial, Materials & Manufacturing, Mechatronics, and Power
- Petroleum Engineering with concentration in Energy Resources
- Physics with an option in Instrumentation

Undergraduate Minors

- Accounting
- American Studies
- Anthropology
- Applied Probability and Statistics
- Arab and Islamic Civilizations
- Arabic Literature
- Archaeological Chemistry
- Architectural Design
- Art
- Biology
- Business Administration
- Chemistry
- Classical/Medieval Islamic History
- Community Development and Organizing
- Comparative Religion
- Computer Science
- Coptic Studies
- Development Studies
- Digital Arts & Design
- Economics
- Egyptology

- Electronics
- English and Comparative Literature
- Environmental Science
- Film
- History
- Information Systems
- International Relations
- Islamic Art and Architecture
- Islamic Studies
- Linguistics
- Mathematics
- Mechatronics
- Middle East Politics
- Music
- Music Technology
- Philosophy
- Physics
- Political Economy
- Political Science
- Psychology
- Rhetoric and Writing
- Sociology
- Theatre
- Traditional Egyptian Arts

DUAL DEGREE PROGRAMS

- Master's Program in Development Practice (MDP)
Construction Engineering/Bachelor of Science - Master of Public Administration

GRADUATE DEGREE PROGRAMS

Master and Graduate Diploma

Master of Arts

- Arabic Studies, with specializations in Islamic Art & Architecture, Arabic Language and Literature, Middle Eastern History and Islamic Studies
- Community Psychology
- Counseling Psychology
- Economics with concentrations in Growth & Sustainable Development, Competitive Strategy & Valuation, and International Economics
- Economics in International Development
- Egyptology and Coptology with tracks in Egyptology: Art, Archeology & History, Egyptology: Philology, and Coptology
- English & Comparative Literature
- Gender and Women's Studies in the Middle East/ North Africa with specializations in Gender and Justice, Gendered Political Economies, and Gender & Women's Studies in the Middle East/ North Africa
- International & Comparative Education

with concentrations in Pre-K—12 Education, Educational Leadership, and International Education Policy & Planning

- International Human Rights Law
- Journalism and Mass Communication
- Middle East Studies
- Migration and Refugee Studies
- Political Science, with specializations in Comparative Politics, International Relations, and Professional Development
- Sociology-Anthropology
- Teaching Arabic as a Foreign Language
- Teaching English as a Foreign Language
- Television and Digital Journalism

Master of Business Administration (MBA)

with concentrations in Construction Industry, Finance, International Business, Leadership & Human Resources Management, Management of Information Systems, Marketing, and Operations Management

Master of Computing (M. Comp.)

Master of Engineering

- Construction Engineering
- Electronics Engineering
- Electronics Engineering with concentration in Management of Technology
- Environmental Systems Design
- Mechanical Engineering
- Robotics, Control & Smart Systems

Master of Global Affairs (MGA)

with concentrations in International Cooperation, and International Security

Master of Laws (LL.M.) in International and Comparative Law

Master of Public Administration
with concentrations in Management of Public Sector Reform, and Management of Nonprofit & Development Organizations

Master of Public Policy

with concentrations in Social & Environmental Policy, and Government Promotion & Regulation of the Private Sector

Master of Science

- Biotechnology
- Chemistry with concentration in Food Chemistry
- Computer Science

- Construction Engineering
- Electronics Engineering
- Environmental Engineering
- Finance with concentrations in Corporate Finance, and Investments
- Mechanical Engineering with specializations in Design, Industrial Engineering, Materials & Manufacturing Engineering, Mechatronics, and Power
- Nanotechnology
- Physics

Graduate Diplomas

- Community Psychology
- Comparative Literary Studies
- Computer Science
- Economics in International Development
- European Studies
- Family Counseling
- Forced Migration and Refugee Studies
- Gender and Women's Studies in the Middle East and North Africa
- International and Comparative Law
- International Human Rights Law
- Middle East Studies
- Physics
- Political Science
- Psychosocial Interventions for Forced Migrants and Refugees
- Public Administration
- Public Policy
- TAFL
- TEFL

DOCTORATE DEGREE PROGRAMS

Doctorate of Philosophy (Ph.D.)

- Applied Sciences with specializations in Biotechnology, Computer Science and Nanotechnology
- Engineering with specializations in Construction Engineering, Electronics Engineering, Environmental Engineering and Mechanical Engineering

The University

Statement of Mission

The American University in Cairo (AUC) is a premier English-language institution of higher learning. The university is committed to teaching and research of the highest caliber, and offers exceptional liberal arts and professional education in a cross-cultural environment. AUC builds a culture of leadership, lifelong learning, continuing education and service among its graduates, and is dedicated to making significant contributions to Egypt and the international community in diverse fields. Chartered and accredited in the United States and Egypt, it is an independent, not-for-profit, equal-opportunity institution. AUC upholds the principles of academic freedom and is dedicated to excellence.

Non-Discrimination Policy

The American University in Cairo admits students regardless of race, color, religion, gender, disability or national origin with all rights and privileges to programs and activities generally accorded or made available to students at the university. The university does not discriminate on the basis of race, color, religion, gender, disability, or national origin in the administration of its academic policies, admission policies, scholarship and loan programs, and athletic and other school-administered programs. Accordingly the university does not tolerate any forms of discrimination and / or harassment including sexual harassment.

History

The American University in Cairo was founded in 1919 by Americans devoted to education and service in the Middle East. For its first 27 years, the University was shaped by its founding president, Charles A. Watson. He wanted to create an English-language university based on high standards of conduct and scholarship and to contribute to the intellectual growth, discipline and character of the future leaders of Egypt and the region. He also believed that such a university would greatly improve America's understanding of the area.

Initially, AUC was intended to be both a preparatory school and a university. The preparatory

school opened on October 5, 1920 with 142 students in two classes that were equivalent to the last two years of American high school. The first diplomas issued were junior college-level certificates given to 20 students in 1923. At first an institution only for males, the University enrolled its first female student in 1928, the same year in which the first University class graduated with one Bachelor of Science and two Bachelor of Arts degrees awarded. Master's degrees were first offered in 1950.

Originally, AUC offered instruction in the arts and sciences and in education. In 1921, the School of Oriental Studies was added to the University, followed in 1924 by the Division of Extension. This division was later renamed the Division of Public Service, and finally evolved into the Center for Adult and Continuing Education, which is now the School of Continuing Education. AUC's high school division, known as the Lincoln School, was discontinued in 1951.

In 1956, the School of Oriental Studies was incorporated into the Faculty of Arts and Sciences as the Center for Arabic Studies. The English Language Institute was added the same year. After the Faculty of Education was discontinued in 1961 and degree offerings were dropped from the Division of Public Service, university-degree work was consolidated into a single academic structure, the Faculty of Arts and Sciences. Programs in sociology, anthropology, political science and economics were added to the curriculum, and the natural science offerings were significantly expanded.

Two applied research units, the Social Research Center and the Desert Development Center, were established in 1953 and 1979, respectively. Another landmark in the history of the University was the development of professional programs. The departments of engineering, computer science, journalism and mass communication, and management now offer several degree programs at the undergraduate and graduate levels.

In 1960, AUC enrolled approximately 400 academic students. By 1969, the University had more than tripled its degree enrollments to more than 1,300 students, including 450 at the graduate level. Since then, academic program enrollments have grown to 6,064 students (Fall 2008), including 1,047 students at the master's level. Continuing education expanded simultaneously and now serves more than 42,179 individuals each year in non-credit courses and contracted training programs.

In 1993, the academic programs offered through 13 departments were organized into three schools: humanities and social sciences; sciences and engineering; and business, economics and communication. Educational training and major research projects continue to be carried out through the School of Continuing Education, the Management Center, Engineering Services, the Desert Development Center and the Social Research Center. Through subsequent reorganizations and additions, as of the Fall 2008 semester, the University has approximately 25 departments and institutes offering undergraduate, masters and graduate diploma programs.

Throughout its history, AUC has balanced a strong commitment to liberal education with a concern for the region's needs for practical applications and professional specializations. Today, AUC emphasizes liberal education, and all undergraduate students study a common set of courses in the humanities and the natural and social sciences as part of the University's Core Curriculum. In addition, the University maintains its strong commitment to fostering understanding across world regions, cultures and religions.

Accreditation

In the United States of America, AUC is licensed to grant degrees and is incorporated in the State of Delaware. AUC is accredited in the US by the Commission on Higher Education of the Middle States Association of Colleges and Schools, 3624 Market Street, Philadelphia, PA 19104, 267.284.5000. AUC's most recent reaccreditation was granted by the Commission of MSCHE on June 26, 2008.

In Egypt the university operates as a private cultural institute within the framework of the 1962 Egyptian-American Cultural Cooperation Agreement, in accordance with an implementing protocol with the government of Egypt. This protocol, promulgated as a presidential decree and ratified by the Egyptian People's Assembly in 1975, recognizes the university's degrees as equivalent to those awarded by Egyptian national universities.

Program Accreditation

AUC's undergraduate programs like computer science is accredited by the Computing Accreditation Commission of ABET, and the SSE construction engineering, electronics engineering and mechanical engineering programs are accredited by the Engineering Accreditation Commission of ABET (111 Market Place, Suite 1050, Baltimore, MD 21202-4012; Tel. 410-347-7700; www.abet.org). The English Language Institute is accredited by the Commission on English Language Program Accreditation (CEA 801 North Fairfax Street Suite 402A Alexandria, VA 22314 USA).

AUC's School of Business holds accreditation for its business programs from the Association to Advance Collegiate Schools of Business (AACSB International, 777 South Harbour Island Blvd – Suite 750 – Tampa, - Florida 33602-5730). AUC's School of Continuing Education is accredited by the International Association for Continuing Education & Training (IACET 1760 Old Meadow Road, Suite 500, McLean, VA 22102 Phone (703) 506-3275 Fax (703) 506-3266).

Governance and the Board of Trustees

The university is governed by a self-perpetuating Board of Trustees, currently consisting of thirty-three members drawn from various fields of endeavor; the President of AUC is also an ex-officio member of the Board. In addition, there are twenty two individuals designated as Advisory Trustees, many of whom have rendered distinguished service on the Board in past years. The Board has its own by-laws and elects a chair for three years. A complete list of members, officers of the Board, and advisory trustees is provided in an appendix to this volume.

The Board meets generally three times a year; the May and November meetings are held in New York, and the February meeting is held on the Cairo campus. The Cairo meeting enables Board members to review developments first hand, and to meet with faculty, students and staff.

The Board of Trustees reviews and approves all major policies, the university budget and major facilities and program development plans. It sets the annual tuition rates and provides leadership in raising funds for the university. The university is administered by a president selected by the Board of Trustees. Mr. David D. Arnold continued as president until December 31, 2010. Lisa Anderson became president on January 1, 2011. The current president of AUC is Lisa.

The presidents of the university:

<i>Name</i>	<i>Years of Service</i>
1. <i>Dr. Charles R. Watson (Founder)</i>	<i>1919-1945</i>
2. <i>Dr. John S. Badeau</i>	<i>1945-1954</i>
<i>Dr. Wendell Cleland (Acting President)</i>	<i>1954-1955</i>
3. <i>Dr. Raymond F. McLain</i>	<i>1955-1963</i>
4. <i>Dr. Thomas A. Bartlett</i>	<i>1963-1969</i>
5. <i>Mr. Christopher Thoron</i>	<i>1969-1973</i>
<i>Dr. Cecil K. Byrd (Acting President)</i>	<i>1973-1974</i>
6. <i>Dr. Cecil K. Byrd</i>	<i>1974-1977</i>
<i>Dr. Thomas Lamont (Acting President)</i>	<i>1977-1978</i>
7. <i>Dr. Richard F. Pedersen</i>	<i>1978-1990</i>
8. <i>Dr. Donald McDonald</i>	<i>1990-1997</i>
<i>Dr. Frank E. Vandiver (Acting President)</i>	<i>1997-1998</i>
9. <i>Dr. John D. Gerhart</i>	<i>1998-2002</i>
<i>Dr. Thomas A. Bartlett (Interim President)</i>	<i>2002-2003</i>
10. <i>Mr. David D. Arnold</i>	<i>2003-2010</i>
11. <i>Dr. Lisa Anderson</i>	<i>2011-present</i>

AUC Faculty

The faculty of AUC is a highly qualified group of academics and professionals who are committed to finding innovative ways to meet the educational needs of AUC students. The university's full-time faculty is complemented by an extensive adjunct teaching staff, frequent visiting lecturers, and the Distinguished Visiting Professor program.

AUC's full-time teaching faculty is primarily American and Egyptian, in addition to citizens from about a dozen other countries. By drawing from the national universities, business and professional communities and the Egyptian government, AUC has recruited a well-qualified adjunct faculty. These academics, business leaders, journalists, government officials, and professionals bring their practical experience to the classroom. The exchange of ideas also takes place on a more informal basis as academic departments and student organizations invite experts from a wide range of professional fields to give lectures and demonstrations during the weekly assembly hours and in the evenings.

To augment its educational and cultural offerings, the university established many years ago a Distinguished Visiting Professor program which brings to the AUC campus a number of eminent scholars, writers, and artists for short-term lectureships or workshops. Some of these

professorships are supported by named endowments or annual grants in recognition of their importance to the university and the community.

Among the current named Distinguished Visiting Professorships are the Christopher Thoron Distinguished Visiting Professorship in Performing and Visual Arts, the Bayard Dodge DVP in Arabic Studies, Endowment DVP's include the General Dynamics Corporation Distinguished Visiting Professorship in Engineering, the Charles J. Hedlund Distinguished Visiting Professorship in Business and Computer Science, and the McCune Foundation Distinguished Visiting Professorship in English and Comparative Literature.

Campus

Cairo, the largest urban center in the Arab world and Africa, lies in the Nile Valley where it begins to broaden into the fertile delta. One of the world's oldest cities, Cairo is inheritor and protector of many traditions — Pharaonic, ancient Greek and Roman, Coptic, Islamic and Arabic. It is, at the same time, a contemporary center for international development and Middle East policy.

The American University in Cairo is located in the suburb of New Cairo, about 45 minutes away from the University's historic downtown campus, which is in Tahrir Square, near the National Cultural Center and the Egyptian Museum. AUC New Cairo, a 260-acre campus that opened in 2008, provides advanced facilities for research and learning, as well as all the modern resources to support a vibrant campus life.

The Abdul Latif Jameel Hall is home to the School of Business and the Kamal Adham Center for Journalism Training and Research. Facilities include executive training rooms, computer labs, fully equipped video editing and production labs, and specialized labs for graphics, multimedia, radio broadcasting and newspaper production. Home of the School of Humanities and Social Sciences, Prince Alwaleed Bin Talal Bin Abdulaziz Alsaud Hall features labs for psychology and Egyptology as well as computer-assisted language labs. The AUC Center for the Arts houses an art gallery; a 300-seat mainstage theatre; labs for electronic music and photography; studios for drawing, painting, sculpture and theatre design; and studios for music and film editing and production. The School of Sciences and Engineering features spacious, sophisticated labs in every major scientific discipline and a range of specialized fields, from microbiology to systematics, from microprocessors to polymers, from energy systems to soils. Other highlights include an animal facility, greenhouse, herbarium and structural testing facility.

Creating a central location for services, the Campus Center provides students with a communal area to eat, congregate, organize trips and attend campus-wide events. Inside the building are a bookstore, gift shop, bank, travel office and the main dining room. Mexican architect Ricardo Legorreta, who designed the Campus Center, likened it to a small village. Near the Campus Center is the student-housing complex. Nestled among palm groves, gardens and small courtyards, the residences create a private space that also encourages community building among students. Across the student residences sits the three-story indoor athletic complex, including a 2,000-seat multipurpose court, a jogging track, six squash courts, martial arts and exercise studios, a free weight studio and training courts. Outdoor facilities include a 2,000-seat track and field stadium, an Olympic-size swimming pool, a football field, a jogging and cycling

track, and courts for tennis, basketball, handball and volleyball.

Housing one of the largest English-language collections in the region, AUC's five-story library includes space for 600,000 volumes in the main library and 100,000 volumes in the Rare Books and Special Collections Library; locked carrels; computer workstations; video and audio production and editing labs; and comprehensive resources for digitizing, microfilming and preserving documents. In addition, on the plaza level of the library, the Learning Commons emphasizes group and collaborative learning. This unique area integrates independent study, interactive learning, multimedia and technology rooms, and copy and writing centers. Students can listen to music, watch a DVD, see a live performance or listen to a speaker while working on their assignments. They can also get walk-in assistance from the Writing Center's satellite office or help with AUC's online teaching and learning system.

Carrying forward a tradition of cultural outreach and education, the New Cairo and downtown campuses extend AUC even further into Egyptian society through a full array of public lectures, artistic performances and educational offerings. The historic palace building on the downtown campus includes a new branch of the AUC Bookstore, a café and the Margo Veillon Gallery for Contemporary Egyptian Art. With its campuses in New Cairo and Tahrir Square, AUC extends its reach, serves a broad community and renews its commitment to the past and future of the city and the region.

Profile: Fall 2010

I. Academic Programs

<i>Faculty</i>	<i>455 full-time, 383 part-time</i>	
	<i>The full-time faculty:</i>	
	<i>58% Egyptian</i>	
	<i>29% United States of America</i>	
	<i>13% Other Countries</i>	
<i>Students</i>		<i>6,553</i>
	<i>Undergraduate Degree</i>	<i>4,760</i>
	<i>Graduate Degree</i>	<i>1,224</i>
	<i>Graduate Diploma</i>	<i>15</i>
	<i>Non-degree</i>	<i>433</i>
	<i>Special Programs</i>	<i>121</i>
<i>Citizenship</i>		
	<i>Egyptian</i>	<i>5,534</i>
	<i>Other Countries</i>	<i>1,019</i>

II. School of Continuing Education

Total number of individuals served during fiscal year 2009-2010 32,016

III. 2010-2011 Budgeted Operating Expenses: \$175.190 million

<i>Revenues</i>	<i>Academic Tuition and Fees</i>	<i>56%</i>
	<i>Endowments and Contributions</i>	<i>15.3%</i>

	<i>Auxiliary Enterprises</i>	5.5%
	<i>Educational Enterprises</i>	10.8%
	<i>Research</i>	11%
	<i>Miscellaneous</i>	1.5%
<i>Expenditures</i>	<i>Academic and Academic Support</i>	44.8%
	<i>Administration and General</i>	18%
	<i>Auxiliary Enterprises</i>	6.3%
	<i>Operations and Plant Management</i>	15.7%
	<i>Education Enterprises</i>	7.5%
	<i>Research</i>	5%
	<i>Contingency and Miscellaneous</i>	2.8%

Financial Support

The University was established and has been sustained throughout most of its history through the generosity of private individuals, the majority of them Americans. The founding trustees, mostly from Pittsburgh, Pennsylvania, donated funds to purchase the University's main campus and to cover most of the salaries and expenses of the teaching staff. Despite the financial crises generated by the Great Depression, World War II, and the 1967 Six-Day War, neither the University's academic programs nor its financial support has ever been interrupted.

For the first forty years, the Weyerhaeuser family and the Pittsburgh families of McCune, Gillespie, Lockhart, and Craig, with additional help from other individuals, covered much of the University's operating deficits. Hill House was built and later renovated with funds donated by the Weyerhaeuser family in honor of William Bancroft Hill, a family member who chaired the University's Board of Trustees for twenty years. Ewart Hall and Oriental Hall were also funded by private gifts during this period. The role of a number of American foundations, notably the Ford Foundation, has been significant to the overall development of the University. After the turbulent mid-1950's such help strengthened several units including the Social Research Center, the English Language Institute, the Graduate Management Program, and the Desert Development Center. In subsequent years, other foundations and international agencies supported specific projects and research. They include the Near East Foundation; the International Development Research Center (Canada); the United Nations Educational, Scientific and Cultural Organization; the World Health Organization; the U.S. Agency for International Development; the United Nations Development Program; the African Development Foundation; the U.S. Department of Education; the Fulbright Commission; the Tokyo Foundation (formerly the Sasakawa Foundation); the United Nations Children's Fund; the Smithsonian; the AT&T Foundation; Schlumberger; the Amoco Foundation; the Mobil Foundation; Pfizer; the Mellon Foundation, the Starr Foundation, the Getty Grant Program and others.

During the 1950's and 1960's the nature of Egyptian-American relations impeded AUC fundraising efforts. The trustees' long-range plans, however, indicated the need for the University to expand if it were to remain a viable institution. Thus in 1959, AUC for the first time obtained U.S. government funding through the Agency for International Development

(AID). AID funds derived primarily from U.S.-owned surplus Egyptian pounds resulting from American wheat sales to Egypt in the 1950's. This support allowed AUC to construct and equip its science building as well as to nearly double the size of its campus with the purchase of the nearby Greek community school. In the mid-eighties, AID had provided funds for the construction of a modern library on the Greek campus and for a dormitory in Zamalek that has been in use since 1991. AID also funded a campus-wide fiber optic network in fiscal year 1993.

The restoration of Egyptian-American relations in 1974, along with the establishment of Egypt's Open Door economic policy, allowed AUC to set the process in motion for increasing its financial independence and security. Three major factors contributed to the success of this mission.

First, the University instituted gradual tuition increases. Now the largest source of income for the University, tuition accounts for more than fifty-three percent of AUC's operating budget. AUC continues to provide tuition support for its Egyptian students, who comprise eighty-five percent of the student body, and offers both academic and need-based scholarships.

Second, in 1982, AUC launched a major fundraising campaign. The goal of the five-year campaign was to raise \$22 million from private sources in the United States, Egypt, Saudi Arabia, and the Gulf states. Additionally, the University sought to develop a tradition of giving among alumni. In 1987, the University announced the successful completion of the campaign, having raised over \$24 million. Not only did the University achieve its financial goal, but it also succeeded in increasing alumni participation. Among alumni donations was a major gift from a Saudi Arabian alumnus and his family to build the Jameel Center. Corporate sponsorship also increased, with significant support coming from American, Egyptian, Saudi Arabian, Italian and Japanese companies and foundations.

Third, the United States Congress passed legislation in 1985 that provided for the establishment of a trust fund at the American Embassy in Cairo with the income designated for AUC. Because the Egyptian pound was devalued in the years following the trust's creation, further legislation was passed in 1989 to restore it to the original value. The income from this trust replaces Egyptian-pound support formerly provided through congressional appropriations. In 1997, the University received a second trust fund from USAID.

In 1993, the Board of Trustees approved a long-range plan that set University fundraising priorities for the following five years. The highest priorities were to increase annual giving and student scholarships and fellowships, enhance the quality of academic programs through the acquisition of chairs and professorships, build the endowment for library acquisitions, and obtain funding for the University's newest facility: the Falaki Academic Center. The new center provides much needed classroom and laboratory space as well as theaters and galleries for art students' performances and exhibitions.

In 1998, the Board of Trustees approved the purchase of a 260-acre area outside of downtown Cairo that will be the site of a new, integrated campus for AUC. Plans are underway to design and build this new facility.

Scholarships and Fellowships

In addition to scholarships and financial aid provided by the University, many individuals and corporations demonstrate their commitment to higher education in Egypt by establishing scholarships and fellowships at AUC. Eligible students may apply at the Office of Student Financial Affairs at 20.2.2615.1487 or email the office at ekm@aucegypt.edu

Annual scholarships and fellowships are made possible through donors who contribute fund each year to fully or partially cover the tuition of one or more undergraduate and/or graduate student(s):

- Ahmed and Ann M. El Mokadem Fellowship for Graduate Students: Established in 2010 to cover the expenses of two Egyptian students enrolled in the MA program in economics, business, political science and/or any other area of study as deemed advisable by the AUC president.
- Ahmed and Ann M. El Mokadem Study Abroad Scholarship for Undergraduate Students: Established in 2010 to cover the expenses of two AUC undergraduates to study abroad for one semester.
- Ahmed Bahaa Eldin Scholarship: Established in 2009 to cover all academic tuition, fees, books and accommodation for one student from Asyut for up to five years at AUC.
- Al Mansour Public School Scholarship: Established in 2008 to support two students from Egyptian public schools.
- AUC Faculty and Staff Public School Scholarship: Established in 2005 to support one student from an Egyptian public school.
- Bailey African Graduate Students Fellowship: Awarded to African graduate students, with preference given to Sudanese nationals.
- BAT Public School Scholarship: Established in 2008 to cover academic tuition, fees and accommodation for a student from an Egyptian public school, with preference for a management major. The recipient should maintain a GPA of 3.0 or higher.
- Caterpillar Foundation Scholarships: Established in 2008 and offered through the John D. Gerhart Center for Philanthropy and Civic Engagement as a partial scholarship to support students in their sophomore year or higher. Recipients should maintain a GPA of 2.8 or higher.
- Citigroup Foundation Public School Scholarship: Established in 2007 to support two students from Egyptian public schools.
- Credit Agricole Egypt Public School Scholarship: Established in 2005 to support one student from an Egyptian public school.
- ExxonMobil Egypt Scholarships in Graduate School of Education: Established in 2010 to support no less than twenty teachers and administrators from the Egyptian Government Experimental Schools.
- Faten Sabry Public School Scholarship: Established in 2007 to support one student from an Egyptian public school. The recipient should demonstrate outstanding academic achievement and should maintain a GPA of 3.5 or higher.
- Fluor Corporation Scholarship: Established in 2007 to support two students from the Arab region majoring in either construction or mechanical engineering.. The recipients should maintain an overall GPA of 3.0 or higher.
- Fund for Travel and Study Abroad: Established in 2008 to cover the expenses of ten Egyptian undergraduates to study abroad for one semester.
- Garber Family Public School Scholarship: Established in 2008 to support one student from an

Egyptian public school.

- General Motors Egypt Public School Scholarships: Established in 2005 to support one male and one female student from Egyptian public schools.
- Globeleq Public School Scholarship: Established in 2005 to support one student from an Egyptian public school.
- Hadya Jameel MBA Fellows Program: Established in 2008 to support Egyptian or Palestinian students who hold a minimum GPA of 3.00, a very good (Gayed Geddan) or an equivalent ranking from other universities.
- Hessa Fahad Al-Sidairawi Public School Scholarship: Established in 2009 to support one student from an Egyptian public school during his or her senior year at AUC.
- Investcorp Scholarship: Established in 2001 to support a Bahraini student based on his or her academic merit and financial need.
- Mary Cross Public School Scholarship: Established in 2007 to support two students from an Egyptian public school.
- Mo Ibrahim Foundation Graduate Fellowship for Nubian Students: Established in 2007 to support Egyptian and/or Sudanese graduate students of Nubian origin. Applicants must demonstrate a working knowledge of the Nubian language.
- Mo Ibrahim Foundation Undergraduate Scholarship Fund for Nubian Students: Established in 2008 to support Egyptian and/or Sudanese undergraduates of Nubian origin. The recipients should maintain an overall GPA of 3.0 or higher.
- Mobinil Public School Scholarship Fund: Established in 2010 to support four students from Egyptian public schools.
- Mohamed S. Younes Public School Scholarship: Established in 2006 to support one student from an Egyptian public school.
- Nadhmi Auchi Young Arab Leaders Fellowships: Established in 2008 to support graduate students from the Arab region. The recipients should maintain a minimum GPA of 3.00 or very good (Gayed Geddan).
- Palestinian Scholarship Fund: Established in 2001 to support Palestinian students from the Occupied Territories based on their financial need.
- Piraeus Bank Public School Scholarship: Established in 2006 to support students from Egyptian public schools.
- Piraeus Bank Scholarship: Established in 2006 to support a student of Greek origin.
- Public School Scholarships Fund: Established in 2000 to support students from Egyptian public schools based on their academic merit and financial need.
- Queen Rania Al-Abdullah Scholarship: Established in 2007 as a partial scholarship to support female students from Jordan.
- S.D. Bechtel, Jr. Foundation Public School Scholarship: Established in 2007 to support two female students majoring in construction engineering.
- Sheikh Jamal Jawa Scholarship: Established in 2007.
- Suad Hussein Juffali Scholarship: Established in 2005 to support one deserving Palestinian student from Palestine or the Occupied Territories for up to four years at AUC.
- Theodore L. Cross Public School Scholarship: Established in 2006 to support two students from Egyptian public schools.
- Thomason Family Public School Scholarship: Established in 2008 to support one student with an outstanding achievement in Thanawyya Amma. The recipient should maintain a GPA of 3.5 or higher.
- Tokyo Foundation Fellow Mobility: Established in 2007.
- Tomooh Public School Scholarship: Established in 2007 to support five students from among

the top fifty Thanawyya Amma students graduating from Egyptian public schools.

- Vodafone Public School Scholarship: Established in 2006 to support one student majoring in business administration. The recipient should maintain a GPA of 3.5 or higher.
- Vodafone Public School Scholarship: Established in 2006 to support one student majoring in engineering. The recipient should maintain a GPA of 3.5 or higher.
- Western Union Foundation Public School Scholarship: Established in 2007 to support one student majoring in business administration. The recipient should maintain a GPA of 3.0 or higher.
- William Harrison Public School Scholarship: Established in 2007 to support one student majoring in business administration. The recipient should maintain a GPA of 3.0 or higher.
- Yousef Jameel PhD Applied Sciences and Engineering Fund: Established in 2010 by AUC alumnus, Mr. Yousef Jameel '68 '08, to provide the initial funding necessary to help the university cover the SSE PhD program costs including fellowships, additional faculty positions, staff, equipment, materials and library resources in fields that may not be fully supported by expected research grants. In addition, the fund supports the recruitment of five additional graduate researchers per year until a sustained level of 25 is reached.

Endowed scholarships and fellowships provide in perpetuity partial financial support to deserving students. They are made possible by donations from many individuals, corporations and foundations committed to higher education in Egypt. Endowed scholarships and fellowships contributions are placed in income-producing funds, with the income used every year to help support one or more student(s).

- ABB SUSA Scholarship: Established in 1994 to support one student majoring in construction engineering and on the Dean's Honor List.
- Alton and Barbara Harvill Scholarship: Established in 1990 to support an American student.
- American Chamber of Commerce Scholarship: Established in 1992 to support one Egyptian student majoring in either business administration, management or economics based on his or her academic merit and financial need.
- Andrew W. Mellon Foundation Fellowships: Established in 2000 to support American graduate students enrolled in the Center for Arabic Study Abroad (CASA) program.
- Apache Corporation Endowed Student Scholarship: Established in 2010 to support Egyptian students majoring in petroleum engineering.
- Armenian Evangelical Congregational Church of Cairo Scholarship Fund: Established in 1999 through funds generated from the sale of the Armenian Church in Cairo to support graduate or undergraduate students of Armenian origin based on their financial need.
- Ashraf Marwan Scholarship: Established in 1996 to support an Egyptian student based on his or her academic merit and financial need.
- AT&T Scholarship: Established in 1987 to support Egyptian students majoring in engineering or computer science.
- AUC Alumni Scholarships: Established in 1983 by the International Alumni Council, with collective gifts from AUC alumni in the Middle East, the United States and Canada, to support Egyptian and Arab children of AUC alumni.
- Ayman Korra Public School Scholarship: Established in 2006 to support one student from an Egyptian public school. The recipient must be enrolled in engineering and should maintain a high GPA.
- BG Egypt Public School Scholarship: Established in 2009 to cover the tuition of one student from an Egyptian public school for his or her five-year study in the Department of Petroleum and Energy Engineering.

- Bristol-Myers Squibb Egypt Scholarship: Established in 1997 to support students based on their academic merit and financial need.
- Bristol-Myers Squibb Scholarship: Established in 1985, and later increased in 1989, to support Egyptian students based on their academic merit and financial need.
- British Petroleum Scholarship: Established in 1991 to support a business administration senior who demonstrates academic excellence, with preference given to students with financial need.
- Cairo Barclays Scholarship: Established in 1987 to support Egyptian students majoring in either business administration or computer science based on their academic merit and financial need.
- Citigroup Scholarship: Established in 1985 to support an Egyptian junior or senior majoring in either business administration or computer science who demonstrates leadership qualities and high academic standing
- Colgate-Palmolive Scholarship: Established in 1987 to support an Egyptian student.
- Credit Agricole Bank Scholarship: Established in 1988 to support one student majoring in business administration based on his or her academic merit and financial need.
- Cynthia Nelson Graduate Fellowships in Gender and Women's Studies (IGWS): Established in 2006 in memory of the late Dr. Cynthia Nelson to support graduate students enrolled in the Gender and Women's Studies program at AUC.
- David Vernon Bullough Scholarship: Established in 1987 by Mr. and Mrs. Bullough in memory of their son to support Egyptian students based on their academic merit and financial need.
- DHL Egypt Scholarship: Established in 1986 to support an Egyptian student majoring in business administration. The recipient has the opportunity to intern at the DHL office in Cairo during the summer.
- Douglas Horton Scholarship: Established in 1985 by the Horton family and friends in memory of Mr. Douglas Horton, Chairman of the AUC Board of Trustees from 1944 to 1961, to support an Egyptian student based on his or her academic merit and financial need.
- Dow Chemical Scholarship: Established in 1986 to support Egyptian students majoring in either chemistry or engineering based on their financial need.
- Dr. Abdel Hamid El Sawy Scholarship: Established in 1985 by Dr. and Mrs. Abdel Hamid El Sawy '72, AUC alumni, to support Egyptian students.
- Dr. Aboul Fetouh Shahine Scholarship: Established in 1987 by Mohamed, Hussein and Hassan Shahine in memory of their father to support Egyptian students.
- Dr. Akef El Maghraby Public School Scholarship: Established in 2003 to support talented students from Egyptian public schools.
- Dr. and Mrs. A. Livingston Warnhuis Scholarship: Established in 1986 by family members in memory of Dr. and Mrs. A. Livingston and Ms. M. Chambers Warnhuis to support students based on their academic merit and financial need, with preference given to students from Africa and India.
- Dr. Nabil Elaraby Fellowship: Established in 2007 to support one Egyptian student applying for or enrolled in the LLM program.
- Galal El Zorba Public School Scholarship: Established in 2004 to support an outstanding student from an Egyptian public school.
- General Electric Scholarship: Established in 1984 to support Egyptian students based on their academic merit and financial need.
- Georgiana Stevens Scholarship: Established in 1982 by Mrs. Georgiana Stevens as a reflection of her deep interest in the Middle East and Cairo, this scholarship supports Egyptian students.
- Ghaleb El Farouki Scholarship: Established in 1985 to support a Palestinian student based on

his or her financial need.

- GlobalSantaFe Corporation Public School Scholarship: Established in 2002 to support outstanding engineering students from Egyptian public schools based on their academic merit and financial need.
- H.E. Mrs. Suzanne Mubarak Public School Scholarship: Established in 2006 to support students from Egyptian public schools.
- Hayel Saeed Endowed Scholarship: Established in 1994 by alumnus Sheikh Abdul Rahman Hayel Saeed '68 in commemoration of AUC's 75th anniversary, this scholarship covers tuition, housing, board, textbooks, medical insurance and local medical services for four Yemeni students who meet the university requirements for admission.
- Hermann F. Eilts International Scholarship Fund: Established in 2007 in memory of Amb. Herman F. Eilts, a member of AUC's Board of Trustees, to cover the expenses of undergraduates enrolled in colleges and universities in the United States who have an interest in the Middle East to pursue Middle East studies, political science or history at AUC for one semester/year.
- Hisham Ezz El Arab Endowed Scholarship Fund: Established in 2010 as a partial scholarship to support one student majoring in accounting, business administration or economics.
- HSBC Bank Egypt Public School Scholarship Fund: Established in 2007 to support one student from an Egyptian public school who is enrolled in a finance related major such as accounting, business administration or economics. The recipient should maintain a GPA of 3.0 or higher.
- IBM Scholarship: Established in 1990 to support Egyptian students.
- IPR Group of Companies / Dr. Mahmoud K. Dabbous Family Public School Scholarship: Established in 2006 to support one student from an Egyptian public school.
- John and Gail Gerhart Public School Scholarship Fund: Established in 2002 in honor of Dr. John Gerhart, President of AUC from 1998-2002, to support students from Egyptian public schools.
- John and Marguerite Harbert Scholarship: Established in 1986 by the late AUC Trustee John M. Harbert III and Mrs. Harbert to support one Egyptian student.
- Johnson & Johnson Scholarship: Established in 1990 to support students majoring in management based on their academic merit and financial need.
- Magdy Tolba Public School Scholarship: Established in 2006 to support one student from an Egyptian public school. The recipient should maintain a high GPA.
- Mahmoud Muftah Scholarship: Established in 1991 by INCOGUM in memory of its marketing manager, Mahmoud Muftah, to support one Egyptian student majoring in business administration.
- Major General Ahmed Arafa Public School Scholarship: Established in 2005 by members of the Ahmed Arafa family in memory of Major General Ahmed Arafa to support students from Egyptian public schools. The recipients should maintain a GPA of 3.4 or higher.
- Mansour Group Fellowship (formerly MANTRAC): Established in 1989 to support a master's degree candidate in business administration based on his or her academic merit.
- May and Ahmed Heikal Public School Scholarship Fund: Established in 2006 to support ten students from Egyptian public schools.
- Moataz Al-Alfi Scholarship: Established in 1998 by AUC Trustee Moataz Al-Alfi to support an Egyptian undergraduate enrolled in marketing courses.
- Mohamed El Beledy Scholarship: Established in 1985 by the late Dr. Mostafa El Beledy in memory of his father to support an Egyptian student based on his or her academic merit and financial need.
- Mohammad Abughazaleh Palestinian Scholarship: Established in 2006 to support five

- deserving and talented students from the Palestinian Occupied Territories.
- **Mustafa Abdel-Wadood Public School Scholarship:** Established in 2007 to support one student from an Egyptian public school. The recipient should maintain a high GPA.
 - **Nadia Niazi Mostafa Fellowship in Islamic Art and Architecture:** Established in 2001 to support a second year Egyptian graduate student in the Department of Arab and Islamic Civilizations who specializes in Islamic Art and Architecture based on his or her academic merit and financial need.
 - **P&G Scholarship:** Established in 1998 to support students based on financial need.
 - **Parents Association (PA) Scholarship:** Established by the 1997-1999 PA Board to support junior or senior students who face emergency situations and financial crisis during the course of their study at AUC.
 - **PepsiCo Scholarship:** Established in 1982 to support an Egyptian student majoring in business administration or marketing based on his or her academic merit and financial need.
 - **Philip Morris Mansour Group Scholarship:** Established in 1995 to support students enrolled in programs at the School of Continuing Education based on their academic merit and financial need.
 - **R. D. Matthews Scholarship:** Established in 1982 in honor of the first four Americans who taught at AUC for a two-year term during the 1920's, Mr. Roderic Matthews, Mr. Ralph Douglas, Dr. Earl Moser and Dr. Herbert Vandersall, this scholarship supports Egyptian students.
 - **RAM Scholarship:** Established by an anonymous donor in 1985 to support a Palestinian student majoring in engineering or computer science.
 - **Raytheon Scholarship:** Established in 1986 to support an Egyptian student in the engineering department.
 - **Riad Kamal Palestinian Scholarship:** Established in 2006 to support five Palestinian students.
 - **Roger E. Tamraz Scholarship:** Established in 1982 by former AUC Trustee, Roger Tamraz, to support an Egyptian student.
 - **Santa Fe International Scholarship:** Established in 1995 to support Egyptian students majoring in the humanities or social sciences.
 - **Sasakawa Young Leaders Fellowships:** Established in 1993 to support graduate students in economics, public administration, the social sciences or the humanities.
 - **Shell Scholarship:** Established in 1996 to support an Egyptian student based on his or her academic merit and financial need.
 - **Sheta Scholarship:** Established in 1983 by Mohamed and Mona Sheta, the parents of two AUC alumni, to support Egyptian students.
 - **Simpson Scholarships for the Junior Year Abroad Program in Egyptology:** Established in 2003 to support five junior or senior undergraduates enrolled in the Year Abroad Program in Egyptology at AUC based on their academic achievement.
 - **Stone & Webster Scholarship:** Established in 1985 to support Egyptian students.
 - **Taher Family Scholarships:** Established in 2005 to support Palestinian students based on their financial need. Preference is given to those who intend to return to Palestine after graduation or engage in a future occupation that would assist in the economic development of the area.
 - **Tarek Juffali Fellows Program:** Established in 2010 to support graduate students studying international counseling and community psychology.
 - **Thomas A. Lamont Scholarship:** Established in 1998 by the Board of Trustees and friends in memory of Dr. Thomas Lamont who served AUC with distinction, both in his capacity as teacher and as senior administrator, from 1975 to 1998. The scholarship supports English and comparative literature seniors whose performance during the first three years demonstrates outstanding ability and excellent academic achievement.

- Torgersen Scholarship: Established in 1993 to support Egyptian students in the sciences based on their financial need.
- Vanessa B. Korany Scholarship in the Graduate School of Education: Established in 2009 as a partial scholarship to support two female students based on their academic merit and financial need.
- Wafiya El Hassany Scholarships: Established in 1992 by AUC alumna, Mrs. Wafiya El Hassany '48 '50, to support one Egyptian male student and one female student, preferably Palestinian, based on their academic merit and financial need.
- Warner-Lambert Scholarship: Established in 1986 to support students based on their academic merit and financial need.
- Wasef Jabsheh Jordanian/Palestinian Scholarship Fund: Established in 2006 to support students from Jordan or Palestine.
- Wefaq Fahmy Public School Scholarship: Established in 2009 to cover tuition and books for a student from Egyptian public schools. The recipient should maintain a high GPA.
- Xerox Foundation Scholarship: Established in 1986 to support Egyptian and foreign students.
- Yahiya Arafa Public School Scholarship: Established in 2006 to support one student from an Egyptian public school.
- Yasmina Scholarship: Established in 1990 to support Egyptian students.
- Youssef Nabih Scholarship in Accounting: Established in 2004 to support the graduating senior with the highest GPA in the accounting department.
- Youssef Nabih Scholarship: Established in 1987 to support students based on their academic merit and financial need.

Special Awards

Contributions from donors provide a number of endowed and annual awards. Eligible students may apply at the departments where these awards are offered.

- Abdulla Mohamed Lamloom '80 Prize in Economics: A cash award given to the highest-ranking graduating senior in economics.
- Tewfick Pasha Doss '77 Award in English Literature: An annual award given alternately to the best graduate thesis in English and comparative literature or political science.
- Ahmed El Mehallawi Family Award in Outstanding Academic Achievement and Community Service: A semiannual cash award given to a graduating senior who has demonstrated excellent academic achievement and has enrolled in extracurricular activities including community service.
- Ahmed Fakhry '89 Award in Egyptology: A cash award given to the most outstanding Egyptology junior.
- Ahmed Zewail HD '93 Prize for Excellence in Sciences and Humanities: A semiannual cash award given to an honors graduate whose academic accomplishments demonstrate extraordinary commitment to the pursuit of scientific inquiry and the affirmation of human values.
- Anand Mehta '92 Award in MUN Participation: An award to support Egyptian students participating in Model United Nations (MUN) conferences abroad.
- Bahgat Hassanein Award in Construction Engineering: A semiannual cash award given to the top-ranking student in construction engineering.
- Beatrice and Roger Carlson Prize in Academic Merit: A cash prize given to a female student who has demonstrated academic excellence. The prize money is to be used for the purchase

of books.

- Dr. Abdel Rahman El Sawy Award: A semiannual award given to the graduating senior with the highest GPA in the engineering department who also received a Public School Scholarship Fund (PSSF) scholarship.
- Duggan Memorial Fund for AUC Library Staff: An award given to provide training and development for library staff.
- Frank G. Wisner Award for Scholarly Excellence: An annual cash award given to the graduate student who writes the best thesis on a topic related to modern Egypt.
- Madalyn Lamont Literary Award: A cash award given to students with an outstanding creative achievement in poetry, drama, fiction or essay-writing.
- Mohamed El Beleidy Academic Award: A semiannual cash award given to the graduating senior with the highest GPA.
- Nadia Niazi Mostafa Award in Islamic Art and Architecture: An award given to a second-year Egyptian student enrolled in the Arabic Studies graduate program who specializes in Islamic Art and Architecture and wishes to pursue full time study in the program. The recipients should maintain a GPA of 3.2 or higher.
- Nadia Younes Award for Public and Humanitarian Service: Established in 2004 in memory of Nadia Younes, this award recognizes the graduating senior who has exhibited the highest commitment to community and humanitarian service.
- Naguib Mahfouz HD '95 Medal for Literature: Established in 1997 to reflect the commitment of the AUC Press to bring the best Arabic literature to the attention of the widest possible foreign audience. This is an annual award consisting of a silver medal and cash prize given to the best contemporary novel published in Arabic and is presented by the AUC Press on December 11, the date of Naguib Mahfouz's birthday.
- Noreen Anwar Prize in English Writing: A cash prize awarded to the student with the best research paper in the Freshman Writing Program (FWP).
- Parents Association Cup: A semiannual cup given to a graduating senior who demonstrated outstanding academic achievement and contributed to student activities.
- President's Cup: A semiannual cup given to students who achieved the highest GPA during their years of study at the university.
- Reda Salama Prize in Literature and Science: Two annual cash prizes given to the best literature and best science students in the School of Continuing Education Secondary-School Program.
- Samiha El Barkouky Award in Egyptology: An award given to a graduating Egyptology senior who demonstrated academic merit with a GPA of 3.3 or higher.
- Vanessa B. Korany '04 Award for Development and Creativity: Established in 2009, this is a cash award given to the best thesis proposal covering and integrating the fields of political science, economics, development, arts and education.

Academic Organization and Support Services

The academic programs of the American University in Cairo are offered by departments, institutes and centers that are administratively housed in five schools. The academic area also includes research centers and support services units.

Academic Organization

Schools

Graduate School of Education

- Master of Arts in International & Comparative Education

School of Business

1. Department of Accounting

- Bachelor of Accounting (BAC)
- Minor in Accounting

2. Department of Economics

- Bachelor of Arts in Economics
- Minor in Economics
- Master of Arts in Economics with concentrations in Growth and Sustainable Development, Competitive Strategy and Valuation, and International Economics
- Master of Arts in Economics in International Development
- Economics Graduate Diploma in International Development

3. Department of Management

- Bachelor of Business Administration (BBA) with concentrations in Marketing, Finance, Management of Information Systems and General Business.
- Bachelor of Business Administration in Management of Information and Communication Technology (MICT)
- Minor in Business Administration
- Minor in Information Systems
- Masters of Business Administration (MBA) with concentrations in Construction Industry, Finance, International Business, Leadership and Human Resources Management, Management of Information Systems, Marketing, and Operations Management

- Master of Science in Finance with concentrations in Corporate Finance, and Investments
- Professional non-degree executive training, consulting, research and advisory services

School of Global Affairs and Public Policy

1. Department of Journalism and Mass Communication

- Bachelor of Arts in Communication and Media Arts
- Bachelor of Arts in Integrated Marketing Communication
- Bachelor of Arts in Multimedia Journalism
- Master of Arts in Journalism and Mass Communication
- Master of Arts in Television and Digital Journalism
- Non-degree training programs in Television Journalism

2. Department of Law

- Master of Arts in International Human Rights Law
- The Ibrahim Shihata Memorial LL.M. (Masters of Law) in International and Comparative Law
- Graduate Diploma in International and Comparative Law
- Graduate Diploma in International Human Rights Law

3. Department of Public Policy and Administration

- Dual Degree Master Programs in Development Practice (MDP) option BSc/CENG-MPA
- Master of Global Affairs (MGA) with concentrations in International Cooperation, and International Security
- Masters of Public Administration (MPA) with concentrations in Management of Public Sector Reform, and Management of Nonprofit and Development Organizations
- Masters of Public Policy (MPP) with concentrations in Social and Environmental Policy, and Government Promotion and Regulation of the Private Sector
- Graduate Diploma in Public Administration
- Graduate Diploma in Public Policy

4. The Cynthia Nelson Institute for Gender & Women's Studies

- Master of Arts in 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
- Graduate Diploma in Gender and Women's Studies in the Middle East and North Africa

5. Center for Migration & Refugee Studies

- Master of Arts in Migration and Refugee Studies
- Graduate Diploma in Forced Migration and Refugee Studies
- Graduate Diploma in Psychosocial Interventions for Forced Migrants and Refugees

6. Prince Alwaleed Bin Talal Bin Abdulaziz Alsaud Center for American Studies and Research

- Minor in American Studies

7. Middle East Studies Program

- Bachelor of Arts in Middle East Studies

- Master of Arts in Middle East Studies
- Graduate Diploma in Middle East Studies

School of Humanities and Social Sciences

1. Department of Arab and Islamic Civilizations

- Bachelor of Arts in Arabic Studies with specializations in Arabic literature, Middle Eastern History and Islamic Art and Architecture.
- Minor in Arab and Islamic Civilization
- Minor in Arabic Literature
- Minor in Classical/Medieval Islamic History
- Minor in Islamic Art & Architecture
- Minor in Islamic Studies
- Master of Arts in Arabic Studies with specializations in Islamic art and architecture, Arabic language and literature, Middle Eastern history and Islamic Studies

2. Department of English and Comparative Literature

- Bachelor of Arts in English and Comparative Literature
- Minor in English and Comparative Literature
- Master of Arts in English and Comparative Literature
- Graduate Diploma in Comparative Literary Studies

3. Department of History

- Bachelor of Arts in History
- Minor in Comparative Religion
- Minor in History
- Graduate credit courses

4. Department of Performing and Visual Arts

- Bachelor of Arts in Art with concentrations (for non-Art Majors) in Graphic Arts and Design, and Traditional Egyptian Arts
- Bachelor of Arts in Music Technology
- Bachelor of Arts in Theatre
- Bachelor of Musical Arts (BMA) for the concentration in Performance
- Minor in Art
- Minor in Film
- Minor in Graphic Arts and Design
- Minor in Music
- Minor in Music Technology
- Minor in Theatre
- Minor in Traditional Egyptian Arts

5. Department of Philosophy

- Bachelor of Arts in Philosophy
- Minor in Philosophy

6. Department of Political Science

- Bachelor of Arts in Honors Program in Political Science

- Bachelor of Arts in Political Science with specializations in General Political Science, International Relations, Middle East Politics, Political Economy, and Public & International Law
- Minor in International Relations
- Minor in Middle East Politics
- Minor in Political Economy
- Minor in Political Science
- Master of Arts in Political Science with specializations in Comparative Politics, International Relations, and Professional Development
- Graduate Diploma in Political Science

7. Department of Rhetoric and Composition

- Minor in Rhetoric and Writing
- Core Curriculum courses in Rhetoric and Composition Specialized courses in writing and communication Writing Center

8. Department of Sociology, Anthropology, Psychology, and Egyptology

- Bachelor of Arts in Anthropology with a specialization in Community Development
- Bachelor of Arts in Egyptology
- Bachelor of Arts in Psychology with a specialization in Community Development
- Bachelor of Arts in Sociology with a specialization in Community Development
- Minor in Anthropology
- Minor in Community Development and Organizing
- Minor in Coptic Studies
- Minor in Development Studies
- Minor in Egyptology
- Minor in Psychology
- Minor in Sociology
- Master of Arts in Community Psychology
- Master of Arts in Counseling Psychology
- Master of Arts in Egyptology and Coptology with tracks in Egyptology: Art, Archeology and History, Egyptology: Philology, and Coptology
- Master of Arts in Sociology-Anthropology
- Graduate Diploma in Community Psychology
- Graduate Diploma in Family Counseling

9. Arabic Language Institute

- Master of Arts in Teaching Arabic as a Foreign Language (TAFL)
- Graduate Diploma in TAFL
- Non-degree intensive Arabic Language Instruction (ALIN)
- Arabic Language instruction for the Center for Arabic Study Abroad (CASA) program
- Courses in the Arabic language for undergraduate credit (ALNG)

10. English Language Institute

- Minor in Linguistics
- Master of Arts in Teaching English as a Foreign Language (TEFL)
- Graduate Diploma in TEFL
- Intensive English Language Instruction to incoming undergraduate and graduate

students, who are non-native speakers of English

11. European Studies Program

- Graduate Diploma in European Studies

12. Other Courses of Study in Development Studies at AUC (Graduate)

School of Sciences and Engineering

1. Department of Biology

- Bachelor of Science in Biology
- Minor in Biology
- Minor in Environmental Sciences
- Premedical track courses

2. Department of Chemistry

- Bachelor of Science in Chemistry, with specializations in Clinical Chemistry, and Industrial Chemistry
- Minor in Archaeological Chemistry
- Minor in Chemistry
- Master of Science in Chemistry with concentration in Food Chemistry
- General Science Courses (SCI)

3. Department of Computer Science and Engineering

- Bachelor of Science in Computer Engineering
- Bachelor of Science in Computer Science
- Minor in Computer Science
- Master in Computing (M.Comp.)
- Master of Science in Computer Science
- Graduate Diploma in Computer Science

4. Department of Construction and Architectural Engineering

- Bachelor of Science in Architectural Engineering
- Bachelor of Science in Construction Engineering with concentrations in Construction Materials and Structures, Construction Management and Technology, and Environmental Engineering.
- Minor in Architectural Design
- Master of Engineering in Construction Engineering
- Master of Science in Construction Engineering

5. Department of Electronics Engineering

- Bachelor of Science in Electronics Engineering
- Master of Engineering in Electronics Engineering
- Master of Engineering in Electronics Engineering with concentration in Management of Technology
- Master of Science in Electronics Engineering

6. Department of Mathematics and Actuarial Science

- Bachelor of Science in Actuarial Science
- Bachelor of Science in Mathematics, with an option in Statistics & Data Analysis
- Minor in Applied Probability and Statistics
- Minor in Mathematics

7. Department of Mechanical Engineering

- Bachelor of Science in Mechanical Engineering, with concentrations in design, industrial, materials and manufacturing, mechatronics, and power
- Minor in Mechatronics
- Master of Engineering in Mechanical Engineering
- Master of Science in Mechanical Engineering with specializations in Design, Industrial Engineering, Materials & Manufacturing Engineering, Mechatronics, and Power

8. Department of Petroleum and Energy Engineering

- Bachelor of Science in Petroleum Engineering with concentration in Energy Resources

9. Department of Physics

- Bachelor of Science in Physics, with an option in Instrumentation
- Minor in Electronics
- Minor in Physics
- Master of Science in Physics
- Graduate Diploma in Physics

10. Doctorate of Philosophy (Ph.D.) Program in:

- Applied Sciences
- Engineering

11. Biotechnology Program

- Master of Science in Biotechnology

12. Environmental Engineering Program

- Master of Science in Environmental Engineering
- Master of Engineering in Environmental Systems Design

13. Robotics, Control and Smart Systems Program

- Master of Engineering in Robotics, Control and Smart Systems (M.Eng.)
- Master of Science in Robotics, Control and Smart Systems (M.Sc.)

14. Nanotechnology Program

- Master of Science in Nanotechnology

15. Engineering Steering Committees

- Undergraduate general engineering courses (ENGR)
- Graduate general engineering courses (ENGR)

16. Engineering and Science Services

- Training programs for practicing engineers

Research Centers

The university has the following research centers. For more details, see section on Research.

1. Access to Knowledge for Development Center
2. AUC Forum
3. Desert Development Center
4. El-Khazindar Business Research and Case Center
5. Prince Alwaleed Bin Talal Bin Abdulaziz Alsaud Center for American Studies and Research
6. Social Research Center
7. The Cynthia Nelson Institute for Gender & Women's Studies
8. The John D. Gerhart Center for Philanthropy and Civil Engagement
9. The Yousef Jameel Science and Technology Research Center

Research Support Offices

The university supports research through the following offices. For more details, see section on Research.

1. Office of Associate Provost for Research Administration
2. Office of the Dean of Graduate Studies
3. Office of Sponsored Programs

Academic Support Services

Libraries and Learning Technologies

Dean: S. El Sawy

Associate Dean for Library Administration: Vacant

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, M. Chromey, , L. Eid, H. El Ridi, C. Grimmer, M. Houlihan, M. Ismail, 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

Academic Organization and Support Services 43

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.

Website is available: www.aucegypt.edu/academics/resources/WriteCen/Pages/default.aspx
Webmail: wcenter@aucegypt.edu

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.

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

Academic Organization and Support Services 45

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.

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.

Academic Organization and Support Services 47

For further information on CAPS programs and dates of career-related events, refer to CAPS website: www.caps.aucegypt.edu

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>

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. These responsibilities include Semester/Academic Year Exchange and Study Abroad, Summer/Winter Exchange and Study Abroad, Academic Advising for Incoming Study Abroad Students, Academic Advising for International Transfer Students, Special Academic Programs, and creating and administering agreements with international academic institutions and universities.

IPO offers AUC students a wide variety of study abroad opportunities, mostly on an exchange basis, for a semester or an academic year. 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, rather than the tuition of the host university. In a Direct Enrollment Program, students pay the tuition of the host university. Under both arrangements, academic credits transfer back to AUC.

Each summer there are various opportunities for AUC students to study abroad, including the University of California (Berkeley) and academic travel programs to Italy, Spain, Mali, and other countries. Study abroad opportunities in the Winter session are occasionally available.

IPO handles the academic advising and registering for Incoming Study Abroad Students (ISABs). Students enroll in Arabic language classes and in regular undergraduate courses, usually at the 300 – 400 level.

Academic Advising for International Transfer Students is managed by IPO, in consultation with the Registrar, Core Curriculum office, and the students' disciplinary major.

Special Academic Programs are organized programs that IPO arranges for visiting groups from foreign universities. These programs are tailored to suit the needs of that particular program on a fee-for-service basis. Current AUC partners include St. Olaf College, Seton Hall University Law School, Law Faculty of the University of Zurich, Bentley University, Grand Valley State University, and Princeton University.

IPO negotiates, reviews and maintains administrative oversight over agreements with foreign universities, in coordination with the Schools and the Provost.

The image is a full-page background photograph of a university campus. In the foreground, there is a large, circular fountain with several water jets spraying upwards. The water is dark and turbulent. Behind the fountain is a low, stone-walled retaining wall. In the background, a large, modern university building with a grid-like facade of windows and a prominent entrance is visible. The building is surrounded by trees, including palm trees. The entire image has a warm, yellowish-orange tint. The text "Undergraduate Studies" is centered over the fountain area.

Undergraduate Studies

Admissions

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 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 \$16,000 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, university level English courses
- Successful completion of English-medium secondary school coursework and examinations that qualify for advanced placement including the International Baccalaureate Diploma Program, the 13th year of Canadian education and the GCE A-Level Certificate in English
- Recent 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 (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.

52 Undergraduate

The University determines English Language placement using applicants' highest score on the TOEFL or 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.

Undergraduate Admissions 53

- 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 2009 and spring 2010 is 1350 or comparable ACT scores. Students are encouraged to complete a well balanced university preparatory program that includes:
 - o Three years of mathematics including algebra, geometry and trigonometry.
 - o Two years of a second modern language.
 - o Two years of a laboratory science.
 - o Three years of social sciences.
 - o One year of fine arts course work and training.
 - o 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.
- 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

54 Undergraduate

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. 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. 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:

o International Baccalaureate Diploma/Certificate

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

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

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

o The College Board Advanced Placement (AP) Examinations.

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

o German Secondary School Certificate-Abitur

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

o French Baccalaureat II

The University grants up to 30 transfer credits for academic subjects with advanced level

56 Undergraduate

scores of 14 or more (out of 20).

o 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 IELTS results with their readmission application.

English Level at Time of Withdrawal	Lapse of Time	TOEFL Required
Successfully completed RHET 201	Less than 24 months	No
	More than 24 months	Yes
Enrolled in ENGL 100, or RHET 101, 102 or 201	Less than 6 months	No
	Between 6-12 months	Optional
Enrolled in IEP	Less than 6 months	No
Enrolled in IEP, ENGL 100, or RHET 101, 102 or 201	More than 12 months	Yes

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-Thanaawiya 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

58 Undergraduate

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 (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.

Academic Requirements & Regulations

Academic requirements and regulations govern the relationship between the university and its students. Students must complete the general academic requirements described below as well as those listed under 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

Academic Requirements & Regulations 61

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:

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

Residence

To obtain a bachelor's degree a student must take at least 45 credit hours of courses in residence at the American University in Cairo. At least 30 of the 45 hours must be in courses at the 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.

62 Undergraduate

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

Academic Requirements & Regulations 63

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

64 Undergraduate

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 classes up to the end of the fourth week of classes in an academic semester or the summer session, with no grade record being maintained.
- Between the end of the fourth and the twelfth week of classes in an academic semester, students may drop courses. A grade of "WP" will be assigned to students whose performance is evaluated by the professor as "C" or above, or a grade of "WF" will be assigned to those whose performance is evaluated as less than "C".
- After the twelfth week in academic semesters and the fourth week in the summer session, students are not permitted to drop classes.
- 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.

Academic Requirements & Regulations 65

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.

66 Undergraduate

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.

Grade	Points	Description
A	4.0	Excellent
A-	3.7	
B+	3.3	Very good
B	3.0	
B-	2.7	Good
C+	2.3	
C	2.0	Passing
C-	1.7	

Academic Requirements & Regulations 67

D+	1.3	Conditionally passing
D	1.0	
F	0.0	Failing

Grades not included in the Grade Point Average:

P	Pass*
F	Fail
I	Incomplete
S	Satisfactory
U	Unsatisfactory
W	Withdrew
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:

Course ID	Grade	Credit Hrs	Quality Points		
RHET 101	C	3	6		
CHEM 105	D	3	3		
CHEM 115L	C+	1	2.3		
MACT 131	F	3	0		
PHYS 111	A-	3	11.1		
PHYS 123L	B+	1	3.3		
Current AHRS	EHRS	QHRS	QPTS	GPA	
14	11	14	25.7	1.83	

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

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

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

68 Undergraduate

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

Academic Requirements & Regulations 69

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:
 - o Give a grade of "F" for the course;
 - o Ask the student to drop the course if the absences occur before the last date for dropping classes; and/or
 - o 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

Effective fall 2002, 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 twelve semester credits 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 12 credits 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 repeat course form is available in the Office of the University Registrar and on the Registrar web page: <http://student.aucegypt.edu>. The completed form must be submitted to the University Registrar's Office by maximum the twelfth 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.

70 Undergraduate

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

Academic Requirements & Regulations 71

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

72 Undergraduate

- 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.)

Academic Requirements & Regulations 73

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.

74 Undergraduate

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.

7. 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.
8. 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.
9. Impersonation: impersonating or allowing to be impersonated by another individual during classes, examination or other university activities.
10. 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.

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 Requirements & Regulations 75

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.

76 Undergraduate

Undergraduate Student Finances

Tuition and Fees

Starting the academic year 2003/2004, there has been two tuition rates: one for Egyptian students and non-Egyptian students who are permanently resident in Egypt (category A) and the other for non-Egyptian, non resident students (category B).

Category A students will pay the tuition fee in Egyptian pounds according to the tuition rates stated in the bulletin issued by the Office of Students Financial Affairs. Category B students will pay in US dollars according to the rates stated in the same bulletin. For the year 2010/2011 the tuition fees per semester for 12 credits was set at:

Category A students L.E. 52,836

Category B students \$ 11,184

Additional charges are added for additional credits.

The highest-ranking undergraduate students are given tuition scholarships based on academic achievement providing them with reduced actual rates. Students may retain their achievement scholarship at the same level as long as they maintain their performance level. (Refer to achievement scholarship policy under “Undergraduate Scholarships” in this section of the catalog). Students beyond their freshman year have to maintain a full time status during the year in order to be eligible for continuing scholarship awards.

A few students may also be admitted with sports or cultural scholarship. Sports and cultural scholarships awarded at the time of admission are one-year scholarships. They may be renewed for subsequent years if the student represents the university in the official championships or contests organized by national government bodies.

No student with bills outstanding, including charges for breakage or library fines, will be admitted to any examination, given any certificate or report of academic standing, or be permitted to register for a subsequent semester.

Deferred Payment

When a student is unable to pay the entire amount due at the time of registration, payment can be made in two installments as follows:

For continuing students:

- 50% to be paid at the time of registration.
- The balance must be paid by November 20th for the fall semester and April 15th for the spring semester.
- The student will pay the set administrative fee.

For new students:

- 70% of the tuition must be paid at the time of registration.
- The balance must be paid by November 20th for the fall semester and April 5th for the spring semester.

Tuition Fee for Readmission

1. Disqualified cases: students who were disqualified and readmitted will be required to pay the full tuition fee prevailing at the time of readmission.
2. Readmission after one semester of withdrawal: no change in tuition level, same as prior to withdrawal.
3. Readmission cases for students who withdrew for more than one semester: students will pay according to the tuition level of their cumulative GPA at the time of readmission.

Refund Policy

Given the need to know which new undergraduate students will attend AUC in order to admit alternate candidates by the beginning of classes, new undergraduate students are not entitled to refunds.

A full refund for continuing students is made only for courses dropped before the end of the late registration period. Students who drop a course after the deadline for late registration are not entitled to any refund for the course(s) dropped. However, students who withdraw from the university after the deadline will receive a partial refund, the amount depending on the number of weeks which have elapsed since the beginning of classes. Refunds are made according to the following schedule:

- First week of classes: full tuition refund
- Second week: eighty percent tuition refund
- Third week: sixty percent tuition refund
- Fourth week: forty percent tuition refund
- Fifth week: twenty percent tuition refund
- After the end of the fifth week no refunds will be made.

Summer-session students who withdraw one day after registration can be refunded the amount paid. Summer session students who withdraw more than one day after registration will receive a partial refund according to the following schedule:

- By the end of the first week: seventy five percent of tuition and fees.
- By the end of the second week: fifty percent of tuition and fees.
- After the end of the second week no refunds will be made.

The refund schedule refers to tuition for credit courses, audited courses, and instruction in the ALI and English Language Institute. The student services and activities fee, the application fee, laboratory and studio course fees, and special charges are not refundable.

78 Undergraduate

School of Continuing Education and Training Programs

For regular courses offered by the School of Continuing Education, the Management Center, and Engineering and Science Services, schedules of fees are included in separate announcements. Fees for other educational and training programs are based on separate contractual arrangements. Most programs have differential fees for Egyptian and non-Egyptian participants.

Scholarships and Financial Aid

Although the American University in Cairo is a private university that depends upon tuition and contributions for its operation, it attempts to provide financial assistance to any student with a GPA of not less than 2.00 who demonstrates financial need. AUC offers, in addition to its high tuition scholarships for most students, a range of merit scholarships, financial aid, and student work programs to assist students in meeting the expenses of their education. For a listing of the available scholarships offered by outside organizations, please see the section on scholarships in the chapter entitled "The University". Scholarships and financial aid are not available for the winter sessions.

Undergraduate Scholarships

1. Achievement Scholarships :

The achievement scholarship is granted to the top 25 percent of the degree-seeking undergraduate students for a one-year period, which is revised annually. The scholarship amounts to 30 percent of the full tuition fees.

Students admitted before the academic year 2010-2011 will be evaluated after the summer session.

Students admitted starting academic year 2010-2011 will be evaluated as follows:

- Students enrolled in the fall semester will be evaluated after the summer session.
- Students enrolled in the spring semester will be evaluated after the winter session.

Students will retain their achievement scholarship as long as they maintain a cumulative GPA of not less than 3.0 and a full-time status (a minimum of 12 credit hours per semester). Students who take remedial English courses (ELI) or English 100 during the fall and/or spring semesters of the previous academic year will retain their achievement scholarship at the same level. Transfer credits are not counted in the achieved hours.

Students who have either lost their scholarship or joined the university with no achievement scholarship may be granted the achievement scholarship if they maintain full time status (a minimum of 12 credit hours per semester) and achieve a cumulative GPA of 3.75 or above for a minimum of 30 credit hours of work at AUC at the evaluation period. Transfer credits are not counted in the achieved hours.

2. Scholarships for Students from Government Secondary Schools:

Undergraduate Student Finances 79

AUC offers Twenty full-tuition scholarships per year to students from governmental schools with good academic qualifications demonstrating serious financial need. Selected students will maintain their scholarship until graduation as long as they are making satisfactory progress towards their degrees. Nomination of students is made by the Ministry of Education and final selection is made by the university from among those who meet the admissions requirements.

3. Sports Achievement Scholarship:

- Sports Achievement Scholarship is awarded to a limited number of students who participate in sports, which include but are not limited to basketball, swimming, judo, rowing, cocker, tennis, handball, and squash.
- School competitions are not accepted.
- Documents proving sports achievement levels will be examined by the Athletics Department and the applicant's activities will be evaluated by a committee.
- The Sports Achievement Scholarship gives the student a reduction of 15% of the full tuition fee per semester for that academic year.
- The scholarship is awarded to applicants meeting the following level of distinction in their final secondary school year.

(For more details please refer to the following website:

<http://www.aucegypt.edu/students/finaff/scholarships/Pages/Sports.aspx>).

4. Sports Merit Awards:

Students who participate in the National Universities Championship may be granted a cash award according to the criteria which will be determined every year by the University according to the allocated funds and number of winners of gold, silver and bronze medals. Selected students must have a Grade Point Average of not less than 2.5 in the year of which the award is granted.

5. Innovation, Cultural and Leadership Scholarship:

Cultural achievement scholarship is awarded each year to a limited number of new students who participated in cultural activities, which include but are not limited to music, singing, dancing, acting, drawing, and writing, organized by local official government bodies and in which they have achieved a high level of distinction. The applicant will be interviewed by the Office of Student Development and his/her activities will be evaluated by a committee to determine eligibility.

The cultural achievement scholarship gives the student a reduction of 15% of the full tuition fee per semester for that academic year. (For more details, please refer to the following website: <http://www.aucegypt.edu/students/finaff/scholarships/Pages/Cultural.aspx>).

6. Cultural merit Awards:

The university annually provides a number of cultural achievement awards to students who have been enrolled for at least one academic year. The criteria and size of cultural achievement awards are determined every year by the University according to the allocated funds and the number of winners of first place in one of the national cultural contests organized by an official

80 Undergraduate

government recognized body, or students recommended by the trainers. Selected students must have a grade point average of not less than 2.5 in the year for which the award is granted.

Financial Aid and Work Study for Students

The financial aid and student work program at the American University in Cairo is designed to provide financial assistance in the form of a grant or student work to Egyptian undergraduate students who need it to attend AUC. This financial aid or work covers only partial tuition at the university.

In addition to the achievement scholarships that students receive, approximately fifty percent of Egyptian undergraduate students have received additional financial assistance in recent years.

Eligibility

In order to be eligible for financial aid, students must meet all of the following criteria:

1. Financial aid established through the financial aid form (for financial aid).
2. Full-time undergraduate degree status.
3. Accumulated grade-point average of not less than 2.0.

Selection

The University Financial Aid Committee will make awards for the fall and spring semesters. A student applying at the beginning of the academic year may receive financial aid for the full academic year.

Awards and Renewal

Financial aid grants will be determined according to student or family financial resources, as appropriate, within university budget limitations. Financial need is defined as the difference between the costs of attending the American University in Cairo and the amount a student or family can contribute toward those costs. Aid may include both grants and part-time student work.

AUC will provide financial to continuing recipients who remain eligible and continue to demonstrate financial need. Students are responsible for reporting changes in their family's financial resources. A student's award may increase, decrease, or remain the same from year to year, depending upon university costs, the family's current financial ability, and university budget. Students on probation are not eligible.

Students who wish to apply for financial aid must submit the university's financial aid form with supporting documents to the Student Service Center by the deadlines shown below:

	<i>Fall Semester</i>	<i>Spring Semester</i>
New Students	Sept. 15th, 2011	Dec. 29, 2011
Returning Students	May 16th, 2011	Dec. 15th, 2011

Summer Financial Aid

No financial aid is awarded in summer semester.

Student Work Study Program

The Office of Student Financial Affairs in collaboration with the Career Advising and Placement Services office provide you with the opportunity to gain on-campus work experience and develop skills while earning some money through the Work Study (WS) program.

The WS gives students the opportunity to work in various departments on campus during the academic year and contribute to AUC's academic and administrative departments' projects and programs.

It allows students to contribute towards their education expenses, make use of their free time, gain experience, helps them develop transferable skills, boost their resumes and earn money.

Student participants should be willing to dedicate 8-10 working hours per week with a maximum of 120 hours during regular semester and 60 hours during the summer session.

Details on the student work study program is on the website:
<http://www.aucegypt.edu/students/finaff/WorkStudy/Pages/default.aspx>

Other Financial Assistance and Awards for Non-Egyptian Students

Study Abroad Students from U.S. State Universities

A partial tuition waiver is available to students currently enrolled full-time in their first undergraduate degree program at a U.S. four-year state university. The waiver assumes that the out-of-state (non-resident) tuition rate is lower than AUC's tuition. The waiver equals the difference between the two tuition rates. AUC must receive an official letter from the state university bursar or other responsible officer confirming that college's out-of-state tuition rate for the same period the student will be attending AUC. The waiver of the tuition difference is applicable only to undergraduate study abroad and ALIN program students for a maximum of two semesters. It does not apply to the summer session; to study in the Arabic Language Institute's intensive Arabic program; to part-time study; or to study towards an AUC degree. Students should contact AUC's New York Office for details (e-mail: aucegypt@aucnyo.edu).

AFS, EIL, and YFU Scholarships

The American University in Cairo offers two scholarships annually to alumni of each of the following programs: American Field Service; Experiment in International Living; and Youth for Understanding. Alumni of these programs must be non-Egyptian and seek their undergraduate degree from AUC. The award is a tuition credit equivalent to \$1,000 per year and will be awarded based on the individual's academic merit and financial need. Students must file the Financial Aid Profile of the College Scholarship Service (Box 6376, Princeton, New Jersey 08541, U.S.A.) and AUC's financial aid form immediately after admission. The scholarship is renewable based on academic performance and financial need.

Outside Assistance for American Students

Other than the opportunities described above, American students may be able to obtain outside support for work at AUC from the following sources:

82 Undergraduate

1. Rotary Foundation International Scholarships for one year of undergraduate, or language study. Contact: student's local Rotary Club or Rotary Foundation of Rotary International, 1 Rotary Center, 1560 Sherman Avenue, Evanston, Illinois 60201. www.rotary.org
2. Veterans Administration educational benefits are applicable to undergraduate degree study at AUC. U.S. veterans should contact their regional office of the Veterans Administration. Written approval of benefits from the Veterans Administration should be obtained prior to coming to Cairo. www.va.gov
3. Federal Stafford Loans can be used by U.S. citizens or permanent residents for undergraduate degree study or to earn a certificate in Arabic language (at least one year of intensive study). Pell Grants are not applicable. Degree and certificate students must obtain instructions from the AUC New York Office (e-mail: aucegypt@aucnyo.edu). Study abroad students may apply to their home university's financial aid office for campus-based aid and/or student loans to be used while they are enrolled at AUC
4. Gilman Scholarships U.S. undergraduates can receive financial support for study abroad programs worldwide through the new Benjamin A. Gilman International Scholarship Program of the State Department's Bureau of Educational and Cultural Affairs. The program is named after Congressman Ben Gilman (R-NY), the sponsor of legislation that sets aside \$ 1.5 million to broaden and increase opportunities for study abroad by undergraduate students who face financial constraints. The Institute of International Education (IIE), a New York-based non-profit organization, will administer the program through its Southern Regional Office in Houston, Texas under a grant from the Bureau.

Established under the International Academic Opportunity Act of 2002, Gilman International Scholarships will provide up to \$5,000 for American students to pursue overseas study for college credit.

Application forms are available at the Gilman International Scholarship website, www.iie.org/gilman. Additional information is available through IIE's Southern Regional Office by e-mail, at gilman@iie.org, or by calling (713) 621-6300 ext. 25.

Undergraduate Student Life

The American University in Cairo fosters a dynamic and multicultural co-curricular life on campus through programs and services offered by the division of Student of Affairs. Under the leadership of the Vice President, Student Affairs provides essential student services in the Offices of Enrollment Services, Admission, Student Financial Affairs, Career Advising and Placement Services (CAPS), and facilitates relevant student programs and leadership opportunities through The First Year Experience (orientation), International Student Affairs, Counseling Center, Mentoring Unit, Residential Life, Office of Student Development and Sports.

Activities

Student Activities are facilitated by the Office of Student Development within the context of university policy and the constitution of the General Assembly of the Student Body. The Office of Student Development includes four units: Student Organizations and Activities, Community Service Programs, Cultural Programs, and the First Year Experience and Leadership Institute. The administration reserves the right of veto in matters of student activities including those mentioned in the Student Union constitution.

The many extracurricular activities available at AUC reflect the diverse backgrounds and interests of the student body. While some events are sponsored and organized by the departments and units, most are initiated and carried out by student groups.

Student Associations and Clubs

Student Government (SG) is composed of legislative, judicial and executive branches. The Student Senate acts as the legislative branch and is composed of elected representatives from each major. The Student Judicial Board (SJB) is composed of five elected members and is represented in the Student Disciplinary and Academic Integrity Committees. The Student Union (SU) is the executive branch of the SG, and is headed by an elected president each year. SG provides student representation on university academic and other committees, and organizes events and services. Student associations and clubs provide a variety of opportunities for students to share similar interests. Student groups are formed for a number of reasons. Some groups are formed as a result of students having an interest in a certain geographic areas, like Al Quds Club. Others student groups have an interest in providing services to the Egyptian community, such as Volunteers in Action. Still others are formed around specific interests or majors, like the Political Science Association. Student organizations sponsor lectures, films, shows, and exhibitions as well as trips to places of historic, scientific, or other interests in Egypt. Each active student organization is required to have a faculty advisor with experience and expertise in the club's area of activity. Membership in clubs is open to all interested AUC students. The Office of Student Organization Activities is responsible for guiding and supporting the Student Union, academic clubs, and the student conferences. New student organizations may

84 Undergraduate

be formed with approval from the Office of Student Development and recognition from the Clubs and Conference Committee (CCC). All organizations must apply for renewal of approval and recognition each year.

Student Organized Conferences

Student organized conferences, such as the Model United Nations, Model Arab League (under the auspices of the Political Science Department, and Office of Student Development for non-conference activities), the Student Leadership Conference, the Student In Free Enterprise Conference and Global Economy Conference, offer the opportunity for students to learn skills such as negotiation and public speaking, to improve their knowledge of the world, and participate in a major organizational challenge. Conferences involve hundreds of students from AUC and other Universities, both in Egypt and abroad and contribute significantly to student life on campus.

The Community Service Program

Anti Cancer team, Hand in Hand, Volunteers in Action, Student Action for Refugees, and more are community service clubs that work with the spirit of serving the Egyptian Community. The Community Service Program supervises all community service activities, and focuses on raising students awareness of the social challenges facing their community. The Program provides students the opportunity to take initiative in dealing with such problems. Students benefit from renewing their social commitment clarifying values of good citizenship and learn how to become engaged in a positive social action. Currently there are more than ten community service volunteer clubs operating with different groups of under privileged people including the poor, orphans, cancer patients, the elderly and refugees etc.

Cultural Activities

The Office of Cultural Programs is responsible for cultural clubs and groups. Competent professionals on an extracurricular basis throughout the academic year train the Choral Group, Music Group, Egyptian Folk Dance Troupe, and Art Group and other cultural groups. Trips to represent Egypt and The American University in Cairo at festivals abroad are planned periodically for the choral, music, and folk dance ensembles.

Lectures and Concerts

Lectures held at AUC cover a wide variety of topics and feature scholars, diplomats, political, cultural and business figures and others from the university itself, and from Cairo and abroad. The University's Distinguished Visiting Professor program enables individual departments to host speakers throughout the year. In addition, student organizations invite guest speakers whose lectures are open to the university community.

Musical performances by visiting artists and AUCians are given throughout the year. Concerts feature a wide variety of music including classical and contemporary Arabic music, jazz, and western classical music performed by local groups like the Cairo Symphony, by international ensembles on tour and by talented students.

Theatre

The Theatre Program, through its drama productions, is one of the most active student enterprises on campus. All AUC students, theatre majors as well as students from all departments are encouraged to participate. Under the guidance of the Theatre faculty, students from all nationalities act and occasionally design and direct several productions a year ranging from classics to modern experimental theatre. Students also play a major role in constructing sets, costumes, lighting, sound, and make up. Recent plays include Shakespeare's *Macbeth*, Feydeau's *A Silly Goose*, Pirandello's *Six Characters in Search of an Author*, Farag's Sulayman El Halabi, Sophocles' *Antigone* and Ibsen's *Ghosts*. Productions in English and Arabic. Plays take place in two new state-of-the-art theatres in the Falaki Academic Center.

Films

Films are a favorite form of recreation at AUC and several university units organize regular showings.

Student Publications

Caravan, the student newspaper, is published weekly, in English and in Arabic, and distributed on campus without charge. It is both a learning laboratory for journalism and mass communication students who receive some academic credit for participation, and a co-curricular activity open to participation by reporters, photographers, and students with writing skills or artistic talent from the student body at large. Over the years many Caravan alumni have become professional journalists in Egypt, elsewhere in the Middle East, and in the West. Faculty advisors guide all student publication activities, including the *Dimensions*, the *Independent Newspapers*, and other clubs/conferences magazines.

Counseling and Mental Health

The Student Counseling Center promotes and encourages wellness and healthy work life balance through individual counseling, assessment and workshops for AUC students. SCC services facilitate student intellectual, emotional and social growth by increasing self-awareness, improving learning ability, assisting with setting personal goals, meeting and resolving personal challenges and applying new behaviors in day-to-day interaction.

All students are expected to possess the mental stamina and stability required to undertake an academic program. Students with chronic mental health issues should inform the SCC of their needs.

The SCC observes strict professional standards of confidentiality essential for the development of trust. No information is disclosed to any other party without the student's written consent.

The university physician and counselors refer students to professional help outside the university when necessary.

86 Undergraduate

Food Service

The New Cairo campus food service is delivered in a variety of ways. The campus center is home to the food court offering various types of meals, and to the faculty lounge. There are food vendor carts around campus that offer fresh drinks and salads. HUSS, the administration building and the Mostafa Core Academic Center each have a food outlet and coffee shops are plentiful throughout the campus. Catering for special events is available.

International Student Affairs

The office of International Student Affairs (ISA) promotes student learning and intercultural understanding and responsibility. Through programs and services, ISA assists over 1100 international students from over 70 countries around the world. ISA staff and active AUC student leaders serve as critical facilitators in the intercultural educational experience. ISA offers integrated student services to the international undergraduate, graduate and intensive Arabic language students. In addition to a comprehensive orientation program, ISA provides day-to-day non-academic advising on a broad range of international student issues such as financial, social psychological and cultural concerns. To facilitate adjustment to Egypt, ISA publishes, *The International Student Handbook*, facilitates panel discussions, and the faculty mentor program. Cultural activities include International Day, Ramadan Around the World and International Student Coffee Hour.

Medical Service

The university clinic, staffed with the university physician, trained doctors and nurses, is open every day, except for Fridays and Saturdays, to provide medical services. The clinic is open from 8:00 a.m. till 5:00 p.m. For further information regarding the AUC clinic, you can access the clinic's Web site <http://www.aucegypt.edu/services/medical/Pages/default.aspx>

The university provides limited accident insurance for all students while they are on the campus or engaged in certain university activities. The student must pay medical costs beyond the provisions of this insurance. International students are required to have health-insurance coverage.

Orientation

All new students are required to attend the University orientation program held the week before the start of classes. Special orientation programs or sessions are available for new graduate students, undergraduate student, language intensive students and non-degree students. Orientation provides the information and tools needed to transition successfully to the AUC community.

Student Conduct and Academic Integrity

The American University in Cairo is a guest in Egypt with a purely educational mission. It encourages open inquiry and examination of all intellectual subjects. Both its curriculum and extracurricular activities are dedicated to helping produce informed and independently minded human beings. But as a matter of basic policy AUC carefully refrains from involvement in

Undergraduate Student Life 87

political or religious matters, and it does not permit its campus or facilities to be used by outsiders, by AUC personnel, or students for such involvement. The AUC Board of Trustees does not take positions on political or religious matters, nor are any AUC bodies or entities permitted to do so. The university approves humanitarian assemblies, provided authorized procedures are followed. (See The University Policies on Student Expression)

Students who attend the university are expected to show concern for each other, for their teachers, and for the university itself. Student behavior is expected to be appropriate to life at an academic institution and to take into account Egyptian society and traditions. Rules of student conduct, intended to perpetuate and reinforce these policies, are explained more fully in the Student Success Handbook and Planner.

Because of the importance of maintaining the complete integrity of its academic work and of ensuring that AUC remains a purely academic apolitical institution, respected in the community at large and maintaining its liberal education atmosphere, the university views the following violations of AUC policy with particular seriousness:

- I. Cheating (see Academic Integrity Policy under Academic Regulations section).
- II. Involvement in political or religious issues or activities on the campus or in the dormitory or the instigation of such unauthorized activities.
- III. Behavior that disturbs university functions and activities.
- IV. Participation in any illegal activity, on or off campus.

Students who violate standards of conduct, particularly those mentioned above, may be subject to disciplinary action, including dismissal. All cases of Academic Integrity should be reported to the Academic Integrity Committee (AIC) at the Provost Office. All non-academic misconduct cases should be reported to the Chair of the Student Disciplinary Committee. The committee's recommendation, based on investigation of the case (see Student Success Handbook and Planner), is submitted to the Vice President for Student Affairs, who is the final authority.

All violations related to student activities should be reported to the Student Judicial Board SJB. Unresolved cases and clarifications of university policies and procedures will be referred to the Student Organization Legislative and Judicial Committee SOLJC for further investigations. Similar to the Student Disciplinary Committee, final recommendations of the SOLJC are submitted to the Vice President for Student Affairs, who has the final authority.

Student Housing

The Office of Residential Life administers student housing at AUC. Two residence facilities – Zamalek and New Cairo – provide accommodation for students. The Zamalek residence houses 350 students and is located in one of downtown Cairo's most popular residential districts - Zamalek. It is an island slightly northwest of central Cairo; an urban up-scale area with a large cosmopolitan population. It is approximately 38 kilometers, or 23 miles, from New Cairo campus. The residence in New Cairo is part of campus with close proximity to classes and university life for 480 students. New Cairo is a new development comprising 46,000 acres of land with a projected population of 2.5 million people. Males and females live in separate sections of the residences. Both facilities are air-conditioned, and have housekeeping services, high-speed internet connection, 24 hour security, and clinical services. An AUC physician has

88 Undergraduate

clinical hours at the Zamalek residence and the clinic is located on campus at the Campus Center. Living in the student housing provides not only a comfortable and secure environment. Residing in either Zamalek housing or on campus, students meet students from all over the world. The multicultural living environment AUC offers is a unique opportunity for learning and growth.

For more information about the AUC residences, visit
<http://www.aucegypt.edu/students/reslife/Pages/default.aspx>

The Core Curriculum

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

90 Undergraduate

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 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. In other words, courses may not be double-counted for both Core Curriculum and major credit. However, 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.

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; 201, 202 or 203).

Category 3: Information Literacy

LALT 101 (non-credit)

Category 4: Fundamental Intellectual Skills Requirement (6 credit hours)

PHIL 220 Philosophic Thinking
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 & SCI150	Essentials of Environmental Biology
BIOL 103	Introductory Biology
BIOL 104	Unity of Life
BIOL 105	Diversity of Life
CHEM 103 & SCI 150 Lab	Chemistry and Society (for students with no chemistry background)
CHEM 104 & SCI 150 Lab	Man and Environment
CHEM 105 & SCI 150 Lab	General Chemistry I
PHYS 100 & SCI 150 Lab	Physics for Poets (for students with no physics background)
PHYS 199 & SCI 150 Lab	Future of Life on Earth and beyond
SCI 105 & SCI 150 Lab	Science and Technology of Ancient Egypt
SCI 109 & SCI 150 Lab	Exploration of the Universe
SCI 140 & SCI 150 Lab	Chemistry, Art and Archaeology
SCI 250 & SCI 251 Lab	Introductory Geology

92 Undergraduate

MACT 112 & SCI 150 Lab	Statistical Reasoning
MACT 199 & SCI 150 Lab	Selected Topics in Quantitative Thinking

Category 6: Humanities or Social Sciences (3 credit hours)

(Choose one course from the two sub categories: humanities or social sciences)

Sub-Category 1: Humanities Option

ARIC	100	Arabs and Muslims Encountering the Other
ARIC	101	Children's Literature and Cultural Representations
ARIC	199	Selected Topics in the Humanities
ARTV	199	Selected Topics in the Humanities
CREL	135	Dimensions of the Sacred: Exploring Religious Experience
ECLT	123	Experiencing Creativity: Texts and Images
ECLT	199	Selected Topics in the Humanities
FILM	199	Selected Topics in the Humanities
HIST	110	World Cultures
HIST	111	Big History
HIST	112	Truth or Fiction: History and Historical Fiction
HIST	114	A History of Modern Imperialism
HIST	122	Words that made History: Great Speeches of the Twentieth Century
HIST	123	Family in the Modern Middle East
HIST	124	Eve and the Serpent: Witches and Witchcraft in Modern History
HIST	199	Selected Topics in the Humanities
MUSC	199	Selected Topics in the Humanities
PHIL	100	Reading Philosophy
PHIL	199	Selected Topics in the Humanities
RHET	199	Selected Topics in the Humanities
SEMR	111	The Human Quest: Exploring the "Big Questions"
SEMR	112	Who Am I?: Explorations in Consciousness and Self Across the Disciplines
SEMR	123	Celebrating Ideas: A Voyage Through Books, Art, Film and Theatre
THTR	130	The World of the Theater
THTR	199	Selected Topics in the Humanities

Sub-Category 2: Social Science Option

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 Topics in the Social Sciences
ECON	199	Economics for Everyone
EGPT	199	Selected Topics in the Social Sciences
POLS	101	Introduction to Political Science
POLS	199	Selected Topics in the Social Sciences
PSYC	199	Selected Topics in the Social Sciences

SOC 199 Selected Topics in the Social Sciences

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	Introduction of Islamic Art and Architecture I
ARIC	271	Introduction of Islamic Art and Architecture II
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	Introduction to Islam
ARIC	336	Studies in Ibn Khaldun
ARIC	337	Shi'i Muslims in History
ARTV	200	Foundations of Design and Color
ARTV	211	World Art History Survey I
ARTV	212	World Art History Survey II
ARTV /CENG	222	Architecture: Art of Engineering
ARTV	299	Special Topics in the Humanities
ARTV	310	Modern and Contemporary Art
ARTV	314	Modern and Contemporary Architecture
ARTV	370	Personal and Political Contemporary Art and Video Art Theory
ARTV	370	The Body as Concept, Material and Representation
ARTV	370	Photography: History and Critique
ARTV	370	Art as Critical Practice
CREL	299	Special Topics in the Humanities
ECLT	200	Introduction to Literature
ECLT	201	Survey of British Literature
ECLT	202	Global Literature in English
ECLT	299	Special Topics in the Humanities
FILM	220	Introduction to Film
FILM	299	Selected Topics in the Humanities
HIST	200	Introduction to History Theory and Methodology
HIST	203	Western Civilization from Antiquity to the Middle Ages
HIST	204	Early Modern Europe

94 Undergraduate

HIST	205	Europe in the Age of Revolution and Reform (1789-1914)
HIST	211	History in the Making
HIST/CREL	212	The Quest for the Historical Jesus
HIST	299	Selected Topics in the Humanities
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 1: Music Theory in the Western Tradition
MUSC	299	Selected Topics in the Humanities
PHIL	221	Informal Logic
PHIL	224	Self and Society
PHIL	226	Philosophy and Religion
PHIL	230	Introduction to Ethics
PHIL	299	Selected Topics in the Humanities
PHIL	344	Literature and Philosophy
RHET	225	Public Speaking
RHET	299	Selected Topics in the Humanities
RHET	323	Writing in the Humanities
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: Advanced Style
THTR	203	The Art of the Theatre
THTR	230	Play Analysis
THTR	299	Selected Topics in the Humanities
THTR	350	Survey of Dramatic Literature
THTR	351	History of Theatre
THTR	360	Play Writing I
THTR	361	Play Writing II
SEMR	200	Core Seminar
SEMR	299	Selected Topics for 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 Topics in the Social Sciences
ARIC	323	Marriage and the Family in the Medieval and Early Modern Middle East
ARIC	324	Non-Muslim Communities in the Muslim World
ARIC	325	On the Fringes of Society: Marginals in History
ECON	201	Introduction of Macro Economics
ECON	202	Introduction of Micro Economics
EGPT	202	Ancient Egypt
EGPT	299	Selected Topics in the Social Sciences
LING	252	Introduction to Linguistics

LING	268	Principles of Practice of teaching English
PADM	299	Selected Topics in the Core Curriculum
PADM	308	Management of Government
PHIL	242	Philosophical Anthropology
PHIL	234	Philosophy of the Social Sciences
PSYC	201	Introduction to Psychology
PSYC	299	Selected Topics in the Social Sciences
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/PSYC/ANTH	240	Introduction to Community Organization and Development
SOC	299	Selected Topics in the Social Sciences

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//SOC	210	Arab Society
ANTH	312	Peoples and Cultures in the Middle East and North Africa
ANTH	390	Selected People and Culture Areas (when appropriate)
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/HIST	246	Survey of Arab History
ARIC	299	Special Topics in Arabic Literature
ARIC	299	Special Topics in Arab History
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 Cultural History of the Middle East, A.D. 600-1800
ARIC	322	Land, Trade and Power: A History of Economic Relations in the Middle East, A.D. 600-1800
ARIC	343	Birth of Muslim Community and Rise of the Arab Caliphates
ARIC/HIST	344	Caliphs and Sultans in the Age of Crusades and Mongols
ARIC/HIST	345	Gunpowder Empires: Ottomans, Safavids and Mughols

96 Undergraduate

ARIC/HIST	355	State and Society in the Middle East, 1699 – 1914
ARIC/HIST	357	Selected Topics in Middle East History
CREL	299	Selected Topics for the Core Curriculum
ECON	215	Economic History of the Modern Middle East
HIST	247	Making of the Modern Arab World
HIST	299	Selected Topics in Arab History
HIST	330	Urban Landscapes in the Modern Middle East / North Africa
HIST	331	History of Palestine/Israel
HIST/CREL	333	Zionism and Modern Judaism
MUSC	342	Understanding Arab Music
SOC	203	Social Problems of the Middle East
SOC	206	Arab Family Structure and Dynamics
SOC/PSYC/ANTH	240	Introduction to Community Organization and 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 in the Core Curriculum
ANTH	302	Kin and Family in the Global World
ANTH	320	States, Capital and Rural Lives
ANTH/LING	352	Language in Culture
ANTH	360	Gender, Society and Social Change
ANTH	372	Applied Anthropology
ANTH	382	Peoples and Cultures of Sub-Saharan Africa
ANTH	384	Peoples and Cultures of Latin America
ANTH	386	Peoples and Cultures of Asia
ANTH	390	Selected People and Cultures Areas
ARIC	299	Special Topics for the Core Curriculum
ARIC	345	Gundpowder Empires: Ottomans, Safavids and Mughols
CREL/HIST	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 the Core Curriculum
CREL	320	Masters, Saints & Saviors: Sacred Biography in the World's Religions
ECLT/HIST	209	Introduction to American Studies
ECLT	299	Selected Topics for the 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	The Orient in Western Imagination
ECLT	353	Modern Drama, Illusionary Worlds, False Identities

The Core Curriculum 97

ECON	224	Economic History
HIST	201	History of American Civilization to the Nineteenth Century
HIST	202	History of Modern American Civilization
HIST/POLS	206	Global Politics in the 20th Century
HIST	207	World History
HIST	225	East Asian History
HIST	299	Selected Topics for the 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 1: Music Theory in the Western Tradition
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	Our Political World
RHET	341	Travel Writing
SEMR	310	Cross-Cultural Perceptions and Representations
SOC/ANTH	303	Social Movements
SOC/POLS	304	Development Agencies
SOC	306	Sociology of Literature
SOC	307	Social Class and Inequality
SOC/ANTH	321	Urban Society in Transition
SOC	322	Rural Sociology
SOC	323	Fundamentals of Population Studies
SOC/ANTH	332	Social Constructions of Difference: Race, Ethnic and Class
SOC/ANTH	370	Environmental Issues in Development

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	490/491	Senior Project I/II
* ANTH/PSYC/SOC	440/441	Practicum in Community and Social Development
* ANTH/SOC	422-01	Religion in a Global World
* ANTH/SOC	460	Development Studies Seminar
* ANTH/SOC	495-01	Senior Seminar
ARTV	317	Teaching Kids Art

98 Undergraduate

*ARTV	470	Advanced Seminar
*BIOL	495/496	Senior Research Thesis
*CENG	490/491	Senior Project I/II
*CHEM	495	Senior Thesis and Seminar
*CSCE	491/492	Senior Project I/II
*CSCI	491/492	Senior Project I/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	The Politics of Writing in Middle East
ECLT	447	Literature and Human Rights
*ECON	308	Labor Economics
*ECON	411	Seminar: Special Topics in Economics
*ECON	415	Seminar on Economic Development on the Middle East
*EENG	490/491	Senior Project I/II
**EGPT	440	Ancient Egyptian Religion and Ethics
**EGPT	499	Selected topics
ENGR	494	Entrepreneurial Development and Innovation
HIST	401	Selected topics in World 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	454	Modern Movements in Islam
*JRMCI	425	Integrated Marketing Communication Campaigns Capstone
*JRMCI	480	Multimedia Reporting Capstone
*JRMCI	482	Media Convergence Capstone
*MACT	495	Senior Thesis
*MACT	497	Practical Internship
*MENG	490/491	Senior Project I/II
*MGMT	413	Entrepreneurship and Small Business Management
*MGMT	480	Business Planning and Strategy
*MKTG	480	Marketing Strategy
MKTG	492	Capstone Final Recital
*PENG	490/491	Senior Project I/II
**PHIL	410	Advanced Seminar in Aesthetics
*PHIL	418	Philosophical Masterpieces
*PHIL	420	Philosophical Figures
*PHYS	401	Senior Thesis and Seminar
*POLS	430	Seminar: Special Topics in Political Science
*PPAD	490	Practicum
*PSYC	302	Personal Growth and Adjustment
*PSYC	430	Advanced Community Psychology: Applied 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	Imaging the Book

* RHET	480	Research and Writing Internships
* RHET	490	Advanced Scientific and Technical Communication
SEMR	300	Core Honors Seminar: Values, Activism and the New Egypt
SEMR310/POLS	430	Cross-Cultural Perceptions and Representations
* THTR	490	Senior Thesis
**THTR	495	Senior Honors Project

- All prerequisites apply
- ** by instructors permission

Core Curriculum Seminar Course Descriptions (SEMR)

SEMR 111 The Human Quest: Exploring the “Big Questions” (3 cr.)

This is an interdisciplinary survey course aimed at helping new undergraduate students acquire an attitude of engaged curiosity, a widened worldview, and enhanced self expression as they begin to discover how a university education can help them find their places in the world. Using an interdisciplinary approach combining geography, history, biology, political science, anthropology, sociology, literature, and the arts, it aims to introduce students to the process of raising and exploring life’s enduring “Big Questions,” through readings, music, debates, films, and technology, and thus they acquire some of the knowledge, skills, and attitudes needed by a university student in the 21st century.

SEMR 112 “Who Am I?”: Explorations in Consciousness and Self Across the Disciplines” (3 cr.)

Self-awareness allows us to perceive both limits and possibilities. This course will be a practical and theoretical exploration of different approaches to consciousness and the self in the sciences, psychology, philosophy and religion, among others.

SEMR 123 Celebrating Ideas: A Voyage Through Books, Film, Art and Theater (3 cr.)

This course aims at exposing students to a wide range of key landmarks in human intellectual and cultural development. This is achieved through reading a number of texts, each important, simulating, often groundbreaking and discussing the ideas and concepts embodied in these texts. The topics and themes raised through the readings will be further explored and enhanced through exposure not just to the written word but through film, art and theater, all modes in which humankind has been able to express its intellectual development and creative energy.

SEMR 200 Core Seminar (3 cr.)

SEMR 299 Selected Topics in the Humanities (3 cr.)

SEMR 300 Core Honors Seminar (3 cr.)

SEMR 310 Cross-Cultural Perceptions and Representations (3 cr.)

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

100 Undergraduate

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.



Undergraduate Degree Programs

102 Undergraduate

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.

The departmental prefixes used in labeling courses are given below:

Accounting	ACCT	History	HIST
American Studies	AMST	International Business	INTB
Anthropology	ANTH	Journalism & Mass Communication	JRMC
Arabic Language Credit Courses	ALNG	Linguistics	LING
Arabic Language Intensive	ALIN	LL.M. in International & Comparative Law	LAW
Arabic Language Intensive Summer	ALIS	Management	MGMT
Arab & Islamic Civilizations	ARIC	Management of Information Systems	MOIS
Arabic Writing Courses	ALWT	Marketing	MKTG
Architectural Engineering	AENG	Mathematics and Actuarial Science	MACT
Art	ARTV	Mechanical Engineering	MENG
Biology	BIOL	Middle East Studies	MEST
Biotechnology	BIOT	Migration & Refugee Studies	MRS
Center for Arabic Studies Abroad	CASA	Music	MUSC
Chemistry	CHEM	Nanotechnology	NANO
Comparative Religion	CREL	Operations Management	OPMG
Computer Science	CSC	Petroleum & Energy Engineering	PENG
Construction Engineering	CENG	Philosophy	PHIL
Core Curriculum	SEMR	Physics	PHYS
Economics	ECON	Political Science	POLS
Education	EDUC	Production/Operation Management	OPMG
Egyptology	EGPT	Psychology	PSYC
Electronics Engineering	EENG	Public Policy & Administration	PPAD
Engineering	ENGR	Rhetoric & Composition	RHET
English	ENGL	Robotics	RCSS
English & Comparative Literature	ECLT	Science	SCI
Environmental Engineering	ENVE	Sociology	SOC
European Studies	EUST	Sociology/Anthropology	SOC/ANTH
Film	FILM	Teaching Arabic as a Foreign Language	TAFL
Finance	FINC	Teaching English as a Foreign Language	TEFL
Gender & Women's Studies	GWST	Theatre	THTR

Not all departmental prefixes represent fields in which a degree is offered; some represent minors and others only courses.

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.

Fields of Undergraduate Study

This section lists the fields of undergraduate study that are currently offered at the American University in Cairo. Entries under fields of study in which a degree is offered include faculty names, introduction to the field, objectives and main features of the degree, requirements for the degree, as well as a listing of courses and their description.

104 Undergraduate

Accounting

Department of Accounting
School of Business

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

Bachelor of Accounting (BAC)

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
 1. 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.)

106 Undergraduate

ACCT 402 - Special Topics in Tax Accounting (3 cr.)
 ACCT 403 - Contemporary Issues in Accounting (3 cr.)

Electives (3-15 credits)

Minor in Accounting

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.)

Courses

Enrollment in courses is limited, and priority is given to students seeking 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.

Accounting (ACCT)

ACCT 201 Financial Accounting (3 cr.)

Offered in fall and spring.

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.

ACCT 202 Managerial Accounting (3 cr.)

Prerequisites: ACCT 201. Offered in fall and spring.

Accounting 107

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.

ACCT 301 Intermediate Accounting I (3 cr.)

Prerequisites: ACCT 201 and MACT 112. Offered in fall and spring.

An in-depth coverage of accounting valuation processes, accounting income measurement, and disclosure issues in financial reports.

ACCT 302 Intermediate Accounting II (3 cr.)

Prerequisites: ACCT 301. Offered in fall and spring.

A continuation of Intermediate Accounting I (ACCT 302), focusing on the liabilities and equity sections in various types of ownership.

ACCT 303 Advanced Accounting (3 cr.)

Prerequisites: ACCT 302. Offered in fall and spring.

Specialized topics in partnership accounting, agency and branch accounting, mergers and acquisitions, consolidated statements, fiduciary accounting, fund and nonprofit accounting.

ACCT 304 Cost Accounting (3 cr.)

Prerequisites: ACCT 202. Offered in fall and spring.

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.

ACCT 305 Auditing (3 cr.)

Prerequisites: ACCT 302. Offered in fall and spring.

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.

ACCT 306 Principles of Taxation (3 cr.)

Prerequisites: ACCT 302 and MGMT 311. Offered in fall and spring.

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.

ACCT 401 Contemporary Issues in Auditing (3 cr.)

Prerequisites: ACCT 305. Offered in spring.

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.

ACCT 402 Special Topics in Tax Accounting (3 cr.)

Prerequisites: ACCT 306. Offered in spring.

Practical and theoretical training in the more common and important provisions of the tax

108 Undergraduate

codes. Tax case research and preparation are emphasized.

ACCT 403 Contemporary Issues in Accounting (3 cr.)

Prerequisites: Graduating Senior. Offered in fall and spring.

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.

ACCT 470 Special Topics in Accounting (3 cr.)

Prerequisites: Consent of Instructor. Offered occasionally.

Considers selected topics of current relevance in Accounting.

ACCT 475 Independent Study in Accounting (1-3 cr.)

Prerequisites: Senior standing and consent of ACCT unit head and chair. Offered occasionally.

Guided readings, research, and discussions on specific selected topic in Accounting.

American Studies

**Prince Alwaleed Bin Talal Bin Abdulaziz Alsaud Center
for American Studies and Research
School of Global Affairs and Public Policy**

Director: M. Shahin

Professors: A. Schleifer, A. Lesch, J. Edwards, D. Tschirgi, M. Shahin

Associate Professors: D. Blanks, J. Bremer, H. Rizzo, R. Switzer, F. Bradley

Assistant Professor: B. Comer, B. Curling, C. Davidson, E. Tooma, I. Dworkin, M. McCombie, M. Monforte

Lecturer or Instructor: T. Warren

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.)*

ANTH 400 - Selected Topics in Anthropology (3 cr.)*

ARTV 310 - Modern Art (3 cr.)

ARTV 370 - Selected Topics in Art (3 cr.)*

ECLT 308 - Modern European and American Literature (3 cr.)

ECLT 310 - American Literature to 1900 (3 cr.)

ECLT 311 - Modern American Literature (3 cr.)

ECLT 344 - Literature and Philosophy (3 cr.) *

ECLT 347 - Selected Topics (3 cr.) *

ECLT 540 - Readings in American Literature (3 cr.) *

ECLT 545-546 - Selected Topics (3 cr.) *

FILM 370 - Selected Topics in Film (3 cr.)*∞

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.)

110 Undergraduate

- MUSC 370 - Selected Topics in Music (3 cr.) *
- 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.) *
- POLS 473 - Special Topics in Public Law (3 cr.) *
- SOC 307 - Social Class and Inequality (3 cr.) *
- SOC 321 - The Urban Experience (3 cr.) *
- SOC 332 - Social Constructions of Difference: Race, Ethnicity, and Class (3 cr.) *
- SOC 400 - Selected Topics in Sociology (3 cr.) *
- SOC 402 - Independent Study (3 cr.) *
- SOC 405 - Sociology of Work (3 cr.) *
- SOC 408 - Criminology (3 cr.) *
- THTR 370 - Selected Topics in Theatre (3 cr.) *

Notes:

* When instructor and the Dean of GAPP deem course content appropriate
with permission of the instructor

See departmental announcements or AUC Catalog entries under departmental headings for complete course descriptions.

American Studies Courses (AMST)

AMST 199 Selected Topics for Core Curriculum (3 cr.)

Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

AMST 299 Selected Topics for Core Curriculum (3 cr.)

Prerequisites: RHET 101.

Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

Anthropology

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

Professor Emeritus: D. Cole, N. Hopkins

Professor: S. Altorki

Assistant Professors: H. Sabea, M. Tabishat, M. Westmoreland

Post-Doctoral: J. Hill

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:

112 Undergraduate

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.)*
- ANTH 311 - Contemporary Anthropological Theory (3 cr.)*
- ANTH 380 - Fieldwork Methods (3 cr.)
- ANTH 495 - Senior Seminar (3 cr.)*

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

* 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.

Anthropology 113

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/ANTH/PSYC 240 - Introduction to Community Development (3 cr.)
- SOC/ANTH/PSYC 340 - Participatory Action Research in Community Settings (3 cr.)
- 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/SOC 303 - Social Movements (3 cr.)
- ANTH/SOC 370 - Environmental Issues in Egypt (3 cr.)
- ANTH 372 - Applied Anthropology (3 cr.)
- ANTH 380 - Fieldwork Methods (3 cr.)
- ANTH/SOC 450 - Third World Development (3 cr.)
- ANTH/SOC 460 - Development Studies Seminar (3 cr.)
- PSYC/SOC 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.)

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.

Anthropology Courses (ANTH)

ANTH 199 Selected Topic for Core Curriculum (3 cr.)

Course addressing broad intellectual concerns and accessible to all first-year students as part of the Primary Level Core.

114 Undergraduate

ANTH 202 Cultural Anthropology (3 cr.)

Offered in fall and spring.

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.

ANTH 210 Arab Society (3 cr.)

Same as SOC 210. Offered in fall and spring.

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.

ANTH 240 Introduction to Community Development (3 cr.)

Same as PSYC/SOC 240. Offered in fall.

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.

ANTH 299 Selected Topic for Core Curriculum (3 cr.)

Prerequisites: ECLT 101. Offered occasionally.

Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

ANTH 302 Kin and Family in a Global World (3 cr.)

Prerequisites: ANTH 202. Offered in alternate years.

Transformation of family and kin structures and relations in present-day globalization. Impacts of urbanization, international migration, consumerism, economic and other factors on families and kin groups. Why and how people legitimize their kin relationships in the eyes of their community, their state, and their religion, and how different family structures are tied to naturalizing certain forms of power. Comparative perspectives from the Middle East and other world areas.

ANTH 303 Social Movements (3 cr.)

Same as SOC 303. Offered in spring.

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.

ANTH 309 History of Social Theory (3 cr.)

Same as SOC 309. Prerequisites: 9 of social sciences and junior or senior standing, or consent of instructor. Offered in fall.

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.

ANTH 310 Contemporary Sociological Theory (3 cr.)

Same as SOC 310. Prerequisites: ANTH/ SOC 309 or consent of instructor. Offered in spring. The main trends, basic problems, and unresolved issues of postwar sociological thought. Essential aspects of the logic of scientific inquiry; contemporary theories as model building in sociology including new functionalism, critical theory, structuralism and post-structuralism.

ANTH 311 Contemporary Anthropological Theory (3 cr.)

Offered in spring. Prerequisites: ANTH/SOC 309 or consent of instructor. 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.

ANTH 312 Peoples and Cultures of the Middle East and North Africa (3 cr.)

Offered in fall and spring. 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.

ANTH 320 States, Capital and Rural Lives (3 cr.)

Offered in alternate years. 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.

ANTH 321 The Urban Experience (3 cr.)

Same as SOC 321. Prerequisites: 6 of Social Sciences and sophomore standing. Offered in spring. 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?

ANTH 332 Social Constructions of Difference: Race, Ethnicity, and Class (3 cr.)

Same as SOC 332. Prerequisites: 6 hours of Social Sciences and sophomore standing. Offered occasionally. 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.

116 Undergraduate

ANTH 340 Participatory Action Research in Community Settings (3 cr.)

Same as PSYC/SOC 340. Prerequisites: ANTH/PSYC/SOC 240 or consent of the instructor. Offered in spring.

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.

ANTH 341 Anthropology and Film (3 cr.)

Same as FILM 341. Prerequisites: ANTH 202. Offered occasionally.

The history and practice of film in anthropology; film as ethnography; comparison of films and analytical ethnographies.

ANTH 352 Language in Culture (3 cr.)

Same as LING 352. Offered occasionally.

The role played by language in humankind's symbolic relation to the world. Emphasis on linguistic analysis, ethno-semantics, sociolinguistics, expressive speech and language and socialization as these elucidate patterns of cognitive orientation.

ANTH 360 Gender, Power and Social Change (3 cr.)

Prerequisites: ANTH 202 or consent of instructor. Offered in alternate years.

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.

ANTH 370 Environmental Issues in Egypt (3 cr.)

Same as SOC 370. Offered in alternate years.

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.

ANTH 372 Applied Anthropology (3 cr.)

Offered in alternate years.

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.

ANTH 380 Fieldwork Methods (3 cr.)

Prerequisites: ANTH 202 and 6 credit of social sciences. Offered in fall and spring.

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.

ANTH 382 Peoples and Cultures of Sub-Saharan Africa (3 cr.)

Offered in alternate years.

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.

ANTH 384 Peoples and Cultures of Latin America (3 cr.)

Offered in alternate years.

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.

ANTH 386 Peoples and Cultures of Asia (3 cr.)

Offered in alternate years.

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.

ANTH 390 Selected People and Culture Areas (3 cr.)

Offered occasionally.

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. May be taken for credit more than once if content changes.

ANTH 400 Selected Topics in Anthropology (3 cr.)

Prerequisites: 9 hours of social sciences, and junior or senior standing. Offered occasionally.

Topics to be chosen according to specific interest, such as: agrarian transformation, desert development, sex roles, cognitive anthropology, anthropology and education; nationalism, colonialism and post-colonialism; tourism in social science; and anthropology of the city. May be taken for credit more than once if content changes.

ANTH 402 Independent Study (1-3 cr.)

Prerequisites: a minimum B average, consent of the instructor, and approval by the unit head and the department chair. Offered in fall and spring.

In exceptional circumstances some senior majors with departmental approval may arrange to study beyond the regular course offerings. May be repeated for credit more than once if content changes.

ANTH 407 Psychological Anthropology (3 cr.)

Same as PSYC 407. Prerequisites: 6 hours of anthropology, 6 hours of psychology, and junior or senior standing. Offered occasionally.

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.

ANTH 422 Religion in a Global World (3cr.)

Same as SOC 422 and EGPT 546. Prerequisites: 9 hours of social sciences and junior or senior standing. Offered in fall.

118 Undergraduate

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.

ANTH 425 Women, Islam and the State (3 cr.)

Prerequisites: 6 hours of anthropology and/or sociology or consent of the instructor. Offered annually.

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.

ANTH 440-441 Practicum in Community Development (6 cr.)

Same as SOC/PSYC 440441. Prerequisites: ANTH/PSYC/SOC 240 and 340. Offered in fall (440) and spring (441).

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.

ANTH 445 Selected Topics in Coptic Studies (3 cr.)

Same as ARIC, EGPT, HIST, SOC 445. Offered in fall.

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.

ANTH 450 Third World Development (3 cr.)

Same as SOC 450. Prerequisites: 9 hours of social sciences and junior or senior standing. Offered in fall and spring.

Contemporary theories of development as they apply to and illuminate the problems of development in underdeveloped countries. The approach will be interdisciplinary.

ANTH 455 Seminar in African Studies (3 cr.)

Same as SOC 455. Prerequisites: Junior or Senior standing and consent of the instructor. Offered occasionally.

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.

ANTH 460 Development Studies Seminar (3 cr.)

Same as ECON/POLS/SOC 460. Prerequisites: 12 hours of social science. Offered occasionally.

Anthropology 119

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.

ANTH 462 Economic Anthropology (3 cr.)

Prerequisites: 9 hours of social sciences and junior or senior standing.

Offered in alternate years.

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.

ANTH 492 Political Anthropology (3 cr.)

Prerequisites: 6 hours of anthropology or political science, and junior or senior standing.

Offered in alternate years.

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 subjectivity. There is an emphasis on theoretical perspectives.

ANTH 495 Senior Seminar (3 cr.)

Same as SOC 495. Prerequisites: SOC 381 or ANTH 380 and senior standing or consent of the instructor. Offered in spring.

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. The student will be required to write a methodologically sound senior paper, preferably based on field research.

120 Undergraduate

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,

Professors: N. Hanna (Chair), B. O'Kane, M. Serag, M. Mikhail, S. Mehrez, S. Fadl

Associate Professor Emeriti: E. Sartain, H. Lutfi

Associate Professors: E. Fernandes, N. El Naggat, M. Birairi, H. Hammoudah

Assistant Professors: A. ElBindary, C. Gomez, S. Ahmad, E. Kenney

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 in Arabic Studies

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

Arab and Islamic Civilizations 121

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):

122 Undergraduate

- 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 - Society and State 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.

Arab and Islamic Civilizations 123

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:

1. ARIC 270-271 - Introduction to Islamic Art and Architecture (3 cr. per semester)
2. 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 310 - Modern Art (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.)

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

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.)

124 Undergraduate

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.)

Arab and Islamic Civilizations 125

ARIC 354 - Islamic Philosophy (3cr.)

ARIC 454 - Modern Movements in Islam (3 cr.)

ARIC 463 - Selected Topics in the History of Islamic Thought and Institutions (3cr.)

Arab and Islamic Civilizations Courses (ARIC)

ARIC 100 Arabs and Muslims Encountering the Other (3 cr.)

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.

ARIC 101 Children's Literature and Cultural Representations (3 cr.)

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.

ARIC 199 Selected Topic for Core Curriculum (3 cr.)

Selected topic in Arab Islamic history for the core curriculum.

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

Offered in fall and spring.

An introduction to the classical Arabic literary tradition through readings of major texts. Thanawiya 'Amma or placement examination. Taught in Arabic.

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

Offered in fall and spring.

An introduction to the literature of the nineteenth and twentieth centuries through readings of major texts. Thanawiya 'Amma or placement examination. Taught in Arabic.

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

Offered in fall and spring.

An introduction to the classical Arabic literary tradition through readings of major texts. Taught in English, with assigned texts in English translation.

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

Offered in fall and spring.

An introduction to the literature of the nineteenth and twentieth centuries through readings of major texts. Taught in English, with assigned texts in English translation.

ARIC 205 Islamic Architecture, from the Beginnings to the Present Day (3 cr.)

An overview of Islamic architecture from Spain to India from the 7th century to the present.

126 Undergraduate

Major examples of religious and secular architecture, including mosques, madrasas, palaces and caravanserais.

ARIC 206 Art and Architecture of the City of Cairo (3 cr.)

Offered in the fall and spring.

The artistic heritage of Fustat Cairo from 641 A.D. to the present, with emphasis on its urban and architectural development.

Classwork is supplemented by six to eight field trips on Saturday mornings.

ARIC 246 Survey of Arab History (3 cr.)

Same as HIST 246. Offered in fall and spring.

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 historio-graphical 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.

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

Prerequisites: Prerequisite for ARIC 271: ARIC 270, or ARIC 206. Both parts offered each semester. 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.

ARIC 299 Selected Topic for Core Curriculum (3 cr.)

Prerequisites: RHET 101. Offered occasionally.

Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

ARIC 305 Arabic Literature and Gender (3 cr.)

Offered in fall.

Investigates the construction of gender, both masculine and feminine, through readings in a variety of Arabic discourses. Taught in Arabic.

ARIC 306 Arabic Literature and Film (3 cr.)

Offered in fall.

Looks at the intersection between literature and film as two modes of representation. Readings of Arabic literary texts, and in class screenings of films. Taught in Arabic.

ARIC 307 The Writer and the State (3 cr.)

Offered in spring.

Explores the nature of the relationship between writers and authority, in allegiance or in opposition. Taught in Arabic

ARIC 308 Colloquial and Folk Literature (3 cr.)

Offered in spring.

Arabic colloquial and folk literature through the study of various genres. Taught in Arabic.

Arab and Islamic Civilizations 127

ARIC 309 Selected Themes and Topics in Arabic Literature (3 cr.)

Offered occasionally.

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. May be repeated once for credit if content changes. Taught in Arabic.

ARIC 310 Selected Themes and Topics in Arabic Literature in Translation (3 cr.)

Offered in fall and spring.

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. May be repeated once for credit if content changes. Taught in English, with assigned texts in English translation.

ARIC 314 The Arabic Novel (3 cr.)

Offered in alternate years.

Study of different trends in the Arabic novel. In-depth reading of major modern Arab novelists. Taught in Arabic.

ARIC 315 Arabic Drama (3 cr.)

Offered in alternate years.

Study of Arabic drama through readings of major texts. Taught in Arabic.

ARIC 316 The Arabic Short Story (3 cr.)

Offered in alternate years.

Study of the short story as a genre in modern Arabic literature. In-depth reading of major short story writers. Taught in Arabic.

ARIC 319 Islamic Spain and North Africa (711-1492 A.D.) (3 cr.)

Same as HIST 319. 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.

ARIC 320 Introduction to Sufism (3 cr.)

Offered in alternate years.

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.

ARIC 321 Social and Cultural History of the Middle East, 600-1800 A.D. (3 cr.)

Offered in alternate years.

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.

128 Undergraduate

ARIC 322 Land, Trade and Power: a History of Economic Relations in the Middle East, 600-1800 A.D. (3 cr.)

Offered in alternate years.

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.

ARIC 323 Marriage and the Family in the Medieval and Early Modern Middle East (3 cr.)

Offered in alternate years.

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 travelers' accounts, legal works, architecture, deeds of pious foundations, and court records.

ARIC 324 Non-Muslim Communities in the Muslim World (3 cr.)

Offered in alternate years.

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.

ARIC 325 On The Fringes of Society: Marginals in History (3 cr.)

Offered in fall.

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.

ARIC 335 An Introduction to Islam (3 cr.)

Offered in spring.

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.

ARIC 336 Studies in Ibn Khaldun (3 cr.)

Offered in alternate years.

Examination of Ibn Khaldun's work, his place in Arab Muslim thought, and his value as a critic of Muslim culture and institutions.

ARIC 337 Shi'i Muslims in History (3 cr.)

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

Arab and Islamic Civilizations 129

Zaydiyya will also receive due consideration.

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

Same as HIST 343. Offered in fall.

The rise of Islam and Arab expansion, the classical period of Islamic civilization during its first centuries to the period of Abbasid political disintegration.

ARIC 344 Caliphs and Sultans in the Age of Crusades and Mongols (3 cr.)

Same as HIST 344. Offered in alternate years.

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.

ARIC 345 Gunpowder Empires: Ottomans, Safavids and Mughols (3 cr.)

Same as HIST 345. Offered in fall.

The decline of the Mamluks; the Timurids in Persia; the age of gunpowder: the Safavid, Ottoman, and Moghul empires and their decline.

ARIC 353 Muslim Political Thought (3 cr.)

Prerequisites: ARIC 246 or consent of instructor. Offered in Fall and Spring.

The development of political theory in Muslim civilization. Analysis of leading schools and individuals. Source readings in Arabic or in translation.

ARIC 354 Islamic Philosophy (3cr.)

Same as PHIL 354. Prerequisites: ARIC 246 or ARIC 343 or consent of instructor. Offered occasionally.

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.

ARIC 355 State and Society in the Middle East, 1699-1914 (3 cr.)

Same as HIST 355. Offered once a year.

The Ottoman Empire and Iran: continuities and transformations. Imperial administration and relations with Europe. Challenges to the pre-modern order: regional and global economies; social and cultural trends.

ARIC 356 Society and State in the Middle East, 1906-present (3 cr.)

Same as HIST 356. Offered in fall and spring.

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.

ARIC 357 Selected topic in Middle East History (3 cr.)

Same as HIST 357. Offered occasionally.

Focuses on theme or topic in the history of the Middle East. May be repeated for credit when topic changes.

ARIC 368 The Art of the Book in the Islamic World (3 cr.)

Prerequisites: ARIC 270 or 271. Offered in alternate years

130 Undergraduate

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.

ARIC 369 Islamic Pottery (3 cr.)

Prerequisites: ARIC 270 or 271. Offered in alternate years.

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.

ARIC 370 Pre-Islamic Influences on Islamic Art and Architecture (3 cr.)

Prerequisites: ARIC 271. Offered in alternate years.

Near Eastern art forms during 200634 AD. Byzantium, the Mediterranean, Arabia, Syria, and the Copts, Persia and Central Asia, their legacy.

ARIC 371-372 Islamic Architecture in Egypt and Syria (3 cr. per semester)

Prerequisites: ARIC 271. 371. Offered in fall, 372 offered in spring.

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.

ARIC 400 Independent Study (13 cr.)

Open only to senior majors with a minimum of B average.

In exceptional circumstances, some senior majors may, with department approval, arrange to study beyond the regular course offerings. May be repeated for credit if content changes

ARIC 401 Senior Seminar in Arabic Texts (3 cr.)

Offered in fall.

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. May be repeated once for credit if content changes. Taught in Arabic.

ARIC 402 Senior Seminar in Arabic Literature in Translation (3 cr.)

Offered in spring.

A selected theme or topic in Arabic literature, classical or modern, such as francophone and anglophone Arab writers, Andalusian literature, writers and the nation. May be repeated once for credit if content changes. Taught in English, with assigned texts in English translation.

ARIC 403 Arabic Literary Criticism (3 cr.)

Offered in alternate years.

Arabic critical theory from the classical to the modern period. Taught in Arabic.

ARIC 404 Sira, Hadith, and Tafsir (3 cr.)

Offered in fall.

The growth of the biographical literature on the Prophet and its relation to the literature of Hadith and Qur'anic exegesis. Taught in Arabic unless otherwise stated

Arab and Islamic Civilizations 131

ARIC 413-414 Arabic Syntax (Nahw) (3 cr. per semester)

Same as ALNG 413-414. 413 offered in fall, 414 offered in spring.

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 subject by Western scholars.

ARIC 415 Arabic Morphology (Sarf) and Prosody ('Arud) (3 cr.)

Same as ALNG 415. Offered occasionally.

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.

ARIC 417 Special Studies in Arabic Texts (3 cr.)

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. May be repeated once for credit if content changes.

ARIC 425 Linguistics of Arabic (3 cr.)

Same as ALNG 425. Offered in fall.

Development of the linguistic structure of Arabic and the Arabic of the early Islamic era as described by the early Arab phoneticians.

ARIC 426 The Phonetics of Arabic (3 cr.)

Same as ALNG 426. Offered in spring.

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.

ARIC 435 Studies in the Qur'an (3 cr.)

Prerequisites: consent of instructor. Offered in fall.

The greatest work in Arabic and its influence on Arabic literature and Islamic institutions, with emphasis on methods of interpretation and their development.

ARIC 439 Islamic Law (3 cr.)

Prerequisites: consent of instructor. Offered in fall and spring.

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.

ARIC 440 Arabic Historical Literature (3 cr.)

Offered in alternate years.

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.

ARIC 445 Selected Topics in Coptic Studies (3 cr.)

Same as ANTH, EGPT, HIST, SOC 445. Offered in fall.

This course allows instructors to offer a topic in Coptic Studies. The topic will be chosen from

132 Undergraduate

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.

ARIC 451 Islamic Institutions (3 cr.)

Prerequisites: ARIC 246 or 343 or consent of instructor. Offered in fall.

Examination of the principal social, legal, and political institutions in medieval Islam, especially those subsumed under shari'a.

ARIC 454 Modern Movements in Islam (3 cr.)

Same as HIST 454. Prerequisites: HIST 355 or 356 or equivalent background. Offered once a year.

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.

ARIC 460 Selected Topics in Middle Eastern History, 600-1800 AD (3 cr.)

Same as HIST 460. Prerequisites: appropriate course(s) from ARIC 343345 series or consent of instructor. Offered in fall and spring.

May be repeated for credit when content changes

ARIC 462 Selected Topics in the History of the Modern Middle East (3 cr.)

Same as HIST 462. Prerequisites: HIST/ARIC 355 or HIST/ARIC 356, whichever is appropriate or consent of instructor. Offered occasionally

May be repeated for credit when content changes

ARIC 463 Selected Topics in the History of Islamic Thought and Institutions (3cr.)

Same as HIST 463. Prerequisites: consent of instructor. Offered in spring.

May be repeated for credit when content changes.

ARIC 464 Islamic Art and Architecture in India and Pakistan (3 cr.)

Prerequisites: ARIC 465 and 466 or consent of instructor. Offered occasionally.

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.

ARIC 465-466 Islamic Architecture in Turkey, Persia and Central Asia (3 cr.)

Prerequisites: ARIC 270. Offered in alternate years.

First semester: Ghaznavids, Seljuks, and Mongols. Second semester: Timurids, Safavids, and Ottomans

ARIC 467 Islamic Architecture in Spain and North Africa (3 cr.)

Prerequisites: ARIC 270. Offered occasionally.

Religious and secular architecture and decoration of Islamic Spain and North Africa;

Arab and Islamic Civilizations 133

discussion of formative impulses from Byzantium and Umayyad Syria.

ARIC 477-478 Islamic Decorative Arts (3 cr. per semester)

Prerequisites: ARIC 271. Offered in alternate years.

Wood carving, ivory, metals, textiles, glass, and carpets of the Islamic world; ornamental elements in common; materials, objects and design.

134 Undergraduate

Art

Department of Performing and Visual Arts School of Humanities and Social Sciences

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

Assistant Professors: A. Shafer, A. Deebi (Art Program Director)

Visiting Assistant Professor: S. El Noshokaty

Visiting Associate Professor: M. E. McCombie

Visiting Associate Teacher: B. Shehab

The Department of Performing and Visual Arts offers an undergraduate bachelor's degree as well as a minor in Art. The curriculum balances practical experience and theoretical knowledge in both studio and art history courses. All courses within the Art Program encourage the development of perceptual and analytical skills as well as writing proficiency. The Art Program embraces the philosophy of the broad-based liberal arts education.

Bachelor of Arts

The curriculum for the B.A. in Art provides a generalist approach within a liberal arts tradition. The program promotes an integration of various artistic disciplines, including an awareness of non-western, especially Arabic/Egyptian, artistic traditions.

Studio Art courses develop a comprehensive foundation in two-dimensional and three-dimensional studio art disciplines in conjunction with the theoretical and analytical components of Art History. Courses take advantage of AUC's unique geographical position in the world, exploring influential movements in western art as well as the rich aesthetic heritage of the Middle East.

In order to be accepted into the art major, all students will be required to have taken three introductory courses (ARTV 200, 201, and 211) to submit a portfolio of their work, and to be interviewed by Art program faculty. Throughout the program, students will be expected to attend and participate in art events off campus. Prior to registering for their final senior project, students will be required to submit a digital portfolio for review.

Art Major Concentrations

1. Graphic Arts & Design (15 cr.)

This concentration is identical to the Art Minor in Graphic Arts & Design (for non-Art Majors).

With correct planning, students in the Art Major would be required to take as few as one course additional to their Major requirements. In addition, however, it is required that this concentration form the focus of the student's senior project, to be developed in ARTV469-470.

2. Traditional Egyptian Arts (15 cr.)

This concentration is identical to the Art Minor in Traditional Egyptian Arts (for non-Art Majors).

With correct planning, students in the Art Major would be required to take as few as one

course additional to their Major requirements. In addition, however, it is required that this concentration form the focus of the student's senior project, to be developed in ARTV469-470.

Major Requirements

A total of 120 credits are required for the bachelor's degree in Art:

Core Curriculum (34-46 credits)

Concentration Requirements (42 credits)

ARTV 200 - Art Foundations (3 cr.)
 ARTV 201 - Drawing I (3 cr.)
 ARTV 202 - Painting I (3 cr.)
 ARTV 203 - Sculpture I (3 cr.)
 ARTV 211 - World Art History Survey I (3 cr.)
 ARTV 212 - World Art History Survey II (3 cr.)
 ARTV 310 - Modern Art (3 cr.)
 ARTV 311 - Drawing II (3 cr.)
 ARTV 312 - Painting II (3 cr.)
 ARTV 315 - Contemporary Art & Theory (3 cr.)
 ARTV 469 - Creative & Professional Practices (3 cr.)
 ARTV 470 - Senior Project (3 cr.)

Choose one:

ARTV 204 - Calligraphy (3 cr.)
 ARTV 205 - Ceramics I (3 cr.)
 ARTV 209 - Mosaics (3 cr.)
 ARTV 230 - The Art of Photography (3 cr.)
Also able to fulfill credits for the Additional Requirements.
 ARTV 308 - Mixed Media (3 cr.)
 ARTV 309 - Printmaking (3 cr.)
Also able to fulfill credits for the Additional Requirements.

Choose one:

ARTV 206 - Fashion Design (3 cr.)
Also able to fulfill credits for the Additional Requirements.
 ARTV 207 - Graphic Design I (3 cr.)
 ARTV 208 - Interior Design (3 cr.)
 ARTV 250 - Fundamentals of 3-Dimensional Design (3 cr.)
Also able to fulfill credits for the Additional Requirements.
 ARTV 222 - Architecture: Art or Engineering (3 cr.)
 ARTV 313 - Web Design (3 cr.)

Collateral Requirements (6 credits)

Choose two:

ARIC 206 - Art and Architecture of the City of Cairo (3 cr.)

136 Undergraduate

ARIC 270-271 - Introduction to Islamic Art and Architecture (3 cr. per semester)
 EGPT 202 - Ancient Egypt (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.)

Additional Requirements (12 credits)

Choose **FOUR** (not including those fulfilling Art Concentration or Collateral Requirements above):

ANTH 202 - Cultural Anthropology (3 cr.)
 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)
 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 477-478 - Islamic Decorative Arts (3 cr. per semester)
 ARTV 206 - Fashion Design (3 cr.)
 ARTV 210 - Language of the Traditional Arts (3 cr.)
 ARTV 250 - Fundamentals of 3-Dimensional Design (3 cr.)
 ARTV 230 - The Art of Photography (3 cr.)
 ARTV 303 - Sculpture II (3 cr.)
 ARTV 305 - Ceramics II (3 cr.)
 ARTV 309 - Printmaking (3 cr.)
 ARTV 314 - Modern and Contemporary Architecture (3 cr.)
 ARTV 370 - Selected Topics in Art (3 cr.)
 May be repeated with new content.
 ARTV 402 - Independent Study (1-3 cr.)
 By permission of Art program director.
 EGPT 202 - Ancient Egypt (3 cr.)
 EGPT 204 - Archaeology: Methods and Theories (3 cr.)
 EGPT 361 - Art and Architecture of Ancient Egypt I (3 cr.)
 EGPT 362 - Art and Architecture of Ancient Egypt II (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.)
 FILM 340 - Documentary Film (3 cr.)
 FILM 341 - Anthropology and Film (3 cr.)
 FILM 350 - Introduction to Digital Filmmaking (3 cr.)
 FILM 360 - The Filmmaker (3 cr.)
 FILM 390 - Film Genre (3 cr.)
 HIST 402 - Selected Topics in European History (3 cr.)
 (when art is the central focus of the course)
 JRMC 305 - Introduction to Visual Communication (3 cr.)
 JRMC 315 - Introduction to Advertising (3 cr.)
 JRMC 330 - Advanced Photography (3 cr.)
 JRMC 405 - Advanced Visual Communication (3 cr.)

JRMC 425 - Integrated Marketing Communication Campaigns Capstone (3 cr.)
MUSC 330 - Introduction to Music Technology (3 cr.)
PHIL 310 - Philosophy and Art (3 cr.)
THTR 204 - Introduction to Technical Theatre (3 cr.)
THTR 324 - Design for the Theatre (3 cr.)
THTR 344 - Design Practicum (3 cr.)

Electives (14-26 credits)

Minor in Art

The minor in Art provides a general introduction to studio practices of design, drawing and painting as well as their historical models.

Requirements (15 Credits):

Art minors are required to take the following:

ARTV 200 - Art Foundations (3 cr.)
ARTV 201 - Drawing I (3 cr.)
ARTV 202 - Painting I (3 cr.)
ARTV 211 - World Art History Survey I (3 cr.)

Additional Requirements

A fifth course must be chosen from the following:

ARTV 203 - Sculpture I (3 cr.)
ARTV 212 - World Art History Survey II (3 cr.)
ARTV 311 - Drawing II (3 cr.)
ARTV 312 - Painting II (3 cr.)
ARTV 370 - Selected Topics in Art (3 cr.)
ARTV 470 - Senior Project (3 cr.)

Minor in Graphic Arts & Design

Graphic Arts & Design (15 cr.) (for non-Art Majors)

(course substitutions may be approved on a case-by-case basis by Art Program Director)

Required Courses:

ARTV 200 - Art Foundations (3 cr.)
ARTV 207 - Graphic Design I (3 cr.)
ARTV 307 - Graphic Design II (3 cr.)
ARTV 313 - Web Design (3 cr.)

Choose One:

ARTV 230 - The Art of Photography (3 cr.)

138 Undergraduate

ARTV 370 - Selected Topics in Art (3 cr.) (by approval only)
 FILM 350 - Introduction to Digital Filmmaking (3 cr.)
 JRMC 305 - Introduction to Visual Communication (3 cr.)

Minor in Traditional Egyptian Arts

Traditional Egyptian Arts (15 cr.) (for non-Art Majors)

(course substitutions may be approved on a case-by-case basis by Art Program Director)

Required Courses:

ARTV 204 - Calligraphy (3 cr.)
 ARTV 205 - Ceramics I (3 cr.)
 ARTV 209 - Mosaics (3 cr.)
 ARTV 210 - Language of the Traditional Arts (3 cr.)

Choose one:

ARIC 206 - Art and Architecture of the City of Cairo (3 cr.)
 ARTV 305 - Ceramics II (3 cr.)
 ARTV 370 - Selected Topics in Art (3 cr.) (by approval only)
 EGPT 202 - Ancient Egypt (3 cr.)

Art Courses (ARTV)

ARTV 199 Selected Topic for Core Curriculum (3 cr.)

Offered occasionally.

Course addressing broad intellectual concerns and accessible to all first-year students as part of the Primary Level Core.

ARTV 200 Art Foundations (3 cr.)

Offered in fall and spring.

An introduction to fundamental principles of two-dimensional design, including composition, visual language, and color theory. Students will explore visual communication tools, creative processes, and visual theory. The course involves lectures, discussions, and class exercises. Each student will design and produce a final individual project.

ARTV 201 Drawing I (3 cr.)

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, nonobjective, still-life, and landscape drawing exercises.

Prerequisites: ARTV 200. Offered in fall and spring.

ARTV 202 Painting I (3 cr.)

Prerequisites: ARTV 200 and 201. Offered in fall and spring.

An introduction to the technical, aesthetic, and historical aspects of painting in a variety of mediums. Formal concepts of composition, pictorial space and color interaction are applied to subjects such as still-life landscape and the figure.

ARTV 203 Sculpture I (3 cr.)

Prerequisites: ARTV 200. Offered in fall and spring.

An introduction to the fundamental elements of making and understanding sculpture, within historical and contemporary contexts. Concepts such as three-dimensional form, mass, volume, and drawing are explored through a hands-on, project-based approach.

ARTV 204 Calligraphy (3 cr.)

Prerequisites: ARTV 200, or permission of instructor. Offered occasionally.

An introduction to the basics of Arabic calligraphy, including the study of historical styles and their developments, as well as the practical application of the Thuluth and Kufic scripts. Emphasis will be placed on developing fine manual craft skills through extended practice. Students will copy masterpieces, cut and decorate Turkish-style matting, and adapt classical designs to contemporary media. Fieldtrips to view local examples of architectural calligraphy will enhance knowledge of traditional designs and inspire adaptations.

ARTV 205 Ceramics I (3 cr.)

Offered in fall or spring.

An introduction to a wide range of hand-building ceramic techniques, such as pinching, coiling, slab-building, and press molding. Students will work with different types of ceramics materials such as clays, glazes, and colorants, and will learn the basics of ceramic firing technology. Fieldtrips to traditional ceramics workshops will bring awareness to Egyptian craftspeople and their art.

ARTV 206 Fashion Design (3 cr.)

Prerequisites: ARTV 200 and 201. Offered in fall or spring.

An introduction to the history and design practices of the fashion field. Practical and theoretical skills will be learned through research and hands-on assignments. Most coursework will be directed toward a final, cumulative fashion portfolio.

ARTV 207 Graphic Design I (3 cr.)

Prerequisites: ARTV 200. Offered in fall and spring.

A conceptual and technical introduction to graphic design. Three principal computer programs (Photoshop, Illustrator, InDesign) will be used to gain the basic skills for portfolio preparation and professional employment in the field.

ARTV 208 Interior Design (3 cr.)

Prerequisites: ARTV 200 and ARTV 201. Offered in fall or spring.

An introduction to the basic principles of interior design, space planning, and material finishes. Simple construction techniques and aesthetic effects will be learned through drawing and modeling.

ARTV 209 Mosaics (3 cr.)

Prerequisites: ARTV 200 or permission of instructor. Offered occasionally.

An introduction to the history and practice of the traditional art of mosaics. Using a variety of traditional mosaic mediums and contexts, students will transform this ancient technique into a contemporary form of expression.

140 Undergraduate

ARTV 210 Language of the Traditional Arts (3 cr.)

Offered in fall or spring.

An introduction to the theoretical principles and practical aspects of the traditional arts of Egypt, with special emphasis on the Coptic and Islamic traditions in Cairo. Students will learn the principles of color, form, and iconography, and will gain practical knowledge through field trips and in-class assignments. Although drawing and painting exercises are central to the course, no prior experience is necessary. The ultimate goal of this course is to convey, through study and practice, the vibrancy of these Cairo traditions.

ARTV 211 World Art History Survey I (3 cr.)

Offered in fall and spring.

An introduction to the historical development of the visual arts in the western and selected nonwestern traditions from prehistoric beginnings until the late medieval periods. Concepts such as formal analysis and cultural context will be explored through lectures, class discussions, and written exercises.

ARTV 212 World Art History Survey II (3 cr.)

Prerequisites: ARTV 211. Offered in fall and spring.

A continuation of the study of the historical development of the visual arts in the western tradition from the early Renaissance until the present. Concepts such as formal analysis and cultural context will be explored through lectures, class discussions, and written exercises.

ARTV 221 Technical Drawing for Designers (3 cr.)

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.

ARTV 222 Architecture: Art or Engineering (3 cr.)

Same as AENG 222. Offered in fall or spring.

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.

ARTV 230 The Art of Photography (3 cr.)

Prerequisites: ARTV 200. Offered in fall and spring.

An introduction to basic photography combining the technical aspects of processing and developing film with an understanding of lighting and composition, and informed by the history of photography.

ARTV 250 Fundamentals of 3-Dimensional Design (3 cr.)

Same as AENG 250.

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.

Four-hour studio period.

ARTV 299 Selected Topic for Core Curriculum (3 cr.)

Prerequisites: RHET 101. Offered occasionally.

Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

ARTV 303 Sculpture II (3 cr.)

Prerequisites: ARTV203 or permission of instructor. Offered occasionally.

An advanced study of sculpture within the studio context, developing refined skills and knowledge of materials, finding a voice for artistic expression, and forming a critical aesthetic for three-dimensional creative work. Includes a study of sculptors and their work, the conceptual development of sculpture designs, and the production of major sculptures in the studio.

ARTV 305 Ceramics II (3 cr.)

Prerequisites: ARTV 205. Offered in fall or spring.

An introduction to advanced ceramic forms, techniques, and production processes. Students will practice making functional ceramics (applied ceramics), architectural ceramics, and ceramics specific to traditional cultures (e.g., Raku, Egyptian Blue, Lusterware). An emphasis will be placed on experimentation and discovery, of both the functional and aesthetic possibilities of ceramics. This course will prepare students to establish their own basic, independent ceramics design practice.

ARTV 307 Graphic Design II (3 cr.)

Prerequisites: ARTV 207 or permission of instructor.

A continuation of Graphic Design I.

ARTV 308 Mixed Media (3 cr.)

Prerequisites: ARTV 202. Offered in fall or spring.

An advanced experimental study of the use of traditional artistic mediums in new ways. Mixed media techniques include texture and sculptural relief, collage, and found object assemblage, and materials may include acrylic media, plaster, paper mache, string, fabric, and wax. This course addresses the theoretical background and the highly individual approach.

ARTV 309 Printmaking (3 cr.)

Prerequisites: ARTV 201. Offered in fall or spring.

An in-depth technical and aesthetic introduction to the various printmaking techniques, focusing on the formal, conceptual, and expressive qualities of the print matrix. Concepts of image building, multiplicity of images, and experimentation will be informed by historical examples and contemporary perspective.

ARTV 310 Modern Art (3 cr.)

Prerequisites: ARTV 211 and 212. Offered in fall and spring.

A survey of the development of style and content in [remove: twentieth-century painting and sculpture] the two-and three-dimensional arts of the late 19th and early 20th Centuries. The formal, conceptual, and expressive concerns of artists will be studied within their historical contexts. Formal and textual analysis will be practiced through written exercises.

142 Undergraduate

ARTV 311 Drawing II (3 cr.)

Prerequisites: ARTV 201, 211 and 212. Offered in fall and spring.

A continuation of ARTV 201 in which students further develop their conceptual, technical, and expressive drawing process. This course emphasizes experimentation with a wide variety of techniques and culminates in a self-directed final project and portfolio.

ARTV 312 Painting II (3 cr.)

Prerequisites: ARTV 202, 211 and 212. Offered in fall and spring.

A continuation of ARTV 202 in which pictorial concepts are reinforced and developed. The interrelation of content and form is emphasized as an important aspect of self-expression. The course culminates in a self-directed final project.

ARTV 313 Web Design (3 cr.)

Prerequisites: ARTV 200, 207 and 307. Offered in fall and spring.

An introduction to basic web design structure for building sites from the 'ground up'. Students will be introduced to software programs (e.g., Dreamweaver, Go-Live) as well as the behind-the-scenes structure of HTML, CSS, and java-script. Through hand-on projects, students will develop coding skills, build fully functioning web sites, and address current web standards and accessibility issues.

ARTV 314 Modern and Contemporary Architecture (3 cr.)

Offered in fall and spring.

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.

ARTV 315 Contemporary Art & Theory (3 cr.)

Prerequisite: ARTV 310. Offered in fall or spring.

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.

ARTV 316 Coptic Art and Architecture (3 cr.)

The course offer interdisciplinary undergraduate course to student 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.

ARTV 317 Teaching Kids Art (3 cr.)

Prerequisites: ARTV 200, ARTV 201 & ARTV 202 or permission of instructor.

A group-oriented, hands-on approach to teaching Art to children. Students will research and discuss theories of teaching, and will practice curriculum planning and implementation in on-site teaching in the community. As a community based learning initiative, the primary objective is to empower the Cairo community of disadvantaged children and the institutions that support them.

ARTV 370 Selected Topics in Art (3 cr.)

Prerequisites: Determined by instructor. Offered in fall and spring.

In-depth examination of specific topics in the studio arts or art history. May be repeated for credit when content is different

ARTV 402 Independent Study (1-3 cr.)

Prerequisites: ARTV 311, or ARTV 312. Offered in fall and spring.

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 courses regularly offered in the program. May be repeated up to three times if the content changes. Open to Seniors only, with a minimum B average.

ARTV 469 Creative & Professional Practices (3 cr.)

Prerequisites: ARTV 201 and ARTV 202. Offered in fall only.

An introduction to the essentials of creativity in the arts. Through practical homework assignments, students will gain a clear idea of their own artistic vision. Writing and portfolio assignments as well as visits from practicing artists will prepare students for the senior project in the spring (ARTV470) and subsequent professional life. Required for all Art Majors before they enroll in ARTV470. Priority will be given to students enrolled in ARTV470 in the following spring.

ARTV 470 Senior Project (3 cr.)

Prerequisites: ARTV 311, 312 and 315. Offered in spring only.

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. Priority will be given to graduating seniors in the Art Major. Prior to registration, all students must submit a digital portfolio of their work. In preparation for the course, winter session coursework may be required.

144 Undergraduate

Biology

Department of Biology
School of Sciences and Engineering

Professor Emeritus: A. Main

Professors: H. El Dorry (Chair), S. Zada

Associate Professor: R. Siam

Assistant Professors: A. Amleh, J. Grubich, E. Cruz-Rivera, H. Mahmoud

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

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 (3 cr.)
PHYS 111 - Classical Mechanics, Sound and Heat (3 cr.)
PHYS 123L - General Physics Laboratory I (1 cr.)

General electives (3-15 credits)

Minor in Biology

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)

Minor in Environmental Science

This is an interdisciplinary minor coordinated by the department of Biology and Chemistry. For details, refer to the specific entry "Environmental Science".

146 Undergraduate

Premedical Track

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.

Biology Courses (BIOL)

BIOL 102 Essentials of Environmental Biology (3 cr.)

Prerequisites: non-science majors only. Offered in fall.

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.

BIOL 103 Introductory Biology (3 cr. + 1 cr. lab)

Prerequisites: non-science majors only. Offered in fall, spring and summer.

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. This is a basic biology course for non-science majors. Students taking BIOL 103 may not take BIOL 104

BIOL 104 The Unity of Life (3 cr. + 1 cr. lab)

Offered in fall, spring and summer.

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. 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.

BIOL 105 Diversity of Life (3 cr. + 1 cr. lab)

Offered in spring.

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. This course is designed for science majors, but can be taken by anyone interested in studying biology in more depth than Biology 103.

BIOL 130 Current Health Issues (4 cr.)

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. This course is open to all AUC students.

BIOL 199 Selected Topic for Core Curriculum (3 cr.)

Offered occasionally.

Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

BIOL 204 Principles of Systematics (3 cr. + 1 cr. lab)

Prerequisites: BIOL 105. Offered in fall.

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. Field trips are required.

BIOL 210 Evolution (3 cr.)

Offered in fall.

A study of the history and principles of organic evolution. The evidence for evolution, mechanisms of evolution and population genetics are emphasized.

BIOL 211 Cell Biology (3 cr. + 1 cr. lab)

Prerequisites: BIOL 104 and CHEM 203 or co-requisite.

This course is an evolutionary survey of cell specialization of microbes, fungi, plants, and animals. It includes the correlation of micro-anatomical 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.

BIOL 214 General Botany (3 cr. + 1 cr. lab)

Prerequisites: BIOL 104 and 105. Offered in spring.

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.

BIOL 215 Biophysics (4 cr.)

Prerequisites: PHYS 111/123L.

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.

BIOL 221 Genetics (3 cr. + 1 cr. lab)

Prerequisites: BIOL 104.

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.

BIOL 240 Ecology (3 cr. + 1 cr. lab)

Prerequisites: BIOL 105.

A study of the composition, structure and function of plant and animal communities and the

148 Undergraduate

environmental factors regulating their growth and succession. An investigative laboratory emphasizing data collection, analysis and interpretation is included. Field trips are an integral part of this course.

BIOL 301 Animal Physiology (3 cr. + 1 cr. lab)

Prerequisites: BIOL 211.

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.

BIOL 302 Environmental Biology for Engineers (2 cr. + 1 cr. lab)

Prerequisites: Junior or senior standing.

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.

BIOL 303 Developmental Biology (3 cr. + 1 cr. lab)

Prerequisites: BIOL 211.

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.

BIOL 304 Taxonomy (3 cr. + 1 cr. lab)

Prerequisites: BIOL 204.

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.

BIOL 305 Environmental Biology (3 cr. + 1 cr. lab)

Prerequisites: BIOL 240 or instructor's consent.

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.

BIOL 306 Environmental Biology of the Red Sea (3 cr. + 1 cr. lab)

Prerequisites: students must be good swimmers and consent of the instructor.

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. Laboratories and field trips to the Red Sea are essential to the course.

BIOL 307 Microbiology (3 cr. + 1 cr. lab)

Prerequisites: BIOL 211.

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.

BIOL 312 Comparative Anatomy (3 cr. + 1 cr. lab)

Prerequisites: BIOL 104 and 105.

Comparative anatomy of chordates, their evolution, and phylogenetic relationships. Three-hour laboratory includes dissection of chordates.

BIOL 313 Invertebrate Zoology (3 cr. + 1 cr. lab)

Prerequisites: BIOL 105.

Anatomy, behavior, systematics, and phylogeny of invertebrates are included in the lectures. Three hour laboratory emphasizes morphology and anatomy.

BIOL 315 Biochemistry (3 cr.)

Same as CHEM 315. Prerequisites: CHEM 306.

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.

Two class periods and one three hour lab period.

BIOL 320 Animal Behavior (3 cr. + 1 cr. lab)

Prerequisites: BIOL 221.

Study of ethology with emphasis on its development, control and function. Laboratory includes observations and descriptions, qualification techniques and experimentation.

BIOL 340 Quantitative Biology (3 cr. + 1 cr. lab)

Prerequisites: BIOL 240 and MACT 112.

Application of mathematical and statistical techniques to analyze and interpret data relating to biological inquiries. Extensive use of appropriate computer technology will be applied in recording, cataloguing, analyzing, simulating and reporting data.

BIOL 345 GIS For Biologists (4 cr.)

Prerequisites: Junior or Senior standing.

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.

150 Undergraduate

BIOL 350 Selected Topics in Biotechnology (1-4 cr.)

Prerequisites: permission of the instructor.

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 will be determined by the number of worked. May be repeated for credit if the content changes.

BIOL 399 Guided Studies in Environmental Biology (3 cr.)

Same as CHEM 399. Offered in fall and spring.

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.

BIOL 408 Selected Topics in Biology (1-4 cr.)

Prerequisites: consent of the instructor.

Topics in biology chosen according to the special interests of the student and faculty. May be repeated for credit more than once if the content changes.

BIOL 410 Guided Studies in Biology (1-4 cr.)

Prerequisites: consent of the instructor.

Under the guidance of a faculty member and with the approval of the Chair, the student undertakes readings or research on a specific topic in biology. The student should demonstrate achievements by presenting results, submitting a report, or passing an examination as determined by the supervisor.

BIOL 411 Molecular Biology of the Gene (3 cr. + 1 cr. lab)

Prerequisites: BIOL 221 and CHEM 203 or co-requisite.

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.

BIOL 412 Molecular Cell Biology (3 cr. + 1 cr. lab)

Prerequisites: BIOL 211 and CHEM 203 or co-requisite.

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 gene flow within cells, information flow, cancer and growth control.

BIOL 415 Immunology (3 cr. + 1 cr. lab)

Prerequisites: BIOL 211 and CHEM 105.

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.

BIOL 420 Genomics and Bioinformatics (3 cr. + 1 cr. lab)

Prerequisites: BIOL 411.

This course offers an in depth coverage of the rapidly expanding fields of genomics and bioinformatics. Extending from the principles presented in Molecular Genetics (BIOL 411), specialized topics are investigated through use of a current textbook, journals and computer demonstrations and applications. 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.

BIOL 430 Tumor Biology (3 cr. + 1 cr. lab)

Prerequisites: BIOL 211 and 221.

The course provides a broad knowledge on the biological principals underlying tumor and cancer formation. The basic science of tumor at the cellular, molecular and genetic level will be addressed. The course allows students to understand the fundamental mechanisms that underlie eukaryotic cell multiplication, cell senescence and cell death, including the alterations that are involved in the initiation of uncontrolled growth and carcinogenesis. In addition, cell cycle surveillance mechanisms that ensure genomic integrity and the signaling pathways that regulate tumor development and spread will be covered.

BIOL 440 Marine Ecology (3 cr. + 1 cr. lab)

Prerequisites: BIOL 240 and CHEM 105.

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. Includes an extended field trip to marine research institute for "hands-on" experience in marine biological research.

BIOL 445 Desert Ecology (3 cr. + 1 cr. lab)

Prerequisites: BIOL 240.

Examination of the ecology of desert ecosystems with particular reference to Middle-Eastern deserts. Emphasis is placed on the strategies employed by desert-living organisms which allow them to survive and prosper under desert conditions. Field trips are an integral part of this course.

BIOL 495 Senior Research Thesis (2 cr.)

Prerequisites: senior standing in biology. Offered in fall.

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). Repeatable.

BIOL 496 Seminar in Biology (1 cr.)

Prerequisites: BIOL 495. Offered in the spring.

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.

152 Undergraduate

Chemistry

Department of Chemistry
School of Sciences and Engineering

Professor Emeritus: F. Hassan

Professors: P. Askalani, H. Azzazy, D. Fleita, T. Madkour, J. Ragai

Associate Professor: A. Ramadan (Chair), T. Shoeib

Assistant Professor: N. Demir (Director of Master of Science in Chemistry), M. El Sayed, W. Mamdouh

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.

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 (56 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 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 (2 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 (1 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 - Industrial Chemistry I - Chemical Industries (3 cr.)
CHEM 307 - Industrial Chemistry II - Production Basics for Chemical Industries (3 cr.)
CHEM 407 - Industrial Chemistry III - Global Market/International Standards (3 cr.)

Collateral Requirements (29 credits)

CSCE 106 - Fundamentals of Computer Science (3 cr.)
MACT 131 - Calculus I (0/3 cr.)
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 (4-16 credits)

Minor in Chemistry

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.

154 Undergraduate

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.

Minor in Archaeological Chemistry

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.

Students choosing this minor should have Thanawiya 'Amma Science or equivalent and will have to take CHEM 105 and 115L as part of their general science or core curriculum requirements.

Requirements

Total credits in chemistry: 21
 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 206 - Analytical Chemistry I (2 cr.)
 CHEM 216L - Volumetric and Gravimetric Analysis (2 cr.)
 CHEM 311 - Analytical Chemistry II (3 cr.)
 CHEM 312 - Archaeological Chemistry I (3 cr.)
 CHEM 410 - Archaeological Chemistry II (3 cr.)

Minor in Environmental Science

This is an interdisciplinary minor coordinated by the Department of Biology and Chemistry. For details, refer to the specific entry "Environmental Science."

Chemistry Courses (CHEM)

CHEM 103 Chemistry and Society (3 cr.)

Prerequisites: Not for credit for Science, Engineering and Computer Science Majors. Offered in fall and spring.

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. Not for credit for Science, Engineering and Computer Science majors.

CHEM 104 Man and the Environment (3 cr.)

Offered in fall, spring and occasionally in summer.

Chemistry of the environment. Principles of ecosystem structures, energy flow and elements cycles. Natural resources, Population and Development. Renewable energy. Pollution control and prevention: air pollution, global warming, the depletion of the ozone layer and water pollution. Hazardous substances. Solid waste and recycling. Pests and pest control. Sustainability. Not for credit for science, engineering and computer science majors.

CHEM 105 General Chemistry I (3 cr.)

Prerequisites: Thanawiya Amma Science or equivalent. Offered in fall, spring and occasionally in summer.

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.

CHEM 106 General Chemistry II (3 cr.)

Prerequisites: CHEM 105. Offered in fall and spring.

Gases; thermochemistry; liquids and solids, properties of solutions; introduction to chemical kinetics, chemical equilibria, environmental pollution.

CHEM 115L General Chemistry Laboratory (1 cr.)

Prerequisites: Thanawiya Amma Science or equivalent. Offered in fall and spring and sometimes in summer.

Selected experiments in inorganic and organic chemistry.

One three-hour lab period

CHEM 116L General Chemistry Laboratory (1 cr.)

Prerequisites: CHEM 115L. Offered in fall and spring.

Semi-micro qualitative analysis of selected salts and mixtures

One three-hour laboratory period.

CHEM 199 Selected Topic for Core Curriculum (3 cr.)

Offered occasionally.

Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

CHEM 203 Organic Chemistry I (3 cr.)

Prerequisites: CHEM 105. Offered in fall.

Aliphatic and aromatic hydrocarbons, stereochemistry and conformational analysis, ionic and free-radical substitution and addition reactions.

CHEM 205 Environmental Analytical Chemistry (3 cr.)

Prerequisites: CHEM 105 and 106.

Introduction; analytical environmental data: assessment and interpretation, titrimetry, chromatography, atomic spectrometry, mass spectrometry, potentiometric techniques, thermal

156 Undergraduate

techniques. Specific applications to the environment. This course is not available for credit for students who take CHEM 311. Some laboratory demonstrations will be provided.

CHEM 206 Analytical Chemistry I (2 cr.)

Prerequisites: CHEM 106 and to be taken concurrently with CHEM 216L. Offered in spring. Ionic equilibria: solubility, activity and ionic strength. Gravimetry: nucleation and crystal growth, methodology, colloids. Acid-base, complexation, oxidation-reduction and precipitation equilibria and titrations. Introduction to separations in analytical chemistry.

CHEM 207 Industrial Chemistry I Chemical Industries (3 cr.)

Prerequisites: CHEM 106 or consent of instructor. Offered every other semester. 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 and cements. Readings from chemical industry literature will also cover latest trends and products. Field trips to local industries.

CHEM 216L Volumetric and Gravimetric Analysis (2 cr.)

Prerequisites: CHEM 116L and to be taken concurrently with CHEM206. Offered in spring. Acid-base, oxidation-reduction, complexometric and precipitation titrations; gravimetric analysis. Two three-hour periods.

CHEM 301 Seminar in Science and Technology (1 cr.)

Prerequisites: junior standing. Offered occasionally. Weekly one-hour seminars in different areas of science and technology to be given by faculty and invited speakers from industries and other scientific communities. May be taken more than once with the consent of the adviser.

CHEM 303 Thermodynamics (3 cr.)

Prerequisites: MACT 231, CHEM 206 and PHYS 112. Offered in fall. 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.

CHEM 304 Physical Chemistry I (3 cr.)

Prerequisites: CHEM 303. Offered in spring. Chemical potential and equilibria, solutions and colligative properties, electrolytes, electrochemical cells. Kinetic Theory of Gases.

CHEM 306 Organic Chemistry II (3 cr.)

Prerequisites: CHEM 203. Offered in spring. Stereochemistry, aromaticity, electrophilic aromatic substitution; spectroscopy and structure; SN1, SN2, E1, and E2 reactions.

CHEM 307 Industrial Chemistry II Production Basics for Chemical Industries (3 cr.)

Prerequisites: CHEM 106 or consent of instructor. Offered every other semester. 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 flow-sheets, material and

energy balances, mass and heat transfer, reactor kinetics, chemical economics, process design strategies. Wherever possible, principles will be demonstrated with slides or videos from actual industries, supplemented by field trips to local plants.

CHEM 309 Inorganic Chemistry I (3 cr.)

Prerequisites: CHEM 106 and junior standing. Offered in fall.

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

CHEM 310L Organic Chemistry I Laboratory (1 cr.)

Prerequisites: CHEM 115L, 203 and 306. Offered in fall.

Characterization of organic compounds by classification tests.

CHEM 311 Analytical Chemistry II (3 cr.)

Prerequisites: CHEM 206, 216L. Offered in fall.

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.

Two class periods and one three-hour lab period.

CHEM 312 Archaeological Chemistry I (3 cr.)

Prerequisites: CHEM 311. Offered occasionally.

Characterization of metals, minerals, pigments, glass, stone, dyes. Dating techniques: thermoluminescence, radiocarbon, amino-acid, Obsidian hydration and potassium/argon. Introduction to Mossbauer spectroscopy and neutron activation analysis.

CHEM 313L Thermodynamics Laboratory (1 cr.)

Prerequisites: CHEM 106, 216L. Offered in fall.

Experiments in physical chemistry, thermodynamics and error analyses.

CHEM 314L Physical Chemistry I Laboratory (1 cr.)

Prerequisites: CHEM 313L. Offered in spring.

Experiments in electrochemistry. One three-hour lab period.

CHEM 315 Biochemistry (3 cr.)

Same as BIOL 315. Prerequisites: CHEM 306. Offered in fall.

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.

Two class periods and one three hour lab period.

CHEM 316L Organic Chemistry II Laboratory (2 cr.)

Prerequisites: CHEM 203, 306 and 310L. Offered in spring.

Systematic identification of organic compounds, analysis of mixtures (qualitative and quantitative).

158 Undergraduate

CHEM 318L Inorganic Chemistry Laboratory (1 cr.)

Prerequisites: CHEM 216L. Offered in fall.

Preparations, reactions, and characterization of some inorganic compounds; ion-exchange; chromatography; measurements of stability constants.

CHEM 325 Clinical Chemistry I (3 cr.)

Prerequisites: CHEM 311 or concurrently, CHEM 315 or consent of instructor. Offered in spring.

Module 1: Principles of laboratory techniques: spectrophotometry, chromatography, mass spectrometry, radioisotopes, electrophoresis, immunochemical techniques, electrochemistry, point-of-care devices, and lab automation. Module 2: Chemometrics: statistical procedures, selection and interpretation of lab procedures, reference intervals, clinical decision limits, quality control and method evaluation. Module 3: Laboratory management, quality and informatics.

Two class periods and one three-hour lab period.

CHEM 399 Guided Studies in Environmental Sciences (3 cr.)

Same as BIOL 399. Offered in fall and spring.

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.

CHEM 402 Physical Chemistry II (3 cr.)

Prerequisites: CHEM 304 and MACT 233. Offered in fall.

Chemical kinetics and dynamics, photochemistry, heterogeneous and homogeneous catalysis, surface chemistry including adsorption, crystal structure.

CHEM 403 Introduction to Quantum Mechanics and Spectroscopy (3 cr.)

Prerequisites: CHEM 304 (or concurrent) and PHYS 214. Offered in spring.

Basic concepts and theory of quantum mechanics, applications to atomic and molecular spectroscopy.

CHEM 406 Organic Chemistry III (3 cr.)

Prerequisites: CHEM 306. Offered in spring.

A continuation of the chemistry of monofunctional and polyfunctional compounds, including the chemistry of carbanions, condensation reactions, nucleophilic addition and multistep syntheses.

CHEM 407 Industrial Chemistry III Global Market/International Standards (3 cr.)

Prerequisites: CHEM 106 or consent of instructor. Offered every other semester.

A grounding industrial hygiene/laboratory safety, good laboratory practice, quality and environmental management systems (ISO 9000/1400 etc.) and laboratory certifications. Topics selected from: international and national standards, environmental and safety agencies, toxicology, plant environment and hazards, waste management, safety policies, industrial experimentation and plant visits.

CHEM 408 Inorganic Chemistry II (3 cr.)

Prerequisites: CHEM 309. Offered in spring.

Coordination chemistry, transition metals and their complexes, theories of metalligand bonding, complexes of pi-acceptor ligands and organometallic compounds, reaction mechanisms of d-block complexes. Systematic study of the chemistry of the elements.

CHEM 410 Archaeological Chemistry II (3 cr.)

Prerequisites: CHEM 312. Offered occasionally.

Environmental degradation, chemical and physical agents of deterioration. Corrosion of metals, methods of preservation of antiquities and general methods of treatment. Conservation of stone. Study of porous solids. Introduction to Mercury porosimetry. Pore size distribution studies.

CHEM 412L Physical Chemistry II Laboratory (1 cr.)

Prerequisites: CHEM 216L. Offered in fall.

Experiments in physical chemistry emphasizing chemical kinetics.

One three-hour lab period.

CHEM 414 Selected Topics in Chemistry (1-3 cr.)

Prerequisites: consent of instructor. Offered occasionally.

Topics chosen according to special interests of faculty and students. May be repeated for credit more than once if content changes

CHEM 416L Organic Syntheses (1 cr.)

Prerequisites: CHEM 316L and CHEM 406 or consent of instructor. Offered in fall.

Organic Synthesis involving chemical reduction and oxidation. Reactions chosen from Claisen, FreidelCrafts, HellVolhardZelinsky, Grignard ... etc., the syntheses incorporate chromatography and spectroscopic analysis.

CHEM 425 Clinical Chemistry II (3 cr.)

Prerequisites: CHEM 325. Offered in fall.

Module 1. Clinical analytes: amino acids, proteins, nucleic acids, lipids, carbohydrates, electrolytes, clinical enzymology, clinical toxicology, tumor markers, therapeutic drug monitoring, and vitamins. Module 2. Pathophysiology: hepatic, cardiac, renal, gastric, and pancreatic diseases, acid-base disorders, endocrine function, bone disease, organ transplantation, pregnancy and fetal development, and biochemical aspects of hematology.

Two class periods and one three-hour lab period

CHEM 430L Advanced Practical Organic Chemistry (3 cr.)

Prerequisites: CHEM 316L. Offered occasionally.

Advanced organic multistep syntheses, identification of products by spectroscopy, semimicro quantitative determination of organic compounds.

CHEM 435 Advanced Organic Chemistry (3 cr.)

Prerequisites: consent of instructor. Offered occasionally.

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.

CHEM 440 Molecular Symmetry and Applications (3 cr.)

Prerequisites: consent of instructor. Offered occasionally.

160 Undergraduate

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.

CHEM 444 Independent Study (1-3 cr.)

Prerequisites: consent of instructor, senior standing.

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. May be taken more than once if content changes. A student may earn up to a total of three credits.

CHEM 450 Electrochemistry (3 cr.)

Prerequisites: CHEM 304, 314L or concurrent. Offered occasionally.

Electrochemical processes, irreversible electrodes and cells; dissolution and corrosion of metals; passivity, electrolytic reduction and oxidation; applications of electrochemistry to fuel cells, electrodialysis, electrophoresis, molten salt cells, etc.

Three class periods or two class periods and one three-hour lab period.

CHEM 495 Senior Thesis and Seminar (3 cr.)

Prerequisites: senior standing. Offered in fall and spring.

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. May be substituted by a 400level course in chemistry or other sciences with the approval of the department.

General Science Courses (SCI)

SCI 105 Science and Technology of Ancient Egypt (3 cr.)

Prerequisites: Not for credit for Science, Engineering and Computer Science students. Offered in fall and spring.

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.

SCI 109 Exploration of the Universe (3 cr.)

Prerequisites: Not for credit for Science, Engineering and Computer Science students. Offered in fall and spring.

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.

SCI 120 Scientific Thinking (3 cr.)

Offered in the fall and spring.

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.

SCI 150L General Science Laboratory (1 cr.)

Prerequisites: SCI 120 or concurrently and not for credit for Science, Engineering and Computer Science students. Offered in fall, spring, and occasionally in winter and summer.

Introduction to experimental techniques of measurement in the general fields of physics, chemistry, and other sciences.

One three-hour lab period.

SCI 199 Selected Topic for Core Curriculum (3 cr.)

Offered occasionally.

Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

SCI 240 Chemistry, Art and Archaeology (3 cr.)

Offered in fall and spring.

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.

SCI 250 Introduction to Geology (3 cr.)

Prerequisites: Thanawaya Amma or equivalent. Offered in fall and spring.

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.

SCI 251L Introduction to Geology Lab (1 cr.)

Offered in fall and spring.

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).

One three-hour lab period.

162 Undergraduate

SCI 260 Environmental Geology (3 cr.)

Offered occasionally.

Environmental geology is applied geology focusing briefly on the entire spectrum of possible interactions between people and the physical environment.

SCI 302 Science, Technology and the Environment (3 cr.)

Prerequisites: Junior standing or higher. Offered occasionally.

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.

SCI 450 Geology of Raw Materials (3 cr.)

Prerequisites: SCI 250 or consent of instructor. Offered occasionally.

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.

Community Development and Organizing

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

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.

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)

- SOC/ANTH/PSYC 240 - Introduction to Community Development (3 cr.)
- SOC/ANTH/PSYC 340 - Participatory Action Research in Community Settings (3 cr.)
- SOC/ANTH/PSYC 440 - Practicum in Community Development (3 cr.)

Electives (6 credits) two of the following:

- ANTH/SOC 303 - Social Movements (3 cr.)
- ANTH/SOC 370 - Environmental Issues in Egypt (3 cr.)
- ANTH 372 - Applied Anthropology (3 cr.)
- ANTH 380 - Fieldwork Methods (3 cr.)
- ANTH/SOC 450 - Third World Development (3 cr.)
- ANTH/SOC 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/POLS 304 - Development Agencies (3 cr.)
- PSYC/SOC 301 - Social Psychology (3 cr.)
- PSYC 330 - Community Psychology (3 cr.)
- PSYC 430 - Advanced community psychology: Applied research and service (3 cr.)

Computer Science and Engineering

Department of Computer Science and Engineering
School of Sciences and Engineering

Professor of Practice: K. El-Ayat

Professors: A. Abdelbar, A. El-Kadi (Chair), A. Goneid, A. Khalil, A. Rafea, M. N. Mikhail

Assistant Professors: M. Ahmed, E. Nasr, M. Shalan

Associate Professor: S. Aly, S. El-Kassas

The Department of Computer Science and Engineering offers two undergraduate degrees: The Bachelor of Science in Computer Science and the Bachelor of Science in Computer Engineering.

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 a good blend of 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 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.

166 Undergraduate

A total of 133 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 Logic Design (3 cr.)
- CSCE 231 - Computer Organization and Assembly Language Programming (3 cr.)
- CSCE 239L - Digital Logic Design 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 430 - Computer Hardware Design and Applications (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.)

Computer Science and Engineering 167

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 (31 credits)

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.)
 PHYS 215 - Introduction to Electronics (3 cr.)
 PHYS 221L - Electronics Laboratory I (2 cr.)

General Electives (3-15 credits)

Minor in Computer Science

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

168 Undergraduate

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 Logic Design (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.)
- CSCE 430 - Computer Hardware Design and Applications (3 cr.)

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.

Computer Science and Engineering 169

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 (51 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.)

170 Undergraduate

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 214 - Waves and Optics (3 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 Logic Design (3 cr.)
 CSCE 231 - Computer Organization and Assembly Language Programming (3 cr.)
 CSCE 239L - Digital Logic Design Lab (1 cr.)
 CSCE 253 - Fundamentals of Database Systems (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 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.)
 EENG 215 - Circuit Analysis I (3 cr.)
 EENG 216 - Circuit Analysis II (3 cr.)
 EENG 219L - Circuit Analysis Lab (1 cr.)
 EENG 315 - Electronics I: Basic Electronic Devices & Circuits (3 cr.)
 EENG 317 - Introduction to VLSI Design (3 cr.)
 EENG 325 - Signals and Systems (3 cr.)
 MGMT 307 - Management Fundamentals (3 cr.)

Concentration Electives (12 credits)

CSCE 316 - Programming in Java (3 cr.)
 CSCE 317 - Object Oriented Programming (3 cr.)
 CSCE 321 - Analysis and Design of Algorithms (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 430 - Computer Hardware Design and Applications (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.)

Computer Science and Engineering 171

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 and Engineering Courses (CSCE)

CSCE 102 Introduction to Computers and their Applications (3 cr.)

Offered in fall and spring.

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. This course is intended for arts students.

CSCE 106 Fundamentals of Computer Science (3 cr.)

Prerequisites: College level preparation course in Mathematics or MACT 100. Offered in fall and spring.

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.

CSCE 110 Programming Fundamentals (3 cr.)

Prerequisites: CSCE 106. Offered in fall and spring.

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.

CSCE 201 Information Technology (3 cr.)

Prerequisites: Sophomore standing or higher. Offered once every year.

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.)

172 Undergraduate

CSCE 210 Data Structures and Algorithms (3 cr.)

Prerequisites: CSCE 110. Offered in fall and spring.

The role of data structures in software engineering and algorithm design. Abstract data types and classes: concepts, data models, and levels of abstraction. Recursion. Analysis of algorithms. Elementary data structures and their implementation: arrays, strings, structures and files. Specification, implementation and application of stacks, queues, lists, trees and graphs. Searching and sorting algorithms.

CSCE 230 Digital Logic Design (3 cr.)

Same as PHYS 319, EENG 210. Prerequisites: CSCE 106. Offered in fall and spring.

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. The laboratory component will cover experiments in digital electronics.

CSCE 231 Computer Organization and Assembly Language Programming (3 cr.)

Same as EENG 352. Prerequisites: CSCE 110. Offered in fall and spring.

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).

CSCE 239L Digital Logic Design Lab (1 cr.)

Same as EENG 218L and PHYS 309L. Prerequisites: Concurrent with CSCE 230. Offered in fall and spring.

The laboratory will cover experiments in digital design and experiments illustrating material of course CSCE 230.

CSCE 253 Fundamentals of Database Systems (3 cr.)

Prerequisites: CSCE 210. Offered in fall and spring.

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.

CSCE 315 Programming Language (1-2 cr.)

Prerequisites: CSCE 210. Offered occasionally.

A programming language different from those studied in CSCE 106 and 110 will be presented according to the interest of both students and faculty. Students may repeat this course with different languages but only a maximum of four credits can be counted toward the concentration requirements.

CSCE 316 Programming in Java (3 cr.)

Prerequisites: CSCE 210. Offered occasionally.

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.

CSCE 317 Object Oriented Programming (3 cr.)

Prerequisites: CSCE 210. Offered Occasionally.

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.

CSCE 321 Analysis and Design of Algorithms (3 cr.)

Prerequisites: CSCE 210 and MACT 200. Offered in fall and spring.

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.

CSCE 325 Concepts of Programming Languages (3 cr.)

Prerequisites: CSCE 210. Offered in fall and spring.

Comparative study of abstraction, syntax, semantics, binding times, data and sequence control, runtime resources, translators, and storage of programming languages. Programming projects using selected programming languages to enhance practical aspects.

CSCE 330 Computer Architecture (3 cr.)

Same as EENG 455. Prerequisites: CSCE 230 and 231. Offered in fall and spring.

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.

CSCE 333 Data and Computer Communications (3 cr.)

Prerequisites: CSCE 210 and PHYS 215. Offered in fall and spring.

Data transmissions. Transmission media, data encoding, data link control, and multiplexing. Introduction to wide area networks and local area networks technology and systems.

CSCE 339L Computer Architecture Lab (1 cr.)

Same as EENG 458. Prerequisites: Concurrent with CSCE 330. Offered in fall and spring.

The laboratory will cover experiments in computer architecture and hardware design and experiments illustrating material of course CSCE 330.

174 Undergraduate

CSCE 341 Software Engineering (3 cr.)

Prerequisites: CSCE 210. Offered in fall and spring.

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.

CSCE 345 Operating Systems (3 cr.)

Prerequisites: CSCE 210 and 330. Offered in fall and spring.

Operating systems concepts and structure. The Kernel, interrupts, system calls. Process concepts, operations, and implementation. Threads. Concurrency, interprocess communication and synchronization. Process scheduling. Resources and deadlocks. Memory management: swapping, paging, segmentation, virtual memory. File system interface, protection. Case studies: Windows, Linux, and MINIX.

CSCE 401 Internet-based Information Systems (3 cr.)

Same as MOIS 402. Prerequisites: MOIS 305. Offered in fall and spring.

The World Wide Web as a business domain, EBusiness and ECommerce, Network Options and Infrastructure, HTML/XML and WWW Site Design, Emerging technologies, WWW Tools, Internet Issues and Implications (Security issues, social and ethical issues, legal issues), Costs and Resources, Internet Services Providers.

CSCE 422 Theory of Computing (3 cr.)

Prerequisites: MACT 200 and Senior standing. Offered in fall and spring.

Finite automata and regular expressions, context-free grammars and pushdown automata, non-determinism. Context-sensitive grammars and the Chomsky hierarchy of grammars. Turing machine and the halting problem. Undecidable problems. Church's Conjecture and its implications.

CSCE 427 Introduction to Artificial Neural Networks (3 cr.)

Prerequisites: CSCE 210, MACT 231 and MACT 240. Offered Occasionally.

An introduction to basic concepts in the design, analysis, and application for computational neural networks. Mathematical models of biological neurons. Multilayer perceptrons backward error propagation. Hopfield networks and Boltzmann machines. Radial-basis function networks. Kohonen self-organizing feature maps. Adaptive Resonance Theory networks.

CSCE 430 Computer Hardware Design and Applications (3 cr.)

Prerequisites: CSCE 330. Offered occasionally.

FPGs. CPLDs. Processor design philosophy (CISC vs. RISC). Advanced pipelining. Super scaler. Instruction-level parallelism. Designing I/O systems. System buses. Cache design. Reconfigurable computer machines. Systolic architectures. Micro controllers. Device interfacing and VHDL.

CSCE 432 Embedded Systems (3 cr.)

Prerequisites: CSCE 345. Offered in spring.

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-

Computer Science and Engineering 175

time resource management techniques, and application-level embedded system design concepts such as basic signal processing and feedback control.

CSCE 435 Wide Area Networks (3 cr.)

Prerequisites: CSCE 210 and PHYS 215. Offered in fall.

Communication architecture and protocols. Networks, internetworking and transport protocols. Issues of mobile computing, network security, and network applications.

CSCE 436L Local Area Networks Lab (1 cr.)

Prerequisites: Concurrent with CSCE 437. Offered in spring.

The laboratory will cover experiments in Local Area Networks to support and illustrate the material of the course CSCE 437.

CSCE 437 Local and Metropolitan Area Networks (3 cr.)

Prerequisites: CSCE 333. Offered in spring.

Introduction to LAN, MAN and WAN. Topologies and transmission media. Protocol Architecture and Logical Link Control. Traditional LANs. High-Speed Ethernet-Like LANs, FDDI. ATM LANs. Wireless LANs. Network performance and management.

CSCE 438L Embedded Systems Lab (1 cr.)

Prerequisites: Concurrent with CSCE 432. Offered in spring.

The laboratory will cover experiments in embedded systems illustrating material of course CSCE 432.

CSCE 439L Wide Area Networks Lab (1 cr.)

Prerequisites: Concurrent with CSCE 435. Offered in fall.

The laboratory will cover experiments in computer networks illustrating material of course CSCE 435.

CSCE 441 Object-Oriented Analysis and Design (3 cr.)

Prerequisites: CSCE 341. Offered occasionally.

The structure of complex systems. The evolution and elements of the object model. The nature of objects and classes. Relationships among classes and objects. Object-oriented analysis and design. Putting key object-oriented techniques to work in constructing large-scale software systems. Case studies covered to demonstrate the use of an object-oriented development process in the construction of software systems. Object-oriented metrics. Testing object-oriented software. Performance evaluation. Advanced topics including design patterns and component-based software development.

CSCE 445 Fundamentals of Distributed Systems (3 cr.)

Prerequisites: CSCE 345. Offered in fall.

Introduction to distributed systems. Modeling, specifications, consistency, fault tolerance, inter-process communication, network and distributed operating systems, distributed mutual exclusion, distributed deadlock detection, load balancing and process migration.

CSCE 446 Computer Security (3 cr.)

Prerequisites: CSCE 345. Offered occasionally.

Fundamentals of computer security. Identification and authentication. Access control,

176 Undergraduate

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.

CSCE 447 Compiler Design (3 cr.)

Prerequisites: CSCE 325 and 422. Offered in fall and spring.

Principles and practices in the design of compilers. Lexical analysis. Syntax analysis, top-down and bottom-up parsing. Syntax-directed translation and syntax trees. Declarations, types, and symbol management. Runtime environments, storage organization, parameter passing, dynamic storage allocation. Intermediate languages and intermediate code generation. Code generation and optimization. Project: students construct a simple compiler that generates un-optimized code.

CSCE 448 Secure Systems Engineering (3 cr.)

Prerequisites: CSCE 341 and 345. Offered in fall and spring.

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.

CSCE 453 Database Systems (3 cr.)

Prerequisites: CSCE 253. Offered occasionally.

Advanced relational database theory: functional dependencies, multi-valued 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.

CSCE 455 Computer Graphics (3 cr.)

Prerequisites: CSCE 210 and MACT 240 or concurrent. Offered occasionally.

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.

CSCE 456 Design of Web-based Systems (3 cr.)

Prerequisites: CSCE 253. Offered in fall and spring.

Introduction to the Web as a platform, the Web as an n-tier client-server architecture, basic components of a web-based application, developing static and dynamic web pages. Enhancing Web pages using Scripting languages. Developing Web-based applications. Using Server-extension techniques and tools. Introduction to XML and its associated technologies. Emerging technologies and tools on the web. Wireless Web protocols and techniques.

CSCE 465 Artificial Intelligence (3 cr.)

Prerequisites: CSCE 325 and MACT 200. Normally offered in fall.

Problem spaces and application areas in engineering and science. LISP or PROLOG programming. AI architecture, knowledge representation, hierarchical planning. Machine

Computer Science and Engineering 177

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.

CSCE 485 Selected Topics in Computer Science and Engineering (1-3 cr.)

Prerequisites: permission of instructor. Offered in fall and spring.

Topics chosen according to special interests of faculty and students. May be repeated for credit more than once if content changes.

CSCE 490 Industrial Training (1 cr.)

Prerequisites: junior standing. Offered in fall and spring.

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. Graded pass or fail

CSCE 491 Senior Project I (1 cr.)

Prerequisites: CSCE 341 or concurrent and Senior standing. Offered in fall and spring.

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.

CSCE 492 Senior Project II (2 cr.)

Prerequisites: CSCE 491. Offered in fall and spring.

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.

CSCE 495 Guided Studies in Computer Science and Engineering (1-3 cr.)

Prerequisites: consent of instructor. Offered in fall and spring.

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.

178 Undergraduate

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 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

Construction & Architectural Engineering 179

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)

180 Undergraduate

- *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 cr.)
 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.)

Construction & Architectural Engineering 181

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 Structures

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.)

182 Undergraduate

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

For information on the joint BSc/CEMG-Master's in Public Administration, please see the Department of Public Policy and Administration in the Graduate Programs section.

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

Construction & Architectural Engineering 183

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.)

184 Undergraduate

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 (94 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 - Advanced Computer-Aided Architectural Design and Workshop (3 cr.)
 AENG 490 - Senior Project I (1 cr.)
 AENG 491 - Senior Project II (3 cr.)

History and Humanities:

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 - Building Finishes and Construction Details (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 305 - Structural Design for Architects I (3 cr.)
 CENG 306 - Structural Design for Architects II (3 cr.)

Construction & Architectural Engineering 185

CENG 423 - Methods and Equipment for Construction I (3 cr.)
 CENG 441 - Introduction to Construction Management and Cost Estimating (3 cr.)

Concentration Electives (6 credits)

Students should take two courses 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.)
 ARTV 211 - World Art Survey I (3 cr.)
 ARTV 212 - World Art Survey II (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 (0-6 credits):

Students may take courses of their selection to satisfy total program requirement of 162 credit hours.

Minor in Architectural Design

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:

1. A minimum GPA of 2.7 to be accepted in the minor.
2. 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):

186 Undergraduate

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.

Architectural Engineering Courses (AENG)

AENG 222 Architecture: Art or Engineering (3 cr.)

Same as ARTV 222.

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.

AENG 234 Human Aspects in Architectural Design (3 cr.)

Prerequisites: AENG 273 or concurrent AENG 251.

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, proxemics. 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.

AENG 250 Foundations of 3-Dimensional Design (3 cr.)

Same as ARTV 250.

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. Four-hour studio period.

Construction & Architectural Engineering 187

AENG 251 Introduction to Architectural Design (3 cr.)

Prerequisite: AENG 273.

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. One-hour class period and three-hours studio period.

AENG 268 Surveying for Architects (1 cr.)

Prerequisite: MACT 132.

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. Three-hour lab period.

AENG 273 Digital Representation Tools for Architects (2 cr.)

Prerequisites: ENGR 115. Offered in fall and spring.

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.

One-hour class period and three-hour lab period.

AENG 321 Introduction to Architectural Engineering (3 cr.)

Prerequisite: CENG 215. Offered in fall and spring.

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. Two-hours lecture period and three-hour lab period.

AENG 323 Construction Materials and Quality Control (3 cr.)

Prerequisite: ENGR 229.

Types and properties of construction materials with emphasis on types used by architects. Concepts of quality control and statistical evaluation with corresponding experimental work. Aggregates and inorganic cements. Portland cement concrete mix design and admixtures. Bitumen and other moisture, thermal and sound insulating materials. Building finishes and aesthetics of construction materials. Timber and decorative materials.

Two one-hour class periods and three-hour lab period.

AENG 326 Environmental Control Systems and Sustainable Design (3 cr.)

Prerequisites: PHYS 111, MACT 132 and AENG 251.

Basic principles and application of environmental systems: acoustic, lighting, HVAC, energy use, and their integration with the building envelop. Performance of the building envelops materials and assemblies. Introduction to LEED and similar systems. Sustainable design principles and its applications. Sustainable design project.

Three-hour studio period and three-hour lab period.

188 Undergraduate

AENG 351 Architectural Design Studio I (4 cr.)

Prerequisites: AENG 251 and AENG 234.

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. Six-hour studio period.

AENG 352 Architectural Design Studio II (4 cr.)

Prerequisites: ARTV 314, ARTV 221 and AENG 351.

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. Six hours studio period.

AENG 368 Housing Design and Geographic Information Systems (3 cr.)

Prerequisites: AENG 268 and AENG 351.

Context, history and framework of regional, city and urban planning. Concepts, features and characteristics of human settlements. Interrelationship between socio-cultural contexts and housing processes. Design of housing areas and housing units. Design of ‘appropriate’ and ‘responsive’ residential environments within specific resources. Concepts and system components of GIS. Creation and management of a geodatabase. GIS analysis and applications in housing projects.

Three-hour studio period and three hour lab period.

AENG 420 Design of Interior Spaces (3 cr.)

Prerequisites: CENG 215 or AENG 273.

Historical background of Interior Design Styles. Concepts and principles of interior design. Space planning and design. Aesthetics of Interior Design. Color and lighting. Materials selection. Function, material and layout of furniture and textiles. Design for the disabled. Ergonomics and design. Mood Board design. Design drawing and detailing.

One-hour class period and three-hour Studio period.

AENG 426 Building Service Systems and Building Systems Integration (3 cr.)

Prerequisite: AENG 326.

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.

Two-hour class period and three-hour lab period.

AENG 428 Building Finishes and Construction Details (3 cr.)

Prerequisite: CENG 423.

Construction details, materials selection, and methods of construction of building finishes:

Construction & Architectural Engineering 189

floors, walls, ceiling; stairs, openings, installations, specialty works. Design/ detailing project. One-hour class period and three-hour studio period.

AENG 429 Design Development and Construction Documents (3 cr.)

Prerequisite: AENG 428.

Development of design into technical documents. Production of construction documents. Design of construction assemblies, constructability aspects and choice of materials. Building coordination and integration using Building Information Modeling applications. Drawing conventions and symbols. Building permit package. Basics of technical specifications.

Six-hour studio period.

AENG 441 Professional Practice, Design Management and Codes (2 cr.)

Prerequisites: AENG 251 and CENG 441.

Types of architecture firms. Design process management. Business management of architecture firms. Procurement of architectural services. Architects' administrative role. Architecture practice stakeholders. Building contracts and legal aspects. Building codes. Introduction to real-estate investment concepts.

AENG 453 Architectural Design Studio III (4 cr.)

Prerequisites: AENG 326 and AENG 352.

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 analyses and designs. Conservation and recycling of materials and waste management.

Six hour studio period.

AENG 454 Architectural Design Studio IV (4 cr.)

Prerequisites: AENG 453 and CENG 306.

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. Six-hour studio period.

AENG 455 Architectural Design Studio V (4 cr.)

Prerequisites: AENG 426, AENG 454 and AENG 473.

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

190 Undergraduate

architecture. Six-hour studio period.

AENG 456 Architectural Design Studio VI (4 cr.)

Prerequisites: AENG 455, ARIC 205, EGPT 203, and AENG 468.

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.

Six-hour studio period.

AENG 468 Urban Design and Landscape Architecture (3 cr.)

Prerequisites: AENG 368.

Study & Analysis of Visual Elements. Urban Form, Grain, Texture, and Fabric. The Phenomenon of Perception. Space, Time, and Function. Space and Path Visual Analysis. Study & Analysis of Historic Urban Squares, Piazzas and similar spaces. Form and space generation in landscape architecture. Elements of Landscape Architecture.

One-hour class period and three-hour studio period.

AENG 473 Advanced Computer-Aided Architectural Design and Workshop (3 cr.)

Prerequisite: AENG 251.

In depth application of advanced CAD concepts. Real time computer graphics. Computer applications for performance animation, virtual reality and interactivity.. Modeling, texture mapping, environments, navigation, lighting, animation and sound. Generative design and Avatars. Digital tools and methods of design with manual tools within the design process. Computational design methodologies, visualization, digital fabrication, cost-estimation, scheduling and facility management. Parametric design and Building Information Modeling (BIM). Applications through workshop on digital fabrication.

Two one-hour class periods and three-hour Lab period.

AENG 480 Special Problems in Architectural Engineering (1-3 cr.)

Prerequisites: Consent of instructor and department chair on the basis of a well-defined proposal. Offered in fall and spring.

Independent study in various problem areas of construction may be assigned to individual students or groups. Readings assigned and frequent consultations held. May be repeated for credit if content changes.

AENG 490 Senior Project I (1 cr.)

Prerequisite: AENG 455. Offered in fall and spring

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. Two-hour studio period.

AENG 491 Senior Project II (3 cr.)

Prerequisites: AENG 490. Offered in fall and spring.

A continuation of senior project I. Comprehensive architectural design demonstrating an understanding of the different conceptual and technical aspects of architecture.

Construction & Architectural Engineering 191

Six hour studio period.

AENG 494 Selected Topics in Architectural Engineering (3 cr.)

Prerequisites: senior standing. Offered in fall and spring.

Specialized topics in Architectural engineering will be selected and presented.

AENG 496 Internship in Construction Projects (0 cr.)

Prerequisites: CENG 423. Offered in fall.

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.

AENG 497 Internship in Technical Drawing and Design (1 cr.)

Prerequisite: AENG 429. Offered in fall.

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.

Construction Engineering Courses (CENG)

CENG 215 Drawing for Construction Engineering and Architecture (1 cr.)

Prerequisites: ENGR 115. Offered in fall and spring.

Architectural and structural drawings. Roads and hydraulic works drawings. Construction details. Electromechanical drawings for construction. One three-hour lab period.

CENG 280 Construction Surveying (3 cr.)

Prerequisites: MACT 132. Offered in fall and spring.

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.

Two class periods and three-hour lab period.

CENG 301 Structural Analysis (4 cr.)

Prerequisites: ENGR 212 and ENGR 229 or concurrent. Offered in fall and spring.

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.

Three class periods and three-hour tutorial.

CENG 302 Structural Analysis for Architects (3 cr.)

Prerequisites: ENGR 212. Offered in fall and spring.

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

192 Undergraduate

structures using commercial computer software. Assessment of trusses, beams, frames and arches with respect to geometric, loading and supporting conditions.

CENG 305 Structural Design for Architects I (3 cr.)

Prerequisites: CENG 302. Offered in fall and spring.

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.

CENG 306 Structural Design for Architects II (3 cr.)

Prerequisites: CENG 305. Offered in fall and spring.

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.

CENG 307 Structural Design (4 cr.)

Prerequisites: CENG 301. Offered in fall and spring.

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.

Three class periods and three-hour tutorials.

CENG 311 Fundamentals of Hydraulic Engineering (3 cr.)

Prerequisites: ENGR 261 and ENGR 313 (or concurrent). Offered in fall and spring.

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.

Two class periods and three hour lab period.

CENG 323 Construction Materials and Quality Control I (4 cr.)

Prerequisites: ENGR 229. Offered in fall and spring.

Types and properties of construction materials and components. Concepts of quality control, statistical evaluation and corresponding experimental work. Aggregates types, sources and quality. Inorganic cements. Concrete mix design, admixtures and quality control. Asphalt cement, asphalt concrete mix design and quality control. Steel in construction. Masonry materials, timber, insulation materials and coatings.

Three class periods and three-hour lab period.

CENG 325 Mechanical Engineering in Construction (2 cr.)

Prerequisites: ENGR 261. Offered in fall and spring.

Introduction to energy transformation systems. Sizing, matching and installation of mechanical, plumbing, heating, ventilation and air conditioning (HVAC) and machining systems.

One class period and three-hour lab period.

Construction & Architectural Engineering 193

CENG 331 Geology for Engineers (2 cr.)

Prerequisites: CENG 280. Offered in fall and spring.

Minerals and rock types, superficial deposits, interpretation of geologic maps, structural geology, geologic exploration, ground water cycle, geology of Egypt and greater Cairo.

CENG 403 Design of Steel Structures (3 cr.)

Prerequisites: CENG 303. Offered in fall and spring.

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.

CENG 411 Soil Mechanics (3 cr.)

Prerequisites: ENGR 229 and CENG 311. Offered in fall and spring.

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.

Two class periods and three-hour lab period.

CENG 423 Methods and Equipment for Construction I (3 cr.)

Prerequisites: AENG 321 and CENG 305 or CENG 307. Offered in fall and spring.

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.

Two class periods and three-hour field trip period.

CENG 424 Methods and Equipment for Construction II (2 cr.)

Prerequisites: CENG 423. Offered in fall and spring.

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.

CENG 426 Steel and Concrete Bridges (3 cr.)

Prerequisites: CENG 307.

Types of bridges. Loads; dead, live, impact, wind and other loading. Basic design and construction of various types of bridges; truss, beam and plate girder, slab, box girder. bearings and expansion details.

CENG 427 Prefabricated, Water and Pre-stressed Concrete Structures (3 cr.)

Prerequisites: CENG 307.

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. Pre-stressed concrete; basic principles, methods and systems of pre-stressing, partial loss of pre-stressing, analysis and design for flexural, shear, bond and bearing.

CENG 428 Tall Buildings and Large Span Structures (3 cr.)

Prerequisites: CENG 306 or CENG 307. Offered occasionally.

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

194 Undergraduate

buildings. Roof systems for large span areas and arenas: shell structures; folded plates; tensile structures and canopies.

CENG 431 Transportation Engineering (3 cr.)

Prerequisites: ENGR 214 and CENG 323. Offered in fall and spring.

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.

CENG 441 Introduction to Construction Management and Cost Estimating (3 cr.)

Prerequisites: ENGR 345. Offered in fall and spring.

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

CENG 442 Construction Project Specifications, Bids, and Contracts (3 cr.)

Prerequisites: CENG 441. Offered in fall and spring.

Participants in a construction contract. Contract definition. Types of contracts; formation principles of a contract, performance or breach of contractual obligations. Analysis and comparison of the different kinds of construction contracts. Bidding logistics. Legal organizational structures. Different types and uses of specifications. Different forms of contracts utilized in construction.

CENG 443 Project Management for Multi-National Environments (3 cr.)

Prerequisites: CENG 441.

Introduction to multinational Projects. Managing multinational Projects: Managing Cross-Cultural Differences, Communication, Standards, Approaches to Problem Solving, Cross-Culture Differences & Engineering Firms, Avoiding Cross-Cultural Pitfalls, Breaking into Foreign Markets, Taking Advantage of Cultural Diversity. Distance Management. Asset Management.

CENG 444 Risk Management and Bidding Strategies (3 cr.)

Prerequisites: CENG 441.

Introduction to Risk and Uncertainty. Process of Risk Management: Risk Identification, Risk Analysis (Qualitative and Quantitative), Risk Response Planning, Risk Monitoring and Control, Tools and Techniques: Decision Trees, PERT, modeling, optimization, Monte Carlo Simulation and application. Accounting for Project Risks. Introduction to Risk Analysis packages (Crystal Ball, PERT Master). Analyzing the Bidding Behavior of Key Competitors, Estimating Optimum Markup.

CENG 445 Resource Management (3 cr.)

Prerequisites: CENG 441.

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.

Construction & Architectural Engineering 195

CENG 446 Techniques of Planning, Scheduling and Control (3 cr.)

Prerequisites: CENG 441. Offered in fall and spring.

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.

CENG 447 Design, Modeling and Simulation of Construction Systems (3 cr.)

Prerequisites: CENG 423.

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.

Two one-hour class periods and three-hour lab period.

CENG 448 Financial Management and Accounting for Construction (3 cr.)

Prerequisites: CENG 442. Offered in fall and spring.

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.

CENG 449 Systems Analysis for Construction Engineering (3 cr.)

Prerequisites: ENGR 313, CENG 446. Offered occasionally.

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.

CENG 452 Structural Systems and Advanced Design (3 cr.)

Prerequisites: CENG 306 or CENG 307.

Structural design process, structural performance criteria, choice of structural system, design topics for reinforced concrete and steel structures including: rigid frames, ribbed and flat floor systems, torsion, biaxial bending, deflections, composite construction.

CENG 453 Construction Materials and Quality Control II (3 cr.)

Prerequisites: CENG 323.

Various types of advanced concrete, metals, and highway materials. Examples are concrete admixtures, special concretes, special construction alloys, soil stabilizers, and bituminous materials and high strength low alloy steels. Advanced mechanics of components incorporating innovative materials. Environmental-friendly use of materials and incorporation of waste materials. Advanced quality control techniques. Laboratory experiments are conducted for demonstration purposes.

CENG 454 Structural Mechanics (3 cr.)

Prerequisites: CENG 307.

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

196 Undergraduate

of structural dynamics; structural stability principles, buckling analysis, and P-Delta effect; introduction to theory of plates and shells.

CENG 461 Design and Construction of Foundations and Retaining Structures (3 cr.)

Prerequisites: CENG 411. Offered in fall and spring.

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.

CENG 462 Applications in Geotechnical Engineering (3 cr.)

Prerequisites: CENG 461 or concurrent. Offered occasionally.

Geotechnical analysis and design concepts applied to engineering projects: stability of natural and manmade soil and rock slopes, reinforced earth, deep soil stabilization, cofferdams, mat foundation, deep foundation under various loading conditions.

CENG 471 Environmental and Sanitary Engineering (3 cr.)

Prerequisites: CENG 311. Offered in fall and spring.

Water quality. Material balance relationships and water pollution control. Water demand. Drinking water: collection, treatment, distribution and quality assurance. Domestic and industrial wastewater collection, treatment and disposal. Environmental Impact Assessment.

CENG 472 Design of Water Resources Systems (3 cr.)

Prerequisites: CENG 411. Offered occasionally.

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.

CENG 473 Unit Operations in Environmental Engineering (3 cr.)

Same as ENVE 562 but with additional requirements for graduate students. Prerequisites: CENG 471 concurrent.

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.

CENG 474 Computer-aided design of environmental and sanitary systems (3 cr.)

Prerequisites: CENG 311.

Sanitary, storm water and combined sewerage systems: selection, elements, layout, computer-assisted hydraulic modeling and design. Water supply and distribution systems: hydraulic modeling and design. Sanitary pipe works in buildings and fire fighting systems. Modeling of pollutant transport in streams.

CENG 475 Solid and Hazardous Wastes Engineering (3 cr.)

Same as ENVE 566, but with additional requirements for graduate students. Prerequisites: Senior standing.

Solid wastes – Nature, generation and collection. Local and regional management strategies including recycling and recovery of useful products, land-filling, and incineration. Hazardous wastes – Nature, generation and collection. Risk assessment. Management

Construction & Architectural Engineering 197

strategies including source reduction, treatment, recovery, land-filling, and incineration.

CENG 479 Assessment, Protection and Repair of Structures (3 cr.)

Same as CENG 579, but with additional requirements for graduate students. Prerequisites: CENG 307 and CENG 323.

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.

CENG 480 Special Problems in Construction Engineering (1-3 cr.)

Prerequisites: consent of instructor and department chair on the basis of a well-defined proposal. Offered in fall and spring. Independent study in various problem areas of construction may be assigned to individual students or groups. May be repeated for credit if content changes. Readings assigned and frequent consultations held.

CENG 481 Highway Facilities (3 cr.)

Prerequisites: CENG 431. Offered occasionally.

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.

CENG 490 Senior Project I (1 cr.)

Prerequisites: completion of 78 credits in major. Offered in fall and spring.

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.

CENG 491 Senior Project II (2 cr.)

Prerequisites: CENG 490. Offered in fall and spring.

An applied cap stone project. Continuation of senior project I topics is encouraged. Actual construction projects are selected by groups of students upon advisors' approval for analysis. The management and technology aspects of construction are simulated and investigated.

CENG 494 Selected Topics in Construction Engineering (3 cr.)

Prerequisites: senior standing. Offered in fall and spring.

Specialized topics in construction engineering will be selected and presented.

CENG 497 Practical Training (1 cr.)

Prerequisites: completion of 96 credit . Offered in fall.

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.

198 Undergraduate

Development Studies

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

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.

Minor

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 304 - Development Agencies (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 239 - 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 - Global 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.)

200 Undergraduate

Economics

Department of Economics School of Business

Professors Emeritus: G. Amin, W. Mikhail

Professors: A. Beshai (Director of Graduate Studies), A. El Shazly

Associate Professors: A. Kamaly (Chair), H. El-Ramly, N. Rizk, (Associate Dean for Graduate Studies and Research), J. Salevurakis, T. Selim

Assistant Professors: M. Abdel Baki, M. Bouaddi, D. El Edel, M. Al-Ississ, I. Rahmani, M. Said, A. Seghir (Associate Dean for Undergraduate Studies and Administration), A. El-Shennawy

Assistant Professor (ABD): S. Atallah

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.

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" in ECON 201 and 202
- Earn a minimum of "B" in ECON 216

Based on the available space a limited number of students who have earned the required grades in these courses and who meet the GPA requirements as determined by the department will be accepted in the major.

Economics 201

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 (51 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 **Five** other courses in economics*

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 (9 credits)

- ACCT 201 - Financial Accounting (3 cr.)
- CSCE 102 - Introduction to Computers and their Applications (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.

Minor in Economics

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.)

202 Undergraduate

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.

Economics Courses (ECON)

ECON 199 Selected Topic for Core Curriculum (3 cr.)

Prerequisites: RHET 101. Offered in fall and spring.

Course addressing broad intellectual concerns and accessible to all students, irrespective of major. This course does not count as part of Economics major or minor requirements.

ECON 201 Introduction to Macroeconomics (3 cr.)

Offered in fall and spring.

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.

ECON 202 Introduction to Microeconomics (3 cr.)

Offered in fall and spring.

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.

ECON 215 Economic History of the Modern Middle East (3 cr.)

Offered in fall and spring.

Historical survey of the economic conditions, systems, and institutions of the Middle East with special emphasis on the period 1800-1945.

ECON 216 Mathematics for Economists I (3 cr.)

Prerequisites: MACT 100 or equivalent. Offered in fall and spring.

Calculus of a single variable. Composite functions, limits and asymptotes, continuity, differentiation, Taylor's theorem, maxima and minima and points of inflexion, logarithmic and exponential functions, integration. Applications to economic theory and business finance. MACT 131 and MACT 132 are not equivalent to ECON 216.

ECON 218 Statistics for Economists (3 cr.)

Prerequisites: MACT 112. Offered in fall and spring.

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 Chisquared & Index numbers.

ECON 224 Economic History (3 cr.)

Offered in fall and spring.

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.

ECON 301 Intermediate Macroeconomic Theory (3 cr.)

Prerequisites: ECON 201, ECON 216. Offered in fall and spring.

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.

ECON 302 Intermediate Microeconomic Theory (3 cr.)

Prerequisites: ECON 202 and ECON 316. Offered in fall and spring.

Preferences, utility theory, and derivation of consumer demand. Convergence conditions in consumer choice. Slutsky decomposition. Supply, cost structure, factor inputs, and technology. Properties of production functions including the Euler Theorem. Monopoly, duopoly (Bertrand and Cournot), oligopoly, monopolistic, and competitive markets. The extent of market entry. Labor choice, the capital asset pricing model, and technological innovation. Introduction to game theory. General equilibrium and welfare economics.

ECON 303 Money and Banking (3 cr.)

Prerequisites: ACCT 201 plus ECON 201 and 202. Offered in fall and spring.

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

ECON 308 Labor Economics (3 cr.)

Prerequisites: ECON 201 and 202. Offered in fall and spring.

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)

204 Undergraduate

ECON 309 Emerging Economies (3 cr.)

Prerequisites: ECON 201 and 202. Offered occasionally.

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.

ECON 310 Public Finance (3 cr.)

Prerequisites: ECON 201 and 202. Offered in fall and spring.

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 (3 cr.)

Prerequisites: ECON 201, 202. Offered in fall and spring.

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.

ECON 316 Mathematics for Economists II (3 cr.)

Prerequisites: ECON 216. Offered in fall and spring.

Matrix algebra and input-output analysis. Determinant, rank, and inverse of a matrix. Cramer's rule. Multivariable functions and partial derivatives. Constrained and unconstrained optimization. Homogeneous and homothetic properties. First-order difference and differential equations. Applications to economic theory.

ECON 318 Introduction to Econometrics (3 cr.)

Prerequisites: ECON 218 and 316. Offered in fall and spring.

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.

ECON 320 The Digital Economy: Information Technology, Knowledge and Intellectual Property (3 cr.)

Prerequisites: ECON 201 and 202. Offered in fall and spring.

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.

ECON 348 Agricultural Economics (3 cr.)

Prerequisites: ECON 201 and 202. Offered occasionally.

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.

ECON 403 International Trade (3 cr.)

Prerequisites: ECON 301 and 302. Offered in fall and spring.

International Trade Theory: Mercantilist Theory, comparative costs, and post Ricardian theories including economies of scale and imperfect competition. Protection Theory; Effective Protection. Terms of trade, national income and the balance of payments. Fluctuations in trade. Foreign exchange markets, exchange rates and adjustment in the balance of payments. International resource movements.

ECON 405 History of Economic Thought (3 cr.)

Prerequisites: ECON 201 and 202. Offered in fall and spring.

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.

ECON 411 Seminar: Special Topics in Economics (3 cr.)

Offered occasionally.

Guided reading, research, and discussion of specific topics chosen by the instructor in theoretical policy or applied economics. May be taken for credit more than once if content changes.

ECON 413 Cost-Benefit Analysis (3 cr.)

Prerequisites: ECON 302. Offered in fall and spring.

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.

ECON 414 Economics of Egypt (3 cr.)

Prerequisites: ECON 312. Offered in fall and spring.

An analysis and assessment of the performance of the economy of modern Egypt with emphasis on its development since the 1952 revolution and up till the introduction of the structural adjustment program. This includes a detailed discussion of the major problems facing agricultural and industrial development.

ECON 415 Seminar on Economic Development in the Middle East (3 cr.)

Prerequisites: ECON 201. Offered occasionally.

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.

ECON 416 Mathematical Economics (3 cr.)

Prerequisites: ECON 316. Offered in fall and spring.

206 Undergraduate

Quasi-concave programming. Arrow-Einshoven and Kuhn-Tucker conditions. Second-order difference and differential equations. Steady-state equilibrium and the saddle path. Dynamic optimization. Hamiltonian functions and transversality conditions. Applications to economic theory.

ECON 418 Econometric Methods (3 cr.)

Prerequisites: ECON 318. Offered in fall.

Extensions of the classical linear model. Instrumental variables. Errors in variables. Maximum likelihood estimation. Simultaneous equation systems. Vector auto-regressions, error correction models, non-stationarity and co-integration.

ECON 418P Practicum (1 cr.)

Offered in fall.

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.

ECON 420 Independent Study (3 cr.)

Prerequisites: consent of instructor and unit head, senior standing. Offered in fall and spring. Guided reading, research, and discussion based on a subject of mutual interest to a student and faculty member.

Egyptology

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

Professor Emeritus: K. Weeks

Professors: F. Haikal, S. Ikram (SAPE Chair)

Associate Professor: M. Ayad

Assistant Professor: L. Sabbahy

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 in 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 (3 cr.)
- EGPT 344 - History of Ancient Egypt II (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.)

208 Undergraduate

- 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 - A Cultural Geography of Ancient Egypt (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.)

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.

Minor in Egyptology

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 (3 cr.)
- EGPT 344 - History of Ancient Egypt II (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.)

Minor in Coptic Studies

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.)
 The course may be taken more than once if the topic changes.

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.

Egyptology Courses (EGPT)

EGPT 199 Selected Topic for the Core Curriculum (3 cr.)

Course addressing broad intellectual concerns and accessible to all first-year students as part of the Primary Level Core.

EGPT 202 Ancient Egypt (3 cr.)

Offered each semester.

An introduction to history, society, religion, art and architecture of Ancient Egypt, including

210 Undergraduate

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.

EGPT 203 Introduction to Egyptian Architecture (3 cr.)

Prerequisites: Only open to declared architecture majors and Egyptology majors.

A basic class on Egyptian architecture, comprised of a brief introduction to the culture of the ancient Egyptians, followed by a series of lectures dealing with Egyptian architecture, the typology of Egyptian architecture, and the role it played in Egyptian society and culture. The raw materials and tools used by the Egyptians will be covered, as well as some of the motifs used in the buildings, and their ideas about architecture, including their use of light, water, and space in the buildings. The course includes sections on temples, tombs, and, with a brief discussion of urban planning. The course will conclude with a section on Egypt's legacy to architecture, and how the use of the grammar of architecture changes over time. Field-trips will also constitute an important part of the course and will, in some cases, take the place of class-time.

EGPT 204 Archaeology: Methods and Theories (3 cr.)

Offered occasionally.

The methods and theories of archaeological excavation and interpretation; archaeological evidence of human cultural development; archaeology as a social science.

EGPT 250 Ancient Egyptian Literature in Translation (3 cr.)

Offered occasionally.

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.

EGPT 253 Hieroglyphics I (3 cr.)

Offered in fall.

The course introduces the student to the study of classical Egyptian script, grammar and hieroglyphic texts of the Middle Kingdom.

EGPT 254 Hieroglyphics II (3 cr.)

Prerequisites: EGPT 253. Offered in spring.

The course is a continuation of EGPT 253. Students will concentrate on the verbal forms of classical Egyptian.

EGPT 299 Selected Topic for Core Curriculum (3 cr.)

Prerequisites: RHET 101. Offered occasionally.

Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

EGPT 301 A Cultural Geography of Ancient Egypt (3 cr.)

Prerequisites: instructor's consent. Offered annually.

The class examines Egypt's geography and devotes special attention to the effect of geography upon the development of Ancient Egyptian history and civilization. Egypt's geography past and present will be compared, and the exploitation of Egypt's natural resources will be investigated.

EGPT 304 Culture and Society of Ancient Egypt (3 cr.)

Same as ANTH 304. Prerequisites: either EGPT/HIST 243, 244, EGPT 261 or 262.

Offered occasionally.

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.

EGPT 341 Egypt in the Late Period (3 cr.)

Prerequisites: EGPT/HIST 343 and 344, or instructor's consent. Offered occasionally.

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).

EGPT 342 History of Egypt in the Greco-Roman Era (3 cr.)

Same as HIST 342. Prerequisites: EGPT/HIST 343 and 344, or instructor's consent.

Offered occasionally.

The course will study the history of Egypt in the Greco-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.

EGPT 343 History of Ancient Egypt I: Pre-Dynastic Through Middle Kingdom Egypt (3 cr.)

Offered in fall.

This course covers the history of Egypt from the Pre-dynastic 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.

EGPT 344 History of Ancient Egypt II: Middle Kingdom through Ptolemaic Egypt (3 cr.)

Offered in spring.

This course covers the history of Egypt from the Middle Kingdom to the end of the 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 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 are an important component of the course.

EGPT 346 Societies and Culture of the Ancient Near East (3 cr.)

Same as HIST 346. Prerequisites: EGPT/HIST 343 and 344, or instructor's consent.

Offered occasionally.

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 Hittites,

212 Undergraduate

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.

EGPT 348 Societies and Cultures of Ancient Nubia (3 cr.)

Prerequisites: consent of instructor. Offered occasionally.

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.

EGPT 353 Hieroglyphics III (3 cr.)

Prerequisites: EGPT 254. Offered every fall.

Students will read a number of Egyptian texts and learn how to translate and interpret written documents.

EGPT 361 Art and Architecture of Ancient Egypt I (3 cr.)

Prerequisites: EGPT 202 or consent of instructor. Offered in fall.

The course covers the period between the Pre-dynastic 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 databank that is useful when putting excavated material in context and in analyzing Egyptian art. There will be fieldtrips to the museum and to Giza and Saqqara during the semester.

EGPT 362 Art and Architecture of Ancient Egypt II (3 cr.)

Prerequisites: EGPT 202 or consent of instructor. Offered in spring.

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 fieldtrips to the museum and to other sites, possibly including Luxor, during the semester.

EGPT 400 Introduction to Coptic (3 cr.)

Same as EGPT 505. Prerequisites: EGPT 254. Offered occasionally.

Coptic represents the last stage of the ancient Egyptian language. The course will include reading of selected texts in two Coptic dialects.

EGPT 401 Introduction to Hieratic (3 cr.)

Prerequisites: EGPT 254. Offered occasionally.

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.

EGPT 402 Hieroglyphics IV (3 cr.)

Same as EGPT 501. Prerequisite: EGPT 353. Offered in spring.

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.

EGPT 403 Independent Study in Egyptology (1-3 cr.)

Offered every semester.

Independent research projects in Egyptology, with consent of instructor and student's adviser.

EGPT 440 Ancient Egyptian Religion and Ethics (3 cr.)

Prerequisites: instructor's permission. Offered occasionally.

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.

EGPT 445 Selected Topics in Coptic Studies (3 cr.)

Same as ARIC ANTH, HIST, SOC 445 and EGPT 539. Offered in fall.

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.

EGPT 459 Selected Topics in Cultural Resource Management and Museology (3 cr.)

Same as EGPT 545. Prerequisites: consent of instructor. Offered occasionally.

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.

EGPT 491 Field Work in Egyptological Method and Theory (3 cr.)

Same as EGPT 591. Prerequisites: Permission of instructor.

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.

EGPT 499 Selected Topics in Egyptology (3 cr.)

Prerequisites: junior standing and/or consent of instructor. Offered occasionally.

May be repeated for credit when content changes.

214 Undergraduate

Electronics

Department of Physics
School of Sciences and Engineering

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

Minor

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:

- CSC 330 - Computer Architecture (3 cr.)
- CSC 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.)

Electronics Engineering

Department of Electronics Engineering
School of Sciences and Engineering

Professors: H. Amer, Y. Ismail

Associate Professors: S. Abdel Azeem, A. Abou-Auf (Chair), M. Anis, A. Darwish, A. Elezabi

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

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:

216 Undergraduate

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 cr.)
 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)

Electronics Engineering Courses (EENG)

EENG 210 Digital Logic Design (3 cr.)

Same as CSCE 230 and PHYS 319. Prerequisites: CSCE 106. Concurrent with EENG 218L. Offered in fall, spring and summer.

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.

EENG 215 Circuit Analysis I (3 cr.)

Prerequisites: PHYS 112. Offered in fall and spring.

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.

218 Undergraduate

EENG 216 Circuit Analysis II (3 cr.)

Prerequisites: EENG 215 and concurrent with MACT 233 and EENG 219L. Offered in fall and spring.

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.

EENG 218L Digital Logic Design Lab (1 cr.)

Same as CSCE 239L and PHYS 309L. Prerequisites: Concurrent with EENG 210. Offered in fall, spring and summer.

The laboratory component will cover experiments in digital design and experiments illustrating material of course EENG 210.

EENG 219L Circuit Analysis Lab (1 cr.)

Prerequisites: Concurrent with EENG 216. Offered in fall and spring.
Experiments illustrating material of course EENG 216.

EENG 315 Electronics I: Basic Electronic Devices & Circuits (3 cr.)

Prerequisites: EENG 216. Offered in fall and spring.

Devices and Basic Circuits: Introduction to Electronics, Operational Amplifiers, Diodes, Bipolar Junction Transistors (BJT's), Field Effect Transistors (FET's).

EENG 316 Electronics II: Analog Circuits (3 cr.)

Prerequisites: EENG 315, concurrent with EENG 319L. Offered in fall and spring.

Differential and Multistage Amplifiers, Frequency Response, Feedback, Output Stages and Power Amplifiers, Analog Integrated Circuits, Filters and Tuned Amplifiers, Signal Generators and Waveform Shaping Circuits.

EENG 317 Introduction to VLSI Design (3 cr.)

Prerequisites: EENG 315. Open for Computer Engineering major only.

Design of Complex CMOS gates; combined and sequential design techniques in Very Large Scale Integrated Circuits (VLSI); issues in static transmission gate and dynamic logic design. Bipolar-based logic and ECL. Memories; SRAM, DRAM, PLA.

EENG 318 VLSI Design (3 cr.)

Prerequisites: EENG 210 and EENG 315. Offered in fall and spring.

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.

Two class periods and one three-hour lab period.

EENG 319L Electronics Lab (1 cr.)

Prerequisites: Concurrent with EENG 316. Offered in fall and spring.
Experiments illustrating material of course EENG 316.

EENG 320 Linear Systems Analysis (3 cr.)

Prerequisites: EENG 216 and MACT 233. Offered in fall and spring.
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

EENG 321 Automatic Control (3 cr.)

Prerequisites: EENG 320. Offered in fall and spring.
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, EigenValue 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.

EENG 325 Signals and Systems (3 cr.)

Prerequisites: EENG 216.
Basic properties of signals and systems, superposition integral, Fourier series and Fourier transform for discrete and continuous time signals, sampling theorem. Digital spectra analysis, difference equations, Z-transform, discrete Fourier transform, and digital filters. Open for Computer Engineering major only.

EENG 341 Electromagnetic Theory I (3 cr.)

Same as PHYS 316. Prerequisites: PHYS 112 and MACT 232. Offered in fall and spring.
Electric field and potential. Gauss's law; divergence. Conductors, dielectrics and capacitance. Poisson's and Laplace's equations. Electrostatic analogs. Magnetic field and vector potential. Time varying fields; displacement current. Maxwell's equations in differential form.

EENG 352 Computer Organization and Assembly Language Programming (3 cr.)

Same as CSCE 231. Prerequisites: CSCE 110. Offered in fall and spring.
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).

EENG 360 Power and Machines (3 cr.)

Prerequisites: EENG 216 and EENG 341. Offered in fall and spring.
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

220 Undergraduate

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.

EENG 404L Photonics and Optical Communication Laboratory (1 cr.)

Prerequisites: Concurrent with EENG 434. Offered occasionally.

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.

EENG 410 Solid-State Devices (3 cr.)

Prerequisites: consent of instructor. Offered occasionally.

Theory of semiconductor surfaces, field effect transistors, application in static logic design, semiconductor sensors and transducers.

EENG 413 Testing of Digital Circuits (3 cr.)

Prerequisites: EENG 210. Offered occasionally.

Basic concepts behind testing digital circuits. Causes of permanent and temporary failures. Test pattern generation techniques including exhaustive, Pseudo-exhaustive, Path sensitization, Critical path, Random and Pseudorandom Testing. Design for testability methods for testing Integrated Circuits. Techniques for testing Printed circuit boards.

EENG 414 High Level Digital ASIC Design Using CAD (3 cr.)

Prerequisites: EENG 318. Offered occasionally.

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.

Two class periods and one three-hour lab period.

EENG 415 Integrated Circuit Fabrication: Materials and Processes (3 cr.)

Prerequisites: EENG 316. Offered occasionally.

Micro-fabrication 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, Bi-CMOS, ECL and MEMS.

EENG 416 Advanced ASIC Design (3 cr.)

Prerequisites: EENG 414. Offered occasionally.

This course covers advanced topics related to net-list synthesis, place & route, timing verification, clock tree insertion, power grid distribution, floor-planning 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.

EENG 420 Fundamentals of Communications I (3 cr.)

Prerequisites: EENG 320, MACT 317 and ENGR 313, concurrent with EENG 439L. Offered in fall and spring.

Electronics Engineering 221

Signal representation and classification, time and frequency domains and transform, power spectral analysis. Basics of analog communication: amplitude, angle, and analog pulse modulation; modulators and demodulators; frequency multiplexing. Basics of digital communication: sampling, quantization, pulse code modulation, (PCM), Delta Modulation, Differential PCM, time division multiplexing, binary signal formats. Introduction to Random Processes. Noise in communication systems.

EENG 421 Fundamentals of Communications II (3 cr.)

Prerequisites: EENG 420. Offered in fall and spring.

Fundamentals of Digital Communications. The matched filter. 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. Several experiments are conducted in the Communication Lab to illustrate the material covered in the course.

EENG 432 Computer Communication Networks (3 cr.)

Prerequisites: EENG 420. Offered in fall and spring.

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.

EENG 433 Telecommunications Systems (3 cr.)

Prerequisites: EENG 420 and 432. Offered occasionally.

Fundamentals of telecommunication systems: Telephone system fundamentals. Basics of voice over IP networks (VOIP). Cordless telephones, modems and digital subscriber lines (DSL). Satellite Communications and wireless networks.

EENG 434 Optical Communication Systems (3 cr.)

Prerequisites: EENG 341 and PHYS 214, concurrent with EENG 404L. Offered occasionally.

Operating principles of optical communication systems and fiber optic communication technology. Characteristics of optical fibers, laser diodes, and laser modulation, laser and fiber amplifiers, detection and demodulation, dispersion compensation, and network topologies. System topology, star networks, bus networks, layered architectures, all-optical networks.

EENG 436 Mobile Communication Systems (3 cr.)

Prerequisites: EENG 421 and 432. Offered occasionally.

The development of mobile communications systems. Structure of radio communications systems. Techniques in radio communications. Cellular telephony. Mobile radio networks. Packet-switched mobile data communications. Channel capacity in mobile communications. Propagation modeling in mobile communications. Coding and diversity for wireless communications. Wireless communication standards. Wireless LAN's.

EENG 439L Communications Lab (1 cr.)

Prerequisites: Concurrent with EENG 420. Offered in fall and spring.

222 Undergraduate

Experiments illustrating material of course EENG 420.

EENG 442 Electromagnetic Waves (3 cr.)

Prerequisites: EENG 341. Offered in fall and spring.

Maxwell's equations. Plane waves in lossless and lossy media. Skin effect, flow of electromagnetic power. Poynting's theorem. Reflection and refraction. Guided waves. Boundary value problems, TEM waves, hollow waveguides, cavity resonators, micro-strip waveguides, optical fibers. Interaction of field with matter and particles. Antennas and radiation of electromagnetic energy. Elements of radio transmission systems and radar. Several experiments are conducted in the Microwave Lab to illustrate material covered in the course. Boundary Value problems.

EENG 447 Microwave Systems (3 cr.)

Prerequisites: EENG 442. Offered occasionally.

Introduction to microwave engineering and wave equation review. Wave propagation and cutoff considerations. Transmission line power and mode limits. Planar and micro-strip lines. Obstacles in transmission lines. Impedance matching and tuning. Quarter-wave transformer design. Micro-strip transitions. Transmission line and cavity resonators. Sattering-parameters and applications. Microwave transistor amplifier gain and stability design. Microwave filter design by insertion loss method.

EENG 453 Microcontroller System Design (3 cr.)

Prerequisites: EENG 210, 316, 352 and concurrent with EENG 459L. Offered in fall and spring. 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.

EENG 455 Computer Architecture (3 cr.)

Same as CSCE 330. Prerequisites: EENG 210, 352, concurrent with EENG 458L. Offered in fall and spring.

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.

EENG 456 Digital Control Systems (3 cr.)

Prerequisites: EENG 210 and 321 (for EENG students); PHYS 319 and MENG 476 (for MENG students). Offered occasionally. 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.

EENG 458L Computer Architecture Lab (1 cr.)

Same as CSCE 339L. Prerequisites: Concurrent with EENG 455. Offered in fall and spring. The laboratory will cover experiments in computer architecture and hardware design and

Electronics Engineering 223

experiments illustrating material of Course EENG 455.

EENG 459L Microcontroller System Design Lab (1 cr.)

Prerequisites: Concurrent with EENG 453. Offered in fall and spring.
Experiments illustrating material of course EENG 453.

EENG 480 Special Problems in Electronics Engineering (1-3 cr.)

Prerequisites: consent of instructor. Offered in fall and spring.
Independent study in various problem areas of electronics engineering may be assigned to individual students or to groups. Readings assigned and frequent consultations held. May be repeated for credit if content changes.

EENG 490 Senior Project I (1 cr.)

Prerequisites: senior standing. Offered in fall and spring.
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.

EENG 491 Senior Project II (2 cr.)

Prerequisites: EENG 490. Offered in fall and spring.
A continuation of the capstone project.

EENG 494 Selected topics in Electronics Engineering (3 cr.)

Prerequisites: senior standing. Offered occasionally.
Course content will be selected each semester from current developments in the field of electronics engineering.

EENG 497 Industrial Internship (1 cr.)

Prerequisites: completion of 100 credit . Offered in fall and spring.
Each student is required to be trained for 15 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.

224 Undergraduate

Engineering

School of Science and Engineering

Professors: A. Abdel Hamid (Sabbatical), M. Abdel-Mooty, M. Abou-Zeid (CANG Chair), H. Amer, H. Elayat, A. Elimam, A. Esawi, A. Ezzeldin, E. Fahmy (Dean of Sciences & Engineering), M. Farag (Director of Engineering Services), M. Fouad, L. Gaafar, M. Habib, S. El-Haggag (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 (EENG Chair), A. Ahmed, M. Anis, M. Arafa, A. Darwish, A. Elezabi (Director of Graduate Program), T. El-Kweidy, M. Mostafa, K. Nassar, S. Safar, A. Zanon.

Assistant Professors: M. Ali, M. Arafa, C. Bauriedel, S. El-Baradei, M. El-Barkouky, H. Fayek, L. El-Gabry, M. Hassan, M. El-Morsi, A. Waly.

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.

Engineering Courses (ENGR)

ENGR 101 Introduction to Engineering (1 cr.)

Offered in fall and spring.

History of engineering. Engineering fields of specialization and curricula. The engineering profession: team work, professionalism, ethics, licensing, communication and societal obligations. Engineering support personnel and activities. Engineering approach to problem solving. Examples of major engineering projects. Course project. The course must be taken in the year of admission to the engineering program.

ENGR 115 Descriptive Geometry and Engineering Drawing (2 cr.)

Offered in fall and spring.

Introductory descriptive geometry. Orthographic and pictorial drawing. Sectional views, auxiliary views, and conventions. Dimensioning. Free hand sketching, and both manual and computer-aided drafting. One class period and one three-hour lab period.

ENGR 212 Engineering Mechanics I (Statics) (3 cr.)

Prerequisites: MACT 132 and PHYS 111. Offered in fall and spring.

Fundamentals of mechanics. Equilibrium of practices, forces in space, equivalent systems,

equilibrium of rigid bodies, distributed forces, center of gravity, internal actions, analysis of simple structures and machine parts. Friction. Moment of inertia.

ENGR 214 Engineering Mechanics II (Dynamics) (3 cr.)

Prerequisites: MACT 231 and ENGR 212. Offered in fall and spring.

Kinematics and kinetics of a particle, system of particles, and rigid bodies. Energy and momentum methods. Engineering applications.

ENGR 229 Strength and Testing of Materials (4 cr.)

Prerequisites: ENGR 212. Offered in fall and spring.

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. Three class periods and one three-hour lab period

ENGR 261 Fundamentals of Fluid Mechanics (3 cr.)

Prerequisites: PHYS 112 and ENGR 214. Offered in fall and spring.

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. Two class periods and one three-hour lab period.

ENGR 313 Engineering Analysis and Computation I (3 cr.)

Prerequisites: CSCE 106 and MACT 233. Offered in fall and spring.

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.

ENGR 318 - General Electrical Engineering (3 cr.)

Prerequisites: PHYS 112, MACT 231. Offered in fall and spring.

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.

ENGR 345 Engineering Economy (3 cr.)

Prerequisites: MACT 132. Offered in fall and spring.

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.

ENGR 364 Fundamentals of Thermofluids (3 cr.)

Prerequisites: PHYS 111. Open for Electronics Engineering major only. Offered in fall.

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

226 Undergraduate

conduits; introduction to turbo-machinery; conduction heat transfer: one-dimensional and fins; forced and natural convection heat transfer.

ENGR 494 Entrepreneurial Development and Innovation (3 cr.)

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.

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

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

228 Undergraduate

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/HIST 209 - Introduction to American Studies (3 cr.)

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)

Minor in English and Comparative Literature

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.

English and Comparative Literature Courses (ECLT)

ECLT 123 Experiencing Creativity: Texts and Images

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 (3 cr.)

Course addressing broad intellectual concerns and accessible to all first-year students as part of the Primary Level Core.

ECLT 200 Introduction to Literature (3 cr.)

For students interested in literature but not necessarily intending to major in the field, this course will enable the student to acquire the tools and learn the methods which would help him/her understand poetry, fiction and drama and develop a deeper appreciation of great literary texts from various places and times.

ECLT 201 Survey of British Literature (3 cr.)

The course introduces students to a selection of major works in British Literature from its beginnings to the present. It instructs students to analyze and interpret influential novels, plays, poems, and essays. The course presents the development of British literature historically while emphasizing the cultural and aesthetic dimensions of the texts.

ECLT 202 Global Literature in English (3 cr.)

The course concentrates on stylistic analysis of short literary texts and examines their aesthetic and ideological components as well as the varieties of reader response.

ECLT 209 Introduction to American Studies (3 cr.)

Same as HIST 209.

This interdisciplinary course is designed to introduce students to key events and texts in the history and culture of the United States. Using films, literature and historical texts, the course will examine American culture within a historical context.

ECLT 299 Selected Topic for Core Curriculum (3 cr.)

Prerequisites: RHET 101.

Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

ECLT 301 Medieval Literature (3 cr.)

The course introduces the student to the literary culture and counterculture of the Middle Ages through reading selected autobiographical and fictional texts from St. Augustine, Abelard, Heloise, Dante, Chaucer, Attar and *The Arabian Nights*.

ECLT 302 Literature of the Renaissance (3 cr.)

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.

230 Undergraduate

ECLT 303 Seventeenth-Century Literature (3 cr.)

The literary developments that followed the Renaissance are explored, culminating in discussion of John Milton and his epic masterpiece, *Paradise Lost*.

ECLT 304 Eighteenth-Century Literature (3 cr.)

Dominant modes in European literature and thought between 1660 and 1760. Works not originally written in English will be read in English translations.

ECLT 305 Romanticism (3 cr.)

Major European and American ideas and literary works of the period 1760-1848. Works not originally written in English will be read in English translations.

ECLT 306 Nineteenth Century European Literature (3 cr.)

Major European works of fiction, poetry and drama from the period between 1789-1914. Works not originally written in English will be read in English translations.

ECLT 308 Modern European and American Literature (3 cr.)

Selected readings of American and European authors representing literary trends from 1900 to the present

ECLT 310 American Literature to 1900 (3 cr.)

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.

ECLT 311 Modern American Literature (3 cr.)

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.

ECLT 330 Literature and Cinema (3 cr.)

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.

ECLT 332 World Literature (3 cr.)

The course covers seminal literary works in both Western and non-Western canons, assigned in editions of excellent English translations.

ECLT 333 African Literature (3 cr.)

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 postcolonial experience.

ECLT 344 Literature and Philosophy (3 cr.)

Same as PHIL 344.

The course concentrates on the intersection of the literary mode with the philosophical quest in

English & Comparative Literature 231

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.

ECLT 345 Literature and Gender (3 cr.)

The course investigates gender roles in literary texts and the image of women in different historical periods and cultural settings. Readings include Feminist and anti-Feminist literary and theoretical texts drawn from the North and the South.

ECLT 346 Third World Literature (3 cr.)

The course analyzes Third World literary texts from Asia, Africa and South America in their historical context and their contribution to postcolonial discourse.

ECLT 347 Selected Topics (3 cr.)

Examination of specific topics in genre and other areas of special interest and expertise of the faculty. May be repeated for credit if content changes. In recent years, the following have been offered under this heading: The Arabian Nights, The Lyrical Mode (in English, Arabic and French), Autobiographies, Literature and Cultural History, Literature and the Visual Arts, Literature and Urban Culture, Theory of Narrative, The European Novel, Figures of the Scared, T. S. Eliot, The Bloomsbury Group and Albert Camus.

ECLT 348 Contemporary Literature (3 cr.)

The course explores literary texts which marked the period following World War II as well as very recent European and American works in a comparative context.

ECLT 352 Recurrent Themes in Literature (3 cr.)

The course revolves around a selected literary theme (such as Romance, Friendship, or Loss among others), recurring in different cultures and regions of the world or/and recurring through the ages. The literary theme might be in one genre (drama, fiction, or poetry) or in a combination of genres.

ECLT 353 Modern Drama (3 cr.)

A study of mainly European drama in the period from Ibsen to the present, including plays by Shaw, Chekhov, Strindberg, Pirandello, Brecht, Sartre, Beckett, Pinter and others, and dealing with related developments in theatre, cultures and society.

ECLT 360 Shakespeare (3 cr.)

Analysis of Shakespearean drama, including tragedy, comedy, history and romance. The course begins with an examination of the theatrical and historical content in which Shakespeare lived and wrote. It then focuses on individual plays, paying attention to the details of Shakespearean language, as well as to the broader issues of power, politics and gender.

ECLT 370 Creative Writing (3 cr.)

A course on literary writing designed to accommodate the needs of diverse students. Emphasis is on developing one's own storytelling, playwriting, 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.

232 Undergraduate

ECLT 409 Greek Classics in Translation (3 cr.)

Same as ECLT 506.

Major works of Greek literature since 700 B.C., chosen on the basis of merit and influence and studied in the most artistic translations.

ECLT 410 Classics of the Ancient World (3 cr.)

Same as ECLT 507.

Major works in ancient Near Eastern and Latin literatures studied in the most artistic translations.

ECLT 411 History of Literary Criticism (3 cr.)

Same as ECLT 508.

Study of central documents in the tradition of Western literary criticism, from Plato to the Romantics.

ECLT 412 Modern Literary Criticism (3 cr.)

Same as ECLT 509.

Analysis of the major trends in modern literary theory, such as Russian formalism, new criticism and post-structuralism.

ECLT 447 Capstone Seminar: Selected Topics (3 cr.)

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.

Environmental Science

Department of Biology
School of Sciences and Engineering

Coordinated by: E. Cruz-Rivera (Biology), J. Grubich (Biology), A. Ramadan (Chemistry)

Minor in Environmental Science

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 312 - Mathematical Modeling (3 cr.)

Students must finish their concentration requirements in biology and chemistry before taking BIOL/CHEM 399.

234 Undergraduate

Film

**Department of Performing and Visual Arts
School of Humanities and Social Sciences.**

Associate Professor: M. Khouri (Director of Film and PVA Chair)

Minor 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 Minor in Film at AUC integrates historical, theoretical, regional and topical studies of the subject, including exposure to the practical study of filmmaking. The general curriculum of this program covers the following areas: the development of cinema as an art form; the impact of cinema on culture and society; the history, thematic and stylistic trends within Egyptian and Arab cinemas; the development of theoretical and practical background and appreciation of the art of filmmaking; the aesthetic techniques used in production; and the relationship between cinema and the increasingly mediated visual cultures of the world.

Requirements

All intended Film minors must complete 18 credit-hours of course work that begins with a prerequisite foundations course:

FILM 220 - Introduction to Film (3 cr.)

Complete three survey courses (9 cr.)

FILM 320 - Cinema in Egypt and the Arab World (3 cr.)

In addition to two from:

FILM 310 - History of Motion Pictures (3 cr.)

FILM 330 - Film Theory and Criticism (3 cr.)

FILM 360 - The Filmmaker (3 cr.)

FILM 390 - Film Genre (3 cr.)

Or

FILM 350 - Introduction to Digital Filmmaking (3 cr.)

Electives

Choose two electives (6 cr.) from the remaining courses in Film. Among these two electives, at least one course should be on the 400 level. All film courses may fulfill humanities requirements.

Film Courses (FILM)

FILM 199 Selected Topic for Core Curriculum (3 cr.)

Offered occasionally.

Course addressing broad intellectual concern and accessible to all first-year students as part of the Primary Level Core.

FILM 220 Introduction to Film (3 cr.)

Offered in fall and spring.

An introduction to the art of cinema, covering basic film history, theory, aesthetics, and production. Dramatic narrative (fiction), documentary (nonfiction), and avant-garde subjects are analyzed in detail, and relevant films are screened in class to stimulate discussion. Required for the minor in film.

FILM 299 Selected Topic for Core Curriculum (3 cr.)

Prerequisites: RHET 101. Offered occasionally.

Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

FILM 310 History of Motion Pictures (3 cr.)

Prerequisites: Film 220 or consent of the Director of the Film Program. Offered in the fall or spring.

A survey of international narrative cinema, from the silent period to the present. Individual films, film makers, film movements, and film genres will be studied, and important films from the respective periods will be screened in whole or in part.

FILM 320 Cinema in Egypt and the Arab World (3 cr.)

This course examines various aspects of cinema in Egypt and the Arab World in order to understand its history, and determine the themes, the styles, and the character of this cinema which has been historically among the most influential in national world cinemas. Topics could include areas such as New Arab Cinemas, classical Egyptian cinema, the Arab film industry, independent Arab cinema, among others.

FILM 330 Film Theory and Criticism (3 cr.)

Prerequisites: FILM 220 or consent of the Director of the Film Program. Offered in the fall or spring.

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.

FILM 340 Documentary Film (3 cr.)

Prerequisites: FILM 220 or consent of the Director of the Film Program. Offered occasionally.

A Study of the nonfiction 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.

FILM 341 Anthropology and Film (3 cr.)

Same as ANTH 341. Prerequisites: ANTH 202. Offered occasionally.

The history and practice of film in anthropology; film as ethnography; comparison of films and analytical ethnographies.

FILM 350 Introduction to Digital Filmmaking (3 cr.)

Prerequisites: FILM 220 or the consent of the Director of the Film Program.

This is an introductory production course. In this course students will learn and apply the basic creative concepts of film production and the mastery of film language.

236 Undergraduate

FILM 360 The Filmmaker (3 cr.)

Prerequisites: Film 220 or consent of the Director of the Film Program.

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.

FILM 370 Selected Topics in Film (3 cr.)

Offered occasionally.

In-depth examination of specific topics in film determined by the special interests and expertise of the faculty. May be repeated for credit if content changes.

FILM 390 Film Genre (3 cr.)

Prerequisites: FILM 220 or the consent of the Director of the Film Program.

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.

FILM 402 Independent Study (13 cr.)

Prerequisites: departmental approval required. Offered in fall and spring.

With departmental approval, advanced students may arrange an individualized course topic to be completed under faculty supervision. An overall minimum B average is required for admission to the course

FILM 450 Production Project (3 cr.)

Prerequisites: FILM 350 or the consent of the Director of the Film Program.

Students will work on individual and group projects designed to apply basic creative concepts of film production and the mastery of film language.

FILM 470 Advanced Seminar (3 cr.)

Prerequisites: At least one 300 level Film Studies course outside of the production stream or consent of the Director of the Film Program. Offered occasionally.

In-depth examination of special advanced topics in film studies including in the areas of Genre, the filmmaker, Arab and Egyptian Cinema, theory, gender, reception, etc. Designed for advanced students.

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 arts 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

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.

238 Undergraduate

Electives:

38-50 credits, to be selected in consultation with a history faculty advisor.

Minor in History

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.

Minor in Comparative Religion

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.

History Courses (HIST)

HIST 110 World Cultures (3 cr.)

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.

HIST 111 Big History for Freshmen (3 cr.)

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.

HIST 114 A History of Modern Imperialism (3 cr.)

The contemporary world is shaped by dynamic encounters between European imperial projects and the societies of Asia, Africa, and North and South America since the sixteenth century. This course offers both a general history of these encounters and case studies of interactions between three Muslim societies and Europe: India, Egypt, and Algeria.

HIST 122 Words That Made History: Great Speeches of the 20th Century (3 cr.)

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.

HIST 123 Family History in the Modern Middle East (3 cr.)

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.

HIST 199 Selected Topics for Core Curriculum (3 cr.)

Course addressing broad intellectual concerns and accessible to all first-year students.

HIST 201 History of American Civilization to the Nineteenth Century (3 cr.)

A survey of American cultural roots from the period of exploration through the foundation of a federal American republic, social and industrial challenges, the question of slavery, and the crisis of civil war.

HIST 202 History of Modern American Civilization (3 cr.)

A survey of events leading to the creation of a distinct American culture as the United States meets the challenges of moral crisis, the industrial revolution, and world leadership from the nineteenth century to the present.

HIST 203 Western Civilization from Antiquity to the Middle Ages (3 cr.)

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.

HIST 204 Early Modern Europe (3 cr.)

A survey of the development of European society from the Renaissance to the Enlightenment.

HIST 205 Europe in the Age of Revolution and Reform (1789-1914) (3 cr.)

Survey of the development of European societies and ideologies from the crisis generated by the French Revolution, through the Age of Nationalism and Imperialism, up to the outbreak of the First World War.

240 Undergraduate

HIST 206 Global Politics in the Twentieth Century (3 cr.)

Same as POLS 206.

The major political developments and socioeconomic changes, treated chronologically and geographically, from the origins of the First World War to the present.

HIST 207 World History (3 cr.)

The development of human society from 11,000 BCE to the present. Using archaeology, anthropology, ethno-biology and traditional history, this course examines the civilizations of Polynesia, China, India, Africa, Meso-America, South America, the United States, Europe and the Middle East in order to explain why some societies today are politically, economically and technologically more powerful than others.

HIST 209 Introduction to American Studies (3 cr.)

Same as ECLT 209.

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.

HIST 210 Religions of the World (3 cr.)

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.

HIST 211 History In The Making (3 cr.)

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. May be repeated for credit when content changes.

HIST 212 The Quest for the Historical Jesus (3 cr.)

Same as CREL 212.

Investigates the life and teachings of Jesus of Nazareth within the context of Second Temple Judaism and Greco-Roman culture. Considers a range of premodern and modern interpretations of Jesus and the emergence of Christianity.

HIST 225 East Asian History

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 (3 cr.)

The history of Pharaonic Egypt from pre-dynastic times to the end of the Middle Kingdom will be covered. Literary sources will be augmented by archeological evidence. Field trips to archeological sites in the Cairo area are an obligatory aspect of the course.

HIST 244 History II: Middle Kingdom Through New Kingdom Egypt (3 cr.)

Prerequisites: HIST/EGPT 243 or consent of the instructor. Offered in spring.

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. Field trips to the Cairo Museum and other relevant sites are a required part of the course.

HIST 246 Survey of Arab History (3 cr.)

Same as ARIC 246.

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.

HIST 247 The Making of the Modern Arab World (3 cr.)

A historical tour of how we got where we are today. The course starts with the late premodern Arab world and Ottoman empire, and moves through various forms of threat, influence, change, and modernization to the present. Events in the Arab world are examined in their wider, global context.

HIST 299 Selected Topics for Core Curriculum (3 cr.)

Prerequisites: RHET 101.

Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

HIST 307 The Middle Ages, the Renaissance and the Reformation (3 cr.)

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.

HIST 308 Europe in the Age of Reason (3 cr.)

An examination of the ways in which European intellectual developments during the Enlightenment were connected with sociopolitical changes in the seventeenth, eighteenth and early nineteenth centuries.

HIST 309 History of American Political Thought (3 cr.)

Prerequisites: HIST 201 or 202, or HIST/ECLT 209.

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 anticommunism either reflected or influenced political action.

HIST 319 Islamic Spain and North Africa (711-1492 A.D.) (3 cr.)

Same as ARIC 319.

This course is an introduction to the political, economic, social, and cultural history of Muslim

242 Undergraduate

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.

HIST 320 Big History (3 cr.)

Prerequisites: The course will not be open to students who have already taken HIST 111.

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.

HIST 330 Urban Landscapes in the Modern Middle East/North Africa (3 cr.)

This course presents diverse histories of cities in the Middle East in the nineteenth and twentieth centuries, from the impact of French and British colonialism to Arab nationalism. It introduces students to central themes in modern urban history with emphasis on the city and the production of modern lives, rural migration and the transformation of the city, women and men in the city, and urban crisis and social movements.

HIST 331 History of Palestine/Israel (3 cr.)

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.

HIST 333 Zionism and Modern Judaism (3 cr.)

Same as CREL 333.

The Zionist ideology and movement in its own terms, and in the context of modern Judaism. The course places Zionism in its historical and religious contexts, and examines its varieties. The Zionist movement is followed from its origins to the establishment of Israel. Related aspects of Israeli politics are then examined, with especial reference to ideological and religious debates.

HIST 342 History of Egypt in the Greco-Roman Era (3 cr.)

Same as EGPT 342. Prerequisites: HIST/EGPT 243 and 244 or instructor's consent. Offered occasionally.

This course will study the history of Egypt in the Greco-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.

HIST 343 Birth of Muslim Community and Rise of the Arab Caliphates (3 cr.)

Same as ARIC 343. Offered in fall.

The rise of Islam and Arab expansion, the classical period of Islamic civilization during its first centuries to the period of Abbasid political disintegration.

HIST 344 Caliphs and Sultans in the Age of Crusades and Mongols (3 cr.)

Same as ARIC 344. Offered in spring.

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 .

HIST 345 Gunpowder Empires: Ottomans, Safavids and Mughols (3 cr.)

Same as ARIC 345. Offered in fall.

The decline of the Mamluks; the Timurids in Persia; the age of gunpowder: the Safavid Ottoman, and Moghul empires and their decline.

HIST 346 Societies and Cultures of the Ancient Near East (3 cr.)

Same as EGPT 346.

Prerequisites: HIST/EGPT 243 and 244, or instructor's consent. Offered occasionally.

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 Hittites, 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.

HIST 355 State and Society in the Middle East, 1699-1914 (3 cr.)

Same as ARIC 355.

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

HIST 356 Society and State in the Middle East, 1906-present (3 cr.)

Same as ARIC 356.

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.

HIST 357 Selected topics in Middle East History (3 cr.)

Same as ARIC 357. Offered occasionally.

Focuses on theme or topic in the history of the Middle East. May be repeated for credit when topic changes.

HIST 400 Independent Study (1-3 cr.)

In exceptional circumstances, students may, with department approval, arrange to study beyond the regular course offerings. Open only to juniors and seniors with a minimum B average. May be repeated for credit if content changes.

HIST 401 Selected Topics in the History of the United States (3 cr.)

May be repeated for credit when content changes.

HIST 402 Selected Topics in European History (3 cr.)

May be repeated for credit when content changes

244 Undergraduate

HIST 405 Selected Topics in World History (3 cr.)

May be repeated for credit when content changes.

HIST 412 Selected Topics in Modern Egyptian History (3 cr.)

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. May be repeated for credit when content changes.

HIST 415 The Marriage Crisis and the Middle East (3 cr.)

This course examines how men and women imagine their nations through marriage and understand their rights and duties in the twentieth-century Middle East. It shows how marriage is a lens that reflects and critiques larger socioeconomic and political issues. It also contributes to our historical understanding of the “marriage crisis”, which continues to dominate public debates today.

HIST 420 Historical Theory and Methodology (3 cr.)

Prerequisites: To be taken in senior year.

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.

HIST 425 Food in World History (3 cr.)

An inter-disciplinary examination of the role of food in human history beginning with the agricultural revolution and including such topics as the Columbian exchange, industrialization, the rise of the restaurant, food as cultural identity, food policy and the state, fast food, gender roles, health and nutrition, and the emergence of modern attitudes towards food and the body.

HIST 445 Selected Topics in Coptic Studies (3 cr.)

Same as ARIC, EGPT, ANTH, SOC 445. Offered in fall.

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.

HIST 454 Modern Movements in Islam (3 cr.)

Same as ARIC 454. Prerequisites: HIST 355 or 356 or equivalent background.

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.

HIST 460 Selected Topics in Middle Eastern History, 600-1250 A. D. (3 cr.)

Same as ARIC 460. Offered occasionally.

May be repeated for credit when content changes.

HIST 461 Selected Topics in Middle Eastern History, 1250-1800 A. D. (3 cr.)

Same as ARIC 461. Offered occasionally.

May be repeated for credit when content changes.

HIST 462 Selected Topics in the History of the Modern Middle East (3 cr.)

Same as ARIC 462.

May be repeated for credit when content changes.

HIST 463 Selected Topics in the History of Islamic Thought and Institutions (3 cr.)

Same as ARIC 463. Prerequisites: consent of instructor.

May be repeated for credit when content changes.

Comparative Religion Courses (CREL)**CREL 135 Dimensions of the Sacred: Exploring Religious Experience (3 cr.)**

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.

CREL 210 Religions of the World (3 cr.)

An introduction to the academic study of religion. By looking at the history, beliefs, practices, institutions and cultural expressions of a number of different religions, students will broaden their understanding of religions other than their own, and of the diversity of the human religious experience. Students will learn to appreciate the variety of the religions of the world, and the similarities and differences between them.

CREL 212 The Quest for the Historical Jesus (3 cr.)

Same as HIST 212. Offered occasionally.

Investigates the life and teachings of Jesus of Nazareth within the context of Second Temple Judaism and Greco-Roman culture. Considers a range of premodern and modern interpretations of Jesus and the emergence of Christianity.

CREL 220 Hinduism and Buddhism in India (3 cr.)

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.

CREL 230 Pilgrimage Traditions in the World's Religions (3 cr.)

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.

CREL 299 Selected Topics for Core Curriculum (3 cr.)

Prerequisites: RHET 101. Offered occasionally.

246 Undergraduate

Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

CREL 320 Masters, Saints, and Saviors: Sacred Biography in the World's Religions (3 cr.)

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.

CREL 333 Zionism and Modern Judaism (3 cr.)

Same as HIST 333.

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

CREL 529 World Religions and the Study of Religion (3 cr.)

Same as ARIC 529. Prerequisites: Enrollment in the Islamic Studies MA program.

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.

Journalism & Mass Communication

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

Professor Emeritus: A. Schleifer

Professor: H. Amin (Chair)

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

Bachelor of Arts in Communication and Media Arts

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.)

248 Undergraduate

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 they will complement their major, including Arabic Studies, History, Middle East Studies, Performing Arts (music, film and theater), Political Science, Sociology and others.

Bachelor of Arts in Integrated Marketing Communication

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

Journalism & Mass Communication 249

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 (18 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.)

Required Marketing Courses (6 credits)

- MKTG 302 - Principles of Marketing (3 cr.)
- MKTG 410 - Consumer-Buyer Behavior (3 cr.)

Choose three of the following courses: (9 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

250 Undergraduate

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.

Bachelor of Arts in Multimedia Journalism

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 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 liberal Arts or Science.

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.)

Journalism & Mass Communication 251

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 that will complement their major, including Arabic Studies, History, Middle East Studies, Performing Arts (music, film and theater), Political Science, Sociology and others.

Journalism and Mass Communication Courses (JRMC)

JRMC 200 Introduction to Mass Communication (3 cr.)

An introductory survey of the theory, history, structure, and function of mass communication in the Middle East and globally. Open to all university students.

JRMC 201 Mass Media Writing (3 cr.)

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.

JRMC 202 Multimedia Writing (3 cr.)

Prerequisites: JRMC 201.

Cross-media study and practice of writing and reporting for print, broadcast, Internet.

JRMC 203 Mass Media Ethics and Responsibility (3 cr.)

Critical analyses of media laws and professional philosophies, standards, and practices in journalism, public relations, advertising, and other fields of mass communication. Discussion of ethical and practical considerations and dilemmas in different professional and social contexts.

JRMC 230 Introduction to Photography (3 cr.)

History, composition, lighting, and other basic elements of photography. Practical applications of digital photography.

JRMC 250 Global Media Systems (3 cr.)

Comparative study of global communication systems and theory in relation to national and international development. Open to all university students.

JRMC 270 Online Communication (3 cr.)

An introduction to the Internet as a medium of communication, as well as to its nature,

252 Undergraduate

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. Open to all university students.

JRMC 299 Selected Topic for Core Curriculum (3 cr.)

Prerequisites: RHET 101. Offered occasionally.

Course addressing broad intellectual concerns and accessible to all students, irrespective of major. Enrollment is limited and priority is given to students with declared JMC majors.

JRMC 301 Journalism Editing and Design (3 cr.)

Prerequisites: JRMC 202.

Principles of, and laboratory practice in, copyediting and proofreading; headline writing; scaling and cropping photographs; and layout and design.

JRMC 305 Introduction to Visual Communication (3 cr.)

Prerequisite: JRMC 201.

Introductory laboratory in basics of typography, desktop publishing, digital design of publications and advertising. Taught by lecture with practical application.

JRMC 310 Public Opinion, Persuasion and Propaganda (3 cr.)

Offered occasionally.

Theoretical and practical study of the social role of international and national mass media, policymakers and the public in formation of public opinion. Open to all university students.

JRMC 312 Multimedia Journalism Lab: The Caravan (3 cr.)

Prerequisites: JRMC 202, 203 and 301 or consent of instructor.

Supervised newsroom experience in reporting, writing, editing, designing and layout for print, broadcast and online version of The Caravan and AUC TV.

JRMC 315 Introduction to Advertising (3 cr.)

Prerequisites: JRMC 305.

Survey of professional principles and practices in advertising and their relationship to business and government, with special emphasis on the United States and Egypt. Enrollment is limited and priority is given to students with declared JMC majors.

JRMC 320 Mass Communication Research (3 cr.)

Prerequisites: Junior standing.

Methods and theories used in mass communication research. Emphasis on the various methods and measurement tools used in message, communicator and audience measurements. They will learn to work with statistics, databases, specialized websites and other resources.

JRMC 330 Advanced Photography (3 cr.)

Prerequisites: JRMC 201 and 230. Offered occasionally.

Theory and practice of photojournalism. Advanced photography and photo editing techniques and operations.

JRMC 333 Research for Journalists (3 cr.)

Prerequisites: JRMC 202 and 312.

Journalism & Mass Communication 253

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. Enrollment is limited and priority is given to MMJ majors.

JRMC 337 TV Scriptwriting and Production (3 cr.)

Prerequisites: JRMC 202.

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.

JRMC 339 Studio Production: AUC TV (3 cr.)

Prerequisite: JRMC 337.

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.

Enrollment is limited and priority is given to declared CMA and MMJ majors.

JRMC 355 Creative Strategy and Advertising Copywriting (3 cr.)

Prerequisites: JRMC 202, 305 and 315.

Development of creative strategy, writing advertising and promotional copy, designing and preparing layouts for various media, planning and executing written and oral presentations. Enrollment is limited and priority is given to IMC majors.

JRMC 402 Reporting and Writing in Arabic (3 cr.)

Prerequisites: completion of university general requirements in Arabic and JRMC 202.

Advanced principles and practice in reporting and writing in and from Arabic.

JRMC 403 Feature and Magazine Writing (3 cr.)

Prerequisites: JRMC 202. Offered in spring.

Principles and intensive practice in researching, organizing, and writing feature articles for international newspapers and magazines. Enrollment is limited and priority is given to students with declared JMC majors.

JRMC 405 Advanced Visual Communication (3 cr.)

Prerequisites: JRMC 305. Offered occasionally.

Advanced practical integration of digital text and photographs in desktop publishing of printed material using state-of-the-art production hardware and software.

JRMC 406 Internship (3 cr.)

Prerequisites: Junior standing.

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 fulltime faculty member.

JRMC 412 Newsroom Editing and Management (3 cr.)

Prerequisites: JRMC 312.

254 Undergraduate

Supervised advanced newsroom experience in writing, editing, layout and management of *Caravan*, the AUC newspaper.

JRMC 415 Public Relations Theory and Techniques (3 cr.)

Prerequisites: JRMC 202.

Principles and practical use of public relations and public information techniques, with emphasis on media use for business and nonprofit organizations.

JRMC 420 Media Management (3 cr.)

Prerequisites: Junior standing.

Management theories and practices as applied to media organization, unique characteristics of media outlets, various operating philosophies, legal issues, regulations and related topics will also be covered including programming strategies.

JRMC 425 Integrated Marketing Communication Campaigns Capstone (3 cr.)

Prerequisites: JRMC 315, 320, 355 and 415. Offered in fall and spring.

Examination, development, and critique of advertising and marketing communication campaigns, with emphasis given to creative and media factors. Enrollment is limited and priority is given to students with IMC majors.

JRMC 441 Camera and Editing Workshop (3 cr.)

Prerequisites: JRMC 337.

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.

JRMC 444 Media Law and Policy (3 cr.)

Prerequisite: JRMC 203.

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.

JRMC 460 Audio Production (3 cr.)

Prerequisites: JRMC 202.

Studio experience in audio production.

JRMC 471 Online Journalism (3 cr.)

Prerequisites: JRMC 202.

Examination of the emerging forms of information delivery by computer and related convergence of print and broadcast media. Emphasis on learning multimedia reporting skills needed to publish quality work on the Internet.

JRMC 480 Multimedia Reporting Capstone (3 cr.)

Prerequisites: JRMC 203, 305, 312, 333, 337, 339 and 460. Offered in fall and spring.

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.

Journalism & Mass Communication 255

JRMC 482 Media Convergence Capstone (3 cr.)

Prerequisites: JRMC 202, 203, 250, 270, 320 and 420.

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. Enrollment is limited and priority is given to students with declared Journalism and Mass Communication majors.

JRMC 490 Special Topics in Mass Communication (1-3 cr.)

Offered occasionally.

Special topics in journalism and mass communication will vary depending on instructor. May be repeated by student for credit if content changes. Enrollment is limited and priority is given to students with declared JMC majors.

JRMC 499 Directed Individual Study in Mass Communication (1-3 cr.)

Prerequisites: Junior standing and written project proposal endorsed by fulltime faculty with project review by department.

Individual projects in mass communication completed under the supervision of a fulltime mass communication faculty member. Students propose projects not covered by coursework that will complement their academic programs. May be repeated once for credit if content changes. Enrollment is limited and priority is given to students with declared JMC majors.

256 Undergraduate

Linguistics

English Language Institute
School of Humanities and Social Sciences

Professors Emeriti: S. El Araby, Y. El-Ezabi, E. F. Perry, P. Stevens

Professors: A. Agameya (Director, English Language Institute)

Associate Professor: R. Williams

Assistant Professors: P. Wachob, L. Fredricks, A. Gebril

Minor

The linguistics minor is administered jointly by the Department of Sociology-Anthropology-Psychology and the English Language Institute. The minor is particularly valuable as a complement to majors such as English and comparative literature, Arabic studies, psychology, sociology, anthropology, and journalism and mass communication.

Requirements (15 credits):

LING 252 - Introduction to Linguistics (3 cr.)

LING 322 - Introduction to Phonetics (3 cr.)

LING 352 - Language in Culture (3 cr.)

LING 422 - Language and Human Development (3 cr.)

And one of the following:

JRMC 304 - Arabic Newswriting and Editing

EGPT 253 - Hieroglyphics I (3 cr.)

Linguistics Courses (LING)

LING 252 Introduction to Linguistics (3 cr.)

Major aspects and procedures of the systematic study of human language in its biological and social contexts. Principles and techniques of linguistic analysis as they relate to cognition, symbolization and other aspects of culture.

LING 268 Principles and Practice of Teaching English (3 cr.)

Prerequisites: ECLT 103.

This course introduces the latest theories, principles and techniques of teaching English. It is a community based learning course and gives students practice by peer teaching, observing others teach and actual teaching in the community in order to learn to reflect and evaluate critically.

LING 299 Selected Topic for Core Curriculum (3 cr.)

Prerequisites: ECLT 101.

Course addressing broad intellectual concerns and accessible to all students, irrespective of major. May be taken more than once if content changes.

LING 322 Introduction to Phonetics (3 cr.)

Study of the articulatory and acoustic properties of speech sounds and features of language

with particular reference to English and Arabic. Includes introductory work in transcription and technological developments in phonetic research.

LING 352 Language in Culture (3 cr.)

Same as ANTH 352. Offered occasionally.

The role played by language in humankind's symbolic relation to the world. Emphasis on linguistic analysis, ethno-semantics, sociolinguistics, expressive speech, and language and socialization as these elucidate patterns of cognitive orientation.

LING 422 Language and Human Development (3 cr.)

Linguistic and psychological concepts in first and second-language learning; human perceptual and productive language processes; biological foundations of language, bilingualism, multilingualism, and inferences from animal communication.

258 Undergraduate

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: I. Hegazy, D. Rateb, E. Tooma, A. Awni, I. Azzam, Kh. Soliman.

Assistant Professors: A. Basiouny, S. Formancek, J. Fouad, M. Mourad, I. Seoudi, H. Shamma, A. Tolba, G. Williams, J. Kafafi, C. Wishart, N. Becheikh, M. El Barkouky, N. Ahmed, A. Ismail (Abdul Latif Jameel Chair of Entrepreneurship)

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 (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 through the declaration process 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 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 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.

260 Undergraduate

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 112 - Statistical Reasoning (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)

Students seeking a concentration in Management of Information Technology (MOIT) 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.)
MOIS 477 - System Integration (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.

262 Undergraduate

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

Electives (15-27 credits)

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, 3 cr.
2. CSCE 106 - Fundamentals of Computer Science, 3 cr.
3. MACT 112 Statistical Reasoning, 3 cr. or MACT 131 - Calculus I, 3 cr.

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

Students must complete a minimum of 133 credit hours for the MICT degree with no more than 63 hours of courses in the business area.

Course Requirements

(Total Credit = 133 with no more than 63 hours of courses in the business area)

Course No.	Cr.
RHET 101 * (P)	3
RHET 102 * (P)	3
RHET 201 * (P)	3
SCI 120 (P)	3

Management 263

PHIL 220 (P)	3
LALT 101 (P)	0
Natural Sc + Lab (P)	4
Humanity (P/S)	3
Social Sc. (P/S)	3
Arab World Studies (S) Θ	3
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

Course No.	Cr.
ALNG √	3
ALNG √	3
	3
Total	9

*(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*

Course No.	Cr.
ACCT 201	3
ACCT 202	3
FINC 303	3
MGMT 300	3
MGMT 307	3
MGMT 311	3
MKTG 302	3
MOIS 305	3
OPMG 310	3
Total	27

Collateral Requirements

264 Undergraduate

Course No.	Cr.
ECON 201	3
ECON 202	3
ECON 216 Ψ	3
MACT 112 ΨΨ	3
Total	12

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

Course No.	Cr.
MOIS 406	3
MOIS 435	3
MOIS 466	3
MOIS 477	3
MOIS 499	3
Two courses to be selected from the MOIT area:	
MOIS 423	3
MOIS 430	3
MOIS 432	3
MOIS 433	3
MOIS 434	3
MOIS 444	3
MOIS 450	3
MOIS 470	3
Total	21

Computer Science Requirements

Course No.	Cr.
CSCE 106	3
CSCE 110	3
CSCE 210	3
CSCE XXX Information Assurance	3
CSCE XXX Computer Systems	3
Two courses to be selected from the CSCE area:	
CSCE 315	3
CSCE 316	3
CSCE 456	3
CSCE 485	3
Total	21

Minor in Business Administration

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).

Minor in Information Systems

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 aim 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.)

266 Undergraduate

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.)

Finance (FINC)

FINC 303 Business Finance I (3 cr.)

Prerequisites: ACCT 201, (ECON 201 or ECON 202) and MACT 112. Offered in fall and spring.

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.

FINC 404 Investment Analysis (3 cr.)

Prerequisites: FINC 303. Offered in fall and spring.

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.

FINC 405 Applied Banking (3 cr.)

Prerequisites: FINC 303. Offered twice a year.

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.

FINC 408 International Finance (3 cr.)

Same as INTB 408. Prerequisites: FINC 303. Offered occasionally.

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.

FINC 410 Capital Markets (3 cr.)

Prerequisites: FINC 303. Offered in fall and spring.

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.

FINC 412 Options and Derivatives (3 cr.)

Prerequisites: FINC 404. Offered occasionally.

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.

FINC 414 Corporate Finance (3 cr.)

Prerequisites: FINC 404. Offered in fall and spring.

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.

FINC 415 Portfolio Theory and its Applications (3 cr.)

Prerequisites: FINC 404. Offered occasionally.

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.

FINC 470 Special Topics in Financial Management (3 cr.)

Prerequisites: Consent of Instructor. Offered occasionally.

Considers selected topics of current relevance in Financial Management.

FINC 475 Independent Study in Financial Management (1-3 cr.)

Prerequisites: Senior standing and consent of FINC unit head and chair. Offered occasionally.

Guided readings, research, and discussions on specific selected topic in Financial Management.

International Business (INTB)

INTB 301 Introduction to International Business (3 cr.)

Prerequisites: MKTG 302, MGMT 307. Offered in fall and spring.

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.

INTB 408 International Finance (3 cr.)

Same as FINC 408. Prerequisites: FINC 303. Offered occasionally.

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.

INTB 412 International Marketing (3 cr.)

Same as MKTG 412 Prerequisites: MKTG 302. Offered in fall and spring.

268 Undergraduate

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.

Management (MGMT)

MGMT 300 Business Environment and Ethics (3 cr.)

Offered in fall and spring.

Perspectives on the business environment and the ethical issues facing business. Organizational responses to environmental and ethical issues. Social responsibility of business firms.

MGMT 307 Management Fundamentals (3 cr.)

Offered in fall and spring.

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.

MGMT 311 Business Law (Commercial & Fiscal) (3 cr.)

Prerequisites: MGMT 307. Offered in fall and spring.

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.

MGMT 404 Human Resources Management (3 cr.)

Prerequisites: MGMT 307. Offered occasionally.

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.

MGMT 413 Entrepreneurship and Small Business Management (3 cr.)

Prerequisites: Students should be at senior level status. Offered occasionally.

An interdisciplinary course combining skills from all areas of business. The creation of new business ventures with an emphasis on personal rather than corporate goals. Special focus on problems encountered by the entrepreneurs in the Middle East and development of solutions to those problems. Prepare students for intrapreneur or entrepreneur business careers in startups and small and large corporations. Understand the stages of business formation and what activities are appropriate at each stage of business development to meet financial goals including preparation of feasibility studies for business startup.

MGMT 427 Organization Development (3 cr.)

Prerequisites: MGMT 307. Offered occasionally.

Intergroup dynamics, organizations as systems, process of organizational development, intervention strategies, organizational diagnosis, team building, structural intervention,

behavioral change, resistance to change, and implementation strategies.

MGMT 470 Special Topics in Management (3 cr.)

Prerequisites: Consent of Instructor. Offered occasionally.
Considers selected topics of current relevance in management.

MGMT 475 Independent Study in Management (1-3 cr.)

Prerequisites: Senior standing and consent of MGMT unit head and chair. Offered occasionally.
Guided readings, research, and discussions on specific selected topic in Management.

MGMT 480 Business Planning and Strategy (3 cr.)

Prerequisites: Graduating Senior. Offered in fall and spring.
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.

Management of Information Technology (MOIS)

MOIS 305 Introduction to Information Systems/Technology (3 cr.)

Offered in fall and spring.
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.

MOIS 406 Management Information Systems and Database Management (3 cr.)

Prerequisites: MOIS 305. Offered in fall and spring.
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.

MOIS 423 Geographic Information Systems (GIS) (3 cr.)

Prerequisites: MOIS 305.
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.

270 Undergraduate

MOIS 430 Business Information Systems Analysis and Development (3 cr.)

Prerequisites: MOIS 305. Offered in spring.

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.

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

Prerequisites: MOIS 305. Offered in fall & spring.

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.

MOIS 433 Marketing Information Systems (3 cr.)

Prerequisites: MOIS 305. Offered in fall & spring.

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.

MOIS 434 Financial Information Systems (3 cr.)

Prerequisites: MOIS 305.

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.

MOIS 435 Introduction to Electronic Business (3 cr.)

Prerequisites: MOIS 305 Offered in fall & spring.

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.

MOIS 444 Accounting Information Systems (3 cr.)

Prerequisites: MOIS 305. Offered occasionally.

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.

MOIS 450 Strategic Information Systems (3 cr.)

Prerequisites: MOIS 305. Offered occasionally.

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.

MOIS 466 Human Computer Interaction (HCI) (3 cr.)

Prerequisites: MOIS 305.

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.

MOIS 470 Special Topics in Management of Information Systems (3 cr.)

Prerequisites: Consent of Instructor. Offered occasionally.

Considers selected topics of current relevance in management of information systems.

MOIS 475 Independent Study in Management of Information Systems (1-3 cr.)

Prerequisites: Senior standing and consent of MOIS unit head and chair. Offered occasionally.

Guided readings, research, and discussions on specific selected topic in Management of Information Systems.

MOIS 477 System Integration (3 cr.)**MOIS 499 Internship Project (3 cr.)**

Prerequisites: completion of all MOIS core courses. Offered in fall and spring.

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.

272 Undergraduate

Marketing (MKTG)

MKTG 302 Principles of Marketing (3 cr.)

Offered in fall and spring.

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.

MKTG 405 Marketing Research (3 cr.)

Prerequisites: MKTG 302 and MACT 112. Offered in fall and spring.

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.

MKTG 408 Marketing Communications Management (3 cr.)

Prerequisites: MKTG 302. Offered fall and spring.

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.

MKTG 410 Consumer-Buyer Behavior (3 cr.)

Prerequisites: MKTG 302. Offered in fall and spring.

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.

MKTG 411 Professional Selling (3 cr.)

Prerequisites: MKTG 302. Offered occasionally.

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.

MKTG 412 International Marketing (3 cr.)

Same as INTB 412. Prerequisites: MKTG 302. Offered occasionally.

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.

MKTG 414 Services Marketing (3 cr.)

Prerequisites: MKTG 302. Offered occasionally.

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.

MKTG 416 E-Marketing (3 cr.)

Prerequisites: MKTG 302. Offered occasionally.

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.

MKTG 418 Principles of Public Relations (3 cr.)

Prerequisites: MKTG 302. Offered occasionally.

An overview of the public relations profession in the Middle East. Public-relations principles and techniques, current public relations problems, possible solutions.

MKTG 420 Advanced Marketing Research (3 cr.)

Prerequisites: MKTG 405. Offered occasionally.

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.

MKTG 470 Special topics in Marketing (3 cr.)

Prerequisites: Consent of Instructor. Offered occasionally.

Considers selected topics of current relevance in marketing.

MKTG 475 Independent Study in Marketing (1-3 cr.)

Prerequisites: Senior standing and consent of MKTG unit head and chair. Offered occasionally. Guided readings, research, and discussions on specific selected topic in Marketing.

MKTG 480 Marketing Strategy (3 cr.)

Prerequisites: MKTG 405, 410, FINC 303 and Senior standing. Offered in fall and spring.

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.

Production / Operation Management (OPMG)

OPMG 202 Statistics for Business (3 cr.)

Prerequisites: MACT 101 or ECON 216. Offered occasionally.

Basic concepts and applications of statistical analysis in business decisions. Methods include probability, risk analysis, estimation, forecasting, analysis of variances, and regression analysis.

OPMG 310 Operations for Competitive Advantage (3 cr.)

Prerequisites: MACT 112 and ECON 216. Offered in fall and spring.

274 Undergraduate

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.

OPMG 401 Supply Chain Management (3 cr.)

Prerequisites: OPMG 310. Offered in fall and spring.

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.

OPMG 402 Production/Operations Management II (3 cr.)

Prerequisites: OPMG 310. Offered in fall and spring.

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.

OPMG 403 Business Process Management and Simulation (3 cr.)

Prerequisites: OPMG 310. Offered in fall.

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.

OPMG 404 Service Operations and Strategy (3 cr.)

Prerequisites: OPMG 310. Offered in spring.

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.

OPMG 409 Quantitative Approach to Management (3 cr.)

Prerequisites: OPMG 402. Offered occasionally.

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.

OPMG 470 Special Topics in Production / Operation Management (3 cr.)

Prerequisites: Consent of Instructor. Offered occasionally.

Considers selected topics of current relevance in Production / Operation Management.

OPMG 475 Independent Study in Production/Operation Management (1-3 cr.)

Prerequisites: Senior standing and consent of OPMG unit head and chair. Offered occasionally.

Guided readings, research, and discussions on specific selected topic in Production/Operation Management.

Mathematics and Actuarial Science

Department of Mathematics and Actuarial Science
School of Sciences and Engineering

Distinguished University Professor: A. Hadi (Director of Actuarial Science Program)

Professors: H. Abdel-Malek, M. Hebert (Emeritus), M. Moustafa (Chair), A. Schuster

Associate Professors: Z. Amin, G. DeYoung, W. Lotfallah

Assistant Professors: 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
4. A Minor in Applied Probability and Statistics
5. A Statistics and Data Analysis Option

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

276 Undergraduate

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 (3 cr.)
 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.)

Mathematics & Actuarial Science 277

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.)

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: www.ucegypt.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 and Economics.

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

278 Undergraduate

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 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 (3 cr.)
- 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.)

Mathematics & Actuarial Science 279

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.)

Minor in Mathematics

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

280 Undergraduate

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 (3 cr.)

and any 3 MACT courses (excluding MACT 100 and MACT 101)

Minor in Applied Probability and Statistics

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.)

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.)

Mathematics and Actuarial Science Courses (MACT)

MACT 100 Algebra and Trigonometry (3 cr.)

Prerequisites: Thanawiyia 'Amma Arts or equivalent. Offered in fall and spring.
 Linear and quadratic equations, graphs, the circle, the rectangular hyperbola. Exponential and logarithmic functions, trigonometric functions. Systems of equations. Complex numbers. Roots of equations, zeros of polynomials. Binomial theorem, arithmetic and geometric series. No credit for Thannawia Amma Math/Science students, or equivalent, or students majoring in any of the departments of the School of Sciences and Engineering

MACT 101 Basic Mathematics for Social Sciences (3 cr.)

Prerequisites: Thanawiyia 'Amma Science or MACT 100. Offered occasionally.
 Fundamentals of algebra. Equations and inequalities. Matrices. Introduction to differential and integral calculus. No credit for science majors.

MACT 112 Statistical Reasoning (3 cr.)

Offered in fall and spring.
 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.

MACT 131 Calculus I (0-3 cr.)

This course is 0 credit hours for all engineering majors, computer science and physics majors. Otherwise it is 3 credit hours.
 Prerequisites: Thanawiyia, 'Amma Science or equivalent. Offered in fall and spring.
 Limits of one-variable functions, continuity and differentiability. Extrema and Curve sketching. Related rates. Linear approximation. Differentiation of Trigonometric functions. Applications of the derivative

MACT 132 Calculus II (3 cr.)

Prerequisites: MACT 131 or exemption. Offered in fall and spring.
 Definite and indefinite integrals. The fundamental theorem of calculus and applications of the definite integral. Area, arc length, volumes and surfaces of revolution. Differentiation and integration of Exponential, Logarithmic, Trigonometric and other Transcendental functions.

282 Undergraduate

Techniques of integration. Numerical integration. Improper integrals.

MACT 199 Selected Topic for Core Curriculum (3 cr.)

Offered occasionally.

Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

MACT 200 Discrete Mathematics (3 cr.)

Prerequisites: MACT 100 or equivalent. Offered in fall and spring.

Sets, sequences, integers. Basic propositional and predicate logic. Methods of proof (including mathematical induction). Combinatorics, functions, relations and digraphs. Matrices and boolean matrices. Graphs and trees.

MACT 231 Calculus III (3 cr.)

Prerequisites: MACT 132. Offered in fall and spring.

Sequences and series (including power series). Vectors and planes. Surfaces. Partial differentiation. Introduction to double integrals (including double integrals in polar coordinates).

MACT 232 Calculus IV (3 cr.)

Prerequisites: MACT 231. Offered in fall and spring.

Multiple integrals. Parametric equations. Cylindrical and spherical coordinates. Vector-valued functions, vector calculus: Green's Theorem, Gauss Theorem and Stokes' Theorem and their applications. Complex numbers.

MACT 233 Differential Equations (3 cr.)

Prerequisites: MACT 231. Offered in fall and spring.

First-order differential equations and applications. Higher-order differential equations. Applications of second-order linear differential equations with constant coefficients. Systems of linear differential equations. Series solutions. Laplace transform.

MACT 240 Linear Algebra (3 cr.)

Prerequisite: MACT 231. Offered in fall and spring.

Solutions of systems of linear equations. Matrices and determinants. The space \mathbb{R}^n , vector spaces and subspaces. Linear independence, basis and dimension. Inner product and orthonormal bases. Linear transformations. Eigen-values and eigenvectors. Diagonalization. Various applications.

MACT 301 Seminar in Mathematics (1 cr.)

Prerequisites: junior standing. Offered occasionally.

Weekly one hour seminar in different areas of Mathematics to be given by faculty or invited speakers from industries and other scientific communities.

MACT 304 Numerical Methods (3 cr.)

Prerequisites: CSCE 106, MACT 233 and MACT 240. Any of them can be taken concurrently. Offered once a year.

Number systems and errors. Solution of nonlinear equations. Interpolation. Systems of linear equations. Approximation. Differentiation and integration. Solution of ordinary differential equations.

MACT 305 Introduction to PDE and Boundary-Value Problems (3 cr.)

Prerequisites: MACT 233.

Special functions. Partial differential equations. Fourier series and integrals. Diffusion, potential and wave equations in rectangular, cylindrical, and spherical coordinates. Numerical methods. Offered approximately every 3 semesters.

MACT 306 Applied Probability (3 cr.)

Prerequisite: MACT 231 or concurrently. Offered once a year.

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.

MACT 307 Statistical Inference (3 cr.)

Prerequisite: MACT 306. Offered once a year.

Sampling distribution. Point and interval estimation, methods of moments and MLE. Hypothesis testing, Uniformly Most Powerful (UMP), generalized likelihood ratio tests and order statistics.

MACT 308 Linear Programming(3 cr.)

Prerequisite: MACT 240. Offered every 3 semesters.

Formulation of linear programming problems, graphical solutions, the simplex method. The revised simplex method, dual problems and sensitivity analysis. Transportation and assignment problems.

MACT 310 Operations Research (3 cr.)

Prerequisite: MACT 231. Offered every 3 semesters.

Network flows, minimal cost network flows, maximal-flow problems. Critical-path methods and PERT. Non linear programming. Deterministic and probabilistic inventory theory. Deterministic and probabilistic dynamic programming.

MACT 317 Probability and Statistics (3 cr.)

Prerequisite: MACT 231 or concurrently. Offered in fall and spring.

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.

MACT 321 Mathematics of Investment (3 cr.)

Prerequisites: MACT 132 or concurrently. Offered once a year.

The most commonly used mathematical functions for computing interest and discount rates

284 Undergraduate

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.

MACT 362 Formal and Mathematical Logic (3 cr.)

Same as PHIL 362. Prerequisites: MACT 200 or PHIL 221 or consent of the instructor. Offered occasionally.

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.

MACT 401 Complex-Function Theory (3 cr.)

Prerequisites: MACT 232. Offered every 3 semesters.

The complex plane, analytic functions. Cauchy-Riemann equations. Elementary functions, complex integration. Cauchy's theorem, Cauchy integral formula. Taylor and Laurent series. The calculus of residues.

MACT 403 Modern Algebra (3 cr.)

Prerequisites: MACT 200, 240, or consent of instructor. Offered every 3 semesters.

Sets, integers, groups. Integral domains. Fields. Rings and ideals. Homomorphisms. Quotient groups and quotient rings.

MACT 406 Stochastic Processes (3 cr.)

Prerequisites: MACT 233, MACT 306 or MACT 317. Offered once a year.

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.

MACT 407 Insurance Loss Models I (3 cr.)

Prerequisites: MACT 306. Offered once a year.

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.

MACT 408 Insurance Loss Models II (3 cr.)

Prerequisites: MACT 307 or MACT 317, and MACT 407. Offered once a year.

Nonparametric estimation for complete data: empirical estimates, Nelson-Aalen estimates; Nonparametric estimation for left truncated and right censored data Kaplan-Meier product-

Mathematics & Actuarial Science 285

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.

MACT 409 Selected Topics in Mathematics (3 cr.)

Prerequisites: consent of instructor. Offered occasionally.

Topics chosen according to interests of students and faculty. May be repeated for credit if content change.

MACT 410 Guided Studies in Mathematics (1-3 cr.)

Prerequisites: senior standing and consent of supervisor.

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. May be repeated for credit if content changes.

MACT 411 Selected Topics in Actuarial Science (3 cr.)

Prerequisites: Senior standing and consent of supervisor. Offered occasionally.

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. May be repeated for credit if content changes.

MACT 412 Mathematical Modeling (3 cr.)

Prerequisites: MACT 240 and MACT 406. Offered once a year.

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.

MACT 421 Mathematics of Derivatives Pricing I (3 cr.)

Prerequisites: MACT 321. Offered once a year.

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.

MACT 422 Mathematics of Derivatives Pricing II (3 cr.)

Prerequisites: MACT 421. Offered once a year.

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,

286 Undergraduate

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.

MACT 423 Life Contingencies I (3 cr.)

Prerequisites: MACT 306 and 321. Offered once a year.

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.

MACT 424 Life Contingencies II (3 cr.)

Prerequisites: MACT 423. Offered once a year.

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.

MACT 427 Applied Regression Methods (3 cr.)

Prerequisites: MACT 240 and either MACT 307, MACT 317 or ECON 218. Offered every 3 semesters.

Review of matrix algebra notation and vocabulary. Standard least squares method and application to problems arising from social, biological and engineering sciences. Deviation from assumption of multicollinearity. Variable selection methods. Analysis of variance, logistic regression models. Course includes an applied project (a thorough analysis of real-life data using computer packaged programs).

MACT 428 Analysis of Time Series Data (3 cr.)

Prerequisites: MACT 427 or ECON 318. Offered once a year.

This course is a continuation of MACT 427. It deals with the problems of modeling 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.

MACT 429 Applied Multivariate Analysis (3 cr.)

Prerequisites: MACT 240 and either MACT 307, MACT 317, or ECON 318. Offered once a year.

Techniques of multivariate statistical analysis illustrated by examples from various fields. Topics include: Multivariate normal distribution. Sample geometry and multivariate distances. Inference about a mean vector. Comparison of several multivariate means, variances, and covariances. Detection of multivariate outliers. Principle components. Factor analysis. Canonical correlation. Discriminate analysis. Course includes an applied project (a thorough analysis of real-life data sets using computer-packaged programs).

MACT 431 Real Analysis I (3 cr.)

Prerequisites: MACT 200, 232 or consent of instructor. Offered every 3 semesters.

Heine-Borel and Bolzano-Weierstrass theorems. Sequences and series.

Continuity. Differentiability.

MACT 432 Real Analysis II (3 cr.)

Prerequisites: MACT 431. Offered occasionally.

Riemann-Stieltjes integral. Sequences and series of functions. Lebesgue integral. Hausdorff measure and dimension. Linear spaces and functions.

MACT 440 Graph Theory (3 cr.)

Prerequisites: MACT 200, and either MACT 317, MACT 306 or consent of instructor.

Settheoretic 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 FordFulkerson. Trees, connectivity and Menger's Theorem. Planarity and chromatic number. Choice of topics among: graphical probability models, dynamic programming, Bayesian Belief Propagation, and tree-width.

MACT 495 Senior Thesis (3 cr.)

Prerequisites: senior standing. Offered occasionally.

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.

MACT 497 Practical Internship (3 cr.)

Prerequisites: Permission of the Department Chair or the Director of Actuarial Science Program. Offered in fall, spring and summer.

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.

288 Undergraduate

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-Haggag (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

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

Mechanical Engineering 289

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) of the core requirement is covered by MENG 490 (1 credit hour), and MENG 491 (2 credit).

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.)

290 Undergraduate

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)

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.)

Mechanical Engineering 291

- 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 - Nanomaterials, synthesis, processing and applications (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.)

292 Undergraduate

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)

Minor in Mechatronics

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.)

CSCE 430 - Computer Hardware Design and Applications (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.)

Mechanical Engineering Courses (MENG)**MENG 215 Mechanical Engineering Drawing (1 cr.)**

Prerequisites: ENGR 115 and ENGR 101. Offered in fall and spring. One three hour lab period. Computer-aided drafting. Mechanical details and assembly drawings. Working drawings. Geometrical tolerances. Welding symbols and details, introduction to 3D modeling. Introduction to civil and architectural drawings.

MENG 327 Engineering Materials (3 cr.)

Prerequisite: CHEM 105 and ENGR 229. Offered in fall and spring.

Introduction to materials. Crystal structure of solids. Construction and use of phase diagrams in materials systems. Relationship of crystal structure to properties of metallic materials and their applications. Heat treatment of steels. Types of polymers, ceramics, glasses, and semiconducting materials and their applications.

MENG 339 Fundamentals of Manufacturing Processes (3 cr.)

Prerequisite: MENG 327. Offered in fall and spring. Two class periods and one three-hour lab period.

Processing by casting, powder metallurgy, metal working, material removal, welding and joining. Processing of plastics and ceramics. Finishing processes. Materials recycling.

MENG 341 Engineering Operations Research (3 cr.)

Prerequisites: ENGR 313. Offered in fall and spring.

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.

294 Undergraduate

MENG 342 Quality and Process Control (3 cr.)

Prerequisite: ENGR 313 and MACT 317. Offered in fall and spring. Two class periods and one three hour lab period.

Fundamentals of statistical quality control; control charts for variables and attributes; process capability analysis; sampling plans and techniques; introduction to design of experiments.

MENG 344 Work Analysis and Design (3 cr.)

Prerequisite: MENG 339. Offered in fall.

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.

MENG 346 Engineering and Project Management (3 cr.)

Prerequisites: MACT 317. Offered in fall.

Concepts of Engineering Management, Organizing, Motivation and Leadership, Incentive Plans, Performance evaluation, Project selection and initiation, Engineering Project Planning, Project scheduling, monitoring, control, and evaluation, Resources scheduling, Project management software.

MENG 355 Mechanics of Materials (3 cr.)

Prerequisites: ENGR 229 and MENG 215. Offered in fall and spring.

Internal reactions, load-stress relations and transformation of stresses for generally loaded rods. Generalized concepts of stress, strain and material relations. Energy methods. Elastic-plastic behavior of beams. Analysis of thin walled beams. Membrane theory of axisymmetric shells. Stress concentrations.

MENG 356 Mechanical Design I (3 cr.)

Prerequisites: ENGR 214, MENG 215 and 355. Offered in fall and spring. Two class periods and one three-hour design and analysis session.

Introduction to design concepts. Constructional details as affected by manufacturing, assembly, and strength considerations. Engineering materials. Design for steady and cyclic loading, and for rigidity and stability. Rigid and elastic connections. Bolts, rivets and welds. Design of shafts and springs. Use of interactive computer programs for problem solving is illustrated and encouraged. Design projects.

MENG 361 Fundamentals of Thermodynamics (3 cr.)

Prerequisites: ENGR 261 and CHEM 105. Offered in fall and spring.

Fundamental Concepts and Definitions. Thermodynamic Processes, pure substances and perfect gases, The First Law of Thermodynamics, the Second Law of Thermodynamics, the Carnot cycle. Thermodynamic Relations, Reversibility and Entropy.

MENG 362 Applied Fluid Mechanics (3 cr.)

Prerequisites: MENG 361. Offered in fall and spring. Two class periods and one three-hour lab period.

Dimensional analysis, fluid measurements, compressible flow, pipe network and water hammer, turbo machinery, pumps and turbines.

MENG 365 Applied Thermodynamics (3 cr.)

Prerequisites: MENG 361. Offered in fall and spring. Two class periods and one three-hour lab period.

Availability and second-law analysis. Power cycles: air standard and actual cycles; reversed cycles: refrigerators and heat pumps, gas mixtures, psychrometry and air conditioning, hydrocarbon reactions, waste heat recovery.

MENG 372 Mechanical Systems (3 cr.)

Prerequisites: ENGR 214, 313. Offered in fall and spring.

Linkage synthesis, position, velocity, and acceleration of mechanisms, cams, gears and gear trains, machine dynamics, rotating and reciprocating machines, dynamic balancing.

MENG 375 System Dynamics (3 cr.)

Prerequisites: PHYS 215 and MENG 372. Offered in fall and spring.

Mathematical modeling of mechanical, electrical, and electromechanical systems. Free and forced vibrations for single degree of freedom systems. Free and forced vibrations of multiple degree of freedom systems. State space and transfer function solutions. System analogies. Introduction to automatic control, Feedback Control, Time response analysis and Steady state error.

MENG 411 Turbo-Machinery (3 cr.)

Prerequisites: MENG 362. Offered in fall.

Preliminary design procedures for turbo-machines. Ideal and actual performance characteristics for hydraulic pumps and turbines, axial and centrifugal flow compressors and fans, axial and radial flow gas turbines. Cavitation in hydraulic machinery. Turbo-chargers. Hydro-power plants and pumped-storage.

MENG 412 Power Plant Technology (3 cr.)

Prerequisites: MENG 365 and MENG 466 or concurrent. Offered in fall.

Steam and Gas turbine power plants. Combined-cycle power plants. Co-generation. Principles of nuclear energy and introduction to Nuclear power plants. Environmental impacts of power plants.

MENG 413 Design of Renewable Energy Systems (3 cr.)

Prerequisites: MENG 365 and MENG 466 or concurrent. Offered in spring.

The world energy scene. Environmental impact of energy use. Wind power, PV and Solar Thermal Electricity and Biomass. Hybrid systems. Renewable energy generation in Power systems. Economics and sustainability.

MENG 415 Internal Combustion Engines (3 cr.)

Prerequisites: MENG 362 and MENG 365. Offered in spring.

Review of Air standard cycles. Diesel and Petrol combustion overview. Fuels and chemistry of combustion reactions. Octane and Cetane ratings. Fluid mechanic interactions with flames - burn rates. Overview of exhaust emissions. Turbocharging and supercharging, volumetric efficiency and valve timing.

296 Undergraduate

MENG 416 Design of Mechanical Systems in Building (3 cr.)

Prerequisites: MENG 365 and MENG 466 or concurrent. Offered in fall.

Calculation of building cooling and heating loads, and ventilation requirements. Design of Air conditioning and ventilation systems. Passive cooling and heating. Air conditioning equipment.

MENG 417 Refrigeration and Air-conditioning (3 cr.)

Prerequisites: MENG 466 or concurrent and MENG 365. Offered in spring.

Refrigeration and Air conditioning cycles and C.O.P. Vapor compression refrigeration systems. Absorption refrigeration. Cryogenics. Design of Air conditioning systems and components. Heat pumps and heating systems. District cooling.

MENG 421 Ceramics and Composites (3 cr.)

Prerequisites: MENG 339. Offered in spring. Two class periods and one three hour lab period. 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.

MENG 425 Polymers and Composites (3 cr.)

Prerequisites: MENG 339. Offered in spring. Two class periods and one three-hour laboratory. Polymeric materials, processing and design considerations. Structure, mechanical and physical properties of polymers. Degradation of polymers. Types and properties of polymer-matrix composite materials. Manufacturing of components made of polymers and composite materials. Case studies.

MENG 426 Metals, Alloys and Composites (3 cr.)

Prerequisite: MENG 339. Offered in fall. Two class periods and one three-hour lab period. Structure-property relationship in alloy systems. Imperfections in solids. Diffusion and phase transformation. Heat treatment of ferrous and non-ferrous alloys. Structure, properties and processing of metal matrix composites (MMCs). Behavior of metallic alloys and composite materials in service. Case studies and laboratory experiments.

MENG 427 Failure of Mechanical Components (3 cr.)

Prerequisite: MENG 339. Offered in spring.

Mechanical failures, fracture mechanics, types of corrosion. Failure modes: fracture fatigue, creep, corrosion and wear. Diagnosis and prevention of failures. Case studies.

MENG 428 Selection of Materials and Processes for Design (3 cr.)

Prerequisites: MENG 339 and 356. Offered in fall and spring.

Effect of material properties on design. Effect of manufacturing processes on design. Failure and reliability of components in service. Economics of materials and manufacturing processes. Decision making and the selection process. Integration of design and economic analysis with materials and process selection. Case studies.

MENG 429 Nanomaterials, synthesis, processing and applications (3 cr.)

Same as MENG 530 and NANO 531.

Prerequisites: MENG 339. Offered spring.

The course provides a comprehensive introduction to nanomaterials, their synthesis,

Mechanical Engineering 297

properties, processing techniques and applications. The coverage ranges from isolated clusters and small particles to nanostructured materials, multilayers and consolidated bulk products, thin films and coatings. Their chemical mechanical, optical and magnetic properties.

MENG 432 Materials, Processing, and Design (3 cr.)

Prerequisites: MENG 339. Offered in fall. Two class periods and one three-hour laboratory. 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.

MENG 436 Selected Topics in Materials and Manufacturing (3 cr.)

Prerequisites: MENG 339. Offered occasionally.

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.

MENG 439 Advanced Manufacturing Processes (3 cr.)

Prerequisite: MENG 339. Offered in fall. Two class periods and one three-hour lab period. 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.

MENG 441 Decision Support in Engineering Systems (3 cr.)

Prerequisites: MENG 341 and MATH 317. Offered occasionally.

Interactive computer-based engineering decision support systems (DSS), Design and development, informational data base, mathematical models including nonlinear, goal and dynamic programming problems, queuing and decision analysis, heuristics and user interface.

MENG 442 Quality and Reliability Engineering (3 cr.)

Prerequisite: MENG 342. Offered in spring.

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.

MENG 443 Systems Simulation (3 cr.)

Prerequisite: MENG 342. Offered occasionally.

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.

MENG 445 Production and Inventory Control (3 cr.)

Prerequisites: ENGR 313 and 345. Offered in fall and spring.

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.

MENG 447 Manufacturing System Automation (3 cr.)

Prerequisites: MENG 339. Offered in spring. Two class periods and one three-hour lab period.

298 Undergraduate

Computer assisted manufacturing systems NC, CNC, DNC, robotics, material handling, group technology, flexible manufacturing systems, process planning and control.

MENG 448 Facilities Planning (3 cr.)

Prerequisite: MENG 339. Offered in spring.

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.

MENG 449 Maintenance Management Systems (3 cr.)

Prerequisite: ENGR 345. Offered in fall.

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.

MENG 451 Computer-Aided Design and Prototyping (3 cr.)

Prerequisite: Senior standing, MENG 215 and MENG 356. Offered in spring. Two class periods and one three-hour lab period.

Introduction to CAD/CAM. CAD software and hardware. Geometric modeling. Types of curves and surfaces. Three-dimensional modeling. Data capturing techniques. Surface fitting techniques. Rapid prototyping techniques. Overview and utilization of typical interactive computer graphics package. Hands-on experience in using CAD software, 3D laser digitizing scanner, rapid prototyping machine, and other peripherals.

MENG 453 Finite Element Method and Applications in Design (3 cr.)

Prerequisite: MENG 355 and ENGR 313. Offered in fall. Two class-periods and one three-hour lab period.

Displacement approach for simple elements in structural mechanics. Generalization to three-dimensional elements. Overview of the finite element method (FEM), variational principles, transformation, assembly, boundary conditions, solutions, convergence and stability. Isoparametric elements. Applications to solid mechanics, heat conduction and coupled problems. Pre- and post processing. Integration of FEM in Computer Aided Design.

MENG 454 Finite Element Method in Dynamic Analysis and Design (3 cr.)

Prerequisite: MENG 453. Offered occasionally.

Finite element formulation of eigen problems and initial value problems in one- and multi-dimensions; model, harmonic and transient response; applications in mechanical engineering.

MENG 455 Design of Engineering Systems (3 cr.)

Prerequisite: MENG 356. Offered occasionally.

Elements of system architecture, product versus process-driven design objectives, design of systems, synthesis and analysis in systems design, case studies.

MENG 457 Mechanical Design II (3 cr.)

Prerequisite: MENG 356 and 372. Two class periods and one three-hour design and analysis session. Offered in fall and spring.

Design of machine elements used in power transmission: couplings, gears, bearings, roller

chain drives, clutches. Design for surface failure prevention. Applications: automotive and machine tool areas, etc. Basics of systems design. Design projects.

MENG 458 Integrated Design (3 cr.)

Prerequisites: MENG 339 and 356. Offered in fall.

The engineering design environment. Design and manufacturing. Design pitfalls and their early identification. Design measures for improving the maintainability, reliability and environmental impact. Implementation of the principle of redundancy. Introduction to design optimization.

MENG 466 Heat Transfer (4 cr.)

Prerequisites: ENGR 313 and MENG 362. Three class periods and one three-hour laboratory period. Offered in fall and spring.

Steady and unsteady, one and multi-dimensional, heat conduction. Finite-difference and Finite-volume methods applied to heat conduction. Heat transfer by natural and forced convection. Heat transfer by radiation. Design of Heat exchangers.

MENG 475 Applied Vibration Measurements, Analysis and Control (3 cr.)

Prerequisites: Senior standing and MENG 375. Two class periods and one three-hour laboratory period. Offered in fall.

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.

MENG 476 Automatic Control Systems (3 cr.)

Prerequisites: Senior standing and MENG 375. Offered in spring.

Feedback control system and analysis in time domain. PID controllers: analysis and design. State space controllers. Stability and the concept of Routh-Hurwitz. Root locus analysis and design. Analysis of systems in frequency domains. Bode plots and controller design. Nyquist stability criterion. Introduction to intelligent control. Introduction to digital control systems.

MENG 477 Robotics: Design, Analysis and Control (3 cr.)

Prerequisites: ENG 214. Offered in fall.

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.

MENG 478 Microcontrollers and Mechatronics systems (3 cr.)

Prerequisite: PHYS 215. Two class periods and one three-hour laboratory period. Offered in fall.

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.

MENG 479 Integrated Design of Electromechanical Systems (3 cr.)

Prerequisites: MENG 375. Two class periods and one three-hour laboratory period. Offered in spring.

300 Undergraduate

Mechatronics design and development process, Digital systems, Microcontrollers in Mechatronics, Programmable logic controllers (PLC), PLC and interfacing techniques, Ladder logic programming, servo motors: motion, braking and speed control, Transducers and instrumentation, Vision sensing principles, Power supplies, Pneumatic and Electro-pneumatic control. Design, control and application of electromechanical systems, Integrated Mechatronics design project.

MENG 480 Special Problems in Engineering (1-3 cr.)

Prerequisite: approval of department chair. May be repeated for credit if content changes.

Offered in fall and spring.

Independent study in various problem areas of engineering may be assigned to individual students or to groups. Readings assigned and frequent consultations held.

MENG 490 Senior Project I (1 cr.)

Prerequisite: senior standing and completion of all ENGR in addition to a minimum of 18 credits of MENG. Offered in fall and spring.

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.

MENG 491 Senior Project II (2 cr.)

Prerequisite: MENG 490. Offered in fall and spring.

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.

MENG 492 Selected Topics in Mechanical Engineering (3 cr.)

Prerequisite: senior standing. Offered occasionally.

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.

MENG 494 Selected Topics in Design (3 cr.)

Prerequisite: senior standing in mechanical engineering. Offered in spring.

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.

MENG 497 Industrial Training (1 cr.)

Prerequisite: Senior standing and completion of all ENGR in addition to a minimum of 18 credits of MENG. Offered in fall.

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.

Middle East Studies

Middle East Studies Program
School of Global Affairs and Public Policy

Director: R. Saad

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 239 - Economic History of the Modern Middle East (3 cr.)
- HIST 355 - State and Society in the Middle East, 1699-1914 (3 cr.)

302 Undergraduate

HIST 356 - Society and State in the Middle East, 1906-present (3 cr.)
 POLS 202 - Introduction to Comparative Politics (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 (3 cr.)

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 (3 cr.)

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 (3 cr.)

Electives (29 -41 credits)

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

Middle East Studies Courses (MEST)

MEST 400 Individual Study and Selected Readings (1-3 cr.)

Prerequisites: Consent of instructor and department on the basis of a well-defined proposal. Guided reading, research, and discussion based on a subject of mutual interest to a student and faculty member.

Middle East Studies 303

MEST 430 - Special Topics in Middle East Studies (3 cr.)

Selected topics to be investigated under the guidance of a faculty member, may be offered as a seminar. May be repeated for credit if content changes.

304 Undergraduate

Music

Department of Performing and Visual Arts School of Humanities and Social Science

Associate Professors: J. Baboukis (Director of Music)

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

Post-Doctoral and Assistant Professor: N. Fischer

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 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 PVA 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 Performing and Visual 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 would

- 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 will present a solo recital.
- sing in a 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 (57 - 65 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.)

306 Undergraduate

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 (28 - 33 cr.)

MUSC 280/281/282/283 - 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 (2 cr.)

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 (1 cr.)

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 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.)
- 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.)

308 Undergraduate

MUSC 267/367 Cairo Choral Society (1 cr.)

Music Technology (27 credits):

MUSC 232/332/432 - Digital Audio / MIDI Lab (1 cr.)

MUSC 330 - Introduction to Music Technology (3 cr.)

MUSC 331 - Music Production Using Protocols 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 Protocols II (3 cr.)

Electives (29–41 credits)

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 18 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 (5 cr.)

MUSC 280, 281 Applied Private Instruction (2 cr. each = 4 cr.)

One semester of ensemble, chosen from among the following:

MUSC 262 Arab Music Ensemble (1 cr.)

MUSC 263 Guitar Ensemble (1 cr.)

MUSC 264 Chamber Ensemble (1 cr.)

MUSC 265 Practicum (1 cr.)

MUSC 266 Chamber Singers (1 cr.)

MUSC 267 Cairo Choral Society (1 cr.)

Music Technology (3 cr.)**EITHER**

MUSC 330 - Introduction to Music Technology (3 cr.)

OR

MUSC 331 - Music Production Using Protocols 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 Protocols 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.)

310 Undergraduate

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.)

MUSC 330 - Introduction to Music Technology (3 cr.)

MUSC 331 - Music Production Using Protools I (3 cr.)

Music Courses (MUSC)

MUSC 180 How to Read Music (2 cr.)

Instruction in how to read music.

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.

MUSC 199 Selected Topic for Core Curriculum (3 cr.)

Offered occasionally.

Course addressing broad intellectual concerns and accessible to all first-year students as part of the Primary Level Core.

MUSC 220 Introduction to Music (3 cr.)

Offered in fall and spring.

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.

MUSC 225 World Music (3 cr.)

Study of the musical practices and cultures of representative diverse nations and peoples.

Requires no previous musical training.

MUSC 232/332/432 Digital Audio / MIDI Lab (1 cr.)

Prerequisites: MUSC 220 and 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.

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.

MUSC 240 Western Music Theory I (3 cr.)

Prerequisites: MUSC 180, 220 and 280. Concurrent with MUSC 241. Offered in fall and spring. 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.

MUSC 241 Sight-Singing and Aural Skills I (1 cr.)

Concurrent with MUSC 240.

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.

Students must be able to match pitch within a 1-octave range.

MUSC 245 Arab Music Theory I (3 cr.)

Prerequisites: MUSC 180, 220 and 280. Concurrent with MUSC 246.

Students will review the elementary concepts of jinses (Arab tri-, tetra-, or pentachord), maqamat (Arab music modes), and dorooob (Arab rhythm) notation. The course quickly progresses through maqam construction, jins intervals, darb construction, and fundamental concepts of Arab music texture and instrumentation. By the end of the semester, students will be able to compose Arab music simple forms, spell jinses and maqamat, and will begin to understand maqamat families and how to modulate between maqam family members, and the takht (traditional Arab music ensemble) notation and scoring.

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

Prerequisites: MUSC 180, 220 and 280. Concurrent with MUSC 245.

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 dorooob in simple and compound meters. Students will practice dictation as well as aural skills.

MUSC 250 Guitar and Piano: Accompaniment and improvisation "by ear" (3 cr.)

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. Requires no previous musical training.

312 Undergraduate

MUSC 252 Vocal Methods (3 cr.)

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. Requires no previous musical training.

MUSC 255 The Songs of America (3 cr.)

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. Requires no previous musical training.

MUSC 262/362/462 Arab Music Ensemble (1 cr.)

Prerequisites: MUSC 262 must be taken concurrently with MUSC 342. Offered in fall and spring. The class will constitute a vocal and instrumental performing ensemble, which will rehearse during class periods. MUSC 462 may be repeated for credit. Rehearsal will lead to a concert performance of the music prepared.

MUSC 263/363/463 Guitar Ensemble (1 cr.)

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. 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.

MUSC 264/364/464 Chamber Music Ensembles (1 cr.)

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.

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.

MUSC 265/365/465 Rehearsal/Performance Practicum (1 cr.)

Prerequisites: consent of music faculty (required prior to registration). 465 may be repeated for credit. 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.

MUSC 266/366/466 Chamber Singers (1 cr.)

Prerequisites: consent of the director. Offered in fall and spring. 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. 466 may be repeated for credit. Rehearsal will lead to a concert performance of the music prepared.

MUSC 267/367/467 Cairo Choral Society (1 cr.)

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.

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.)

MUSC 280/281/282/283 Applied Private Instruction (2 cr.)

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 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.

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; those in the major in performance, or seeking admission to the major, should practice at least 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.

Notes:

All students are required to meet with their teacher **IN THE FIRST WEEK OF CLASSES**. They **MUST** contact the Music Coordinator in the PVA 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.

MUSC 284/285/286 Private Instruction for Piano Proficiency (1 cr.)

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.

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.

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 PVA 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.

MUSC 299 Selected Topic for Core Curriculum (3 cr.)

Prerequisites: RHET 101. Offered occasionally.

Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

MUSC 311 Guitar Pedagogy (3 cr.)

Pre-requisites: MUSC 180, MUSC 220 and MUSC 280/480.

314 Undergraduate

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.

MUSC 330 Introduction to Music Technology (3 cr.)

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. Preference will be given to declared music minors. No prior musical training is required.

MUSC 331 Music Production Using Protools I (3 cr.)

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.

MUSC 333 Microphone Techniques (3 cr.)

Prerequisites: MUSC 330 and 331.

A brief history of microphone development and a general introduction to microphone theory and design, with an overview of wireless microphones. Detailed study of microphone polarity, frequency response, and amplitude ability, which are the features that define how the microphone captures sound and its suitability to different instruments. In addition, the course will study microphone placement, and microphone preamplifiers and accessories, in recording in studio and in live performances.

MUSC 334 Music Production for Visual Media (3 cr.)

Prerequisites: MUSC 220, 330 and 331.

This course is designed to introduce students to a range of techniques and technologies used in producing audio for visual media. The course will examine theory and practice used in music production for TV, film, web, video games, and art installations. Students will acquire skills in digital music production for visual media by working on projects which simulate actual professional productions. The course also provides the terminology of audio production and the basic theoretical framework upon which production skills can be built.

MUSC 335 Electronic Music (3 cr.)

Prerequisites: MUSC 220 and 330.

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 Musik), 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.

MUSC 336 Sound for Picture Production (3 cr.)

Prerequisites: MUSC 330 and 331.

This course provides an in-depth, interactive study of sound and its relationship to picture. Topics will include post production areas relative to time code, synchronization, workflow, data interchange, sound recording and editing, lip-syncing and voice over tracks using ADR (Automatic Dialog Replacement), creating special effects with Foley, routing structures, sound mixing, and delivery methods. All of the above will be first described in class lectures and then applied practically in projects.

MUSC 337 Music for Film (3 cr.)

MUSC 340 Western Music Theory II (3 cr.)

Prerequisites: MUSC 240 and 241. Concurrent with MUSC 340.

Students will review the concepts of counterpoint and harmony. The course will cover instrumentation, phrase, tonic and dominant, embellishing tones, chorale harmonization and figured bass, phrase structure and expansion, diatonic sequence, and intensifying the dominant. Students will learn to analyze, compose, and write about music topics covered in class.

MUSC 341 Sight-Singing and Aural Skills II (1 cr.)

Prerequisites: MUSC 240, 241. Concurrent with 340.

Students will review the intermediate concepts of pitch and rhythmic notation. By the end of the semester, they will be able to sing more complex melodies in major and minor tonalities, and develop their ability to perform simple and compound meters, aurally identify all intervals, and study phrasing, cadences, and the harmonic expansion of secondary chords.

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

Prerequisites: MUSC 220.

Study of Arab music and song in its historical and cultural context, from its origins to the present day.

No previous experience in Arab music is required.

MUSC 345 Arab Music Theory II (3 cr.)

Pre-requisites: MUSC 245 and MUSC 246.

Concurrent: Students in this course must also register for MUSC 346.

Review of the instrumental and song forms of Arab music. The course will explore maqam construction, jins intervals, darb construction, and fundamental concepts of Arab music texture and instrumentation. By the end of the semester, students will be able to analyze Arab music instrumental and song forms and extract darbs and maqamat from them. In addition students will be able to compose Arab music, modulating between maqamat and changing darbs in the same piece.

MUSC 346 Maqam II (Arab Music Sight-Singing and Aural Skills) (1 cr.)

Prerequisites: MUSC 245 and MUSC 246. Concurrent: Students in this course must also register for MUSC 345.

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

316 Undergraduate

families, and articulate and decorate darbs in simple and compound meters. Students will practice dictation as well as aural skills.

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

Prerequisites: MUSC 220 and 240.

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.

MUSC 370 Selected Topics in Music (3 cr.)

Prerequisites: consent of the instructor. Offered occasionally.

May be repeated for credit if content changes.

MUSC 371 Western and Arab Musical Instruments (3 cr.)

Prerequisites: MUSC 220.

Fundamentals of percussion, brass, woodwind, string, keyboard, and electric and electronic instruments in Western and Arab music. The course will explain how sound is produced in these instruments, looking at pitch and decibel ranges as well as playing techniques. Also, this course will examine the structure of music ensembles, from the orchestra and Arab takht to modern and contemporary ensembles in Western and Arab music.

MUSC 372 Diction for Singers in the Western Tradition (3 cr.)

Prerequisites: MUSC 280/480 (at least two semesters) or permission of the instructor.

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.

MUSC 402 Independent Study (1-3 cr.)

Prerequisites: Open to students with a minimum B average. Offered in fall and spring.

In exceptional circumstances, some advanced music students may arrange, with departmental approval, to study beyond the regular course offerings. May be repeated for credit if content changes.

MUSC 438 Music Production Using Protocols II (3 cr.)

Prerequisites: MUSC 330 and 331.

A continuation of Music Production Using Protocols I. The course will teach students advanced sound engineering techniques. For example, students will learn how to adapt their workstation (including the RAM, 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 Protocols, 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.

MUSC 439 Digital Mixing Techniques (3 cr.)

Prerequisites: MUSC 220, 330, 331 and 333.

The course will examine the theory and practice of the music mixing process and mixing analysis, using a digital audio workstation (DAW) application, Protools v.8.0.1, currently the market standard. Students will study the different hardware (like studio monitors or speakers), software (i.e. the Protools application), and processes (like meters and signal flow), involved in digital mixing, the use of equalizers, dynamics processors, effects (reverb, chorus and delay) and pitch corrections, and the different types of panning, automation and bouncing of final mixes.

MUSC 440 Western Music Theory III (3 cr.)

Prerequisites: MUSC 340 and MUSC 341. Concurrent: students in this course must also register for MUSC 441.

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 mediant and submediants, and the Neapolitan sixth and augmented sixth chords. Students will leave this course with ability to analyze, compose, and write about all of the topics covered in Western Music Theory I-III.

MUSC 441 Sight-Singing and Aural Skills III (1 cr.)

Prerequisites: MUSC 340 and MUSC 341. Concurrent: students in this course must also register for MUSC 440.

Review of advanced concepts of pitch, harmony, and rhythmic notation. By the end of the semester, students will be able to sing melodies in all major and minor tonalities, articulate rhythms in simple, compound, and irregular meters, arpeggiate harmonic progressions include augmented and other predominant harmonies and modulation, and handle various chromatic techniques.

MUSC 480/481/482/483 Advanced Applied Private Instruction (3 cr.)

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.

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.

All students are required to meet with their teacher IN THE FIRST WEEK OF CLASSES.

MUSC 490 Advanced Seminar (3 cr.)

Prerequisites: Consent of the instructor. Offered occasionally.

In-depth examination of special advanced topics in music determined by the special interest and expertise of the faculty. Designed for advanced students.

MUSC 492 Capstone Final Recital (3 cr.)

Prerequisite: MUSC 482.

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

318 Undergraduate

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.

Petroleum and Energy Engineering

Department of Petroleum & Energy Engineering
School of Sciences and Engineering

Professor: M. Nasrallah (Founding 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

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.

320 Undergraduate

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 (3 cr.)
 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 (3cr.)
 PENG 313 - Drilling Engineering I Lab (1 cr.)
 PENG 320 - Well Logging (2 cr. + 1 cr.)
 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.)

Petroleum & Energy Engineering 321

PENG 334 - Reservoir Simulation and Well Testing lab (1 cr.)
 PENG 351 - Natural Gas Engineering (3 cr.)
 PENG 361 - Thermodynamics (3 cr.)
 PENG 363 - Heat Transfer (3 cr.)
 PENG 373 - Principles of Energy Engineering (3 cr.)
 PENG 374 - Corrosion and Oxidation Protection (3 cr.)
 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 463 - Energy conversion and materials (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 470 - Environmental Protection & Chemical Pollution (3 cr.)
 PENG 471 - Reservoir Simulation and Modeling (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

A minimum of 9 credit hours from the following courses that are also listed under concentration electives must be completed.

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 (3 cr.)

Prerequisites:

Completion of PENG courses 218, 227, 329, 361, 363, 375, 462, and 463.

Petroleum Engineering Courses (PENG)

PENG 200 Introduction to Petroleum Geology (2 cr.)

Prerequisites: CHEM 105. Offered in fall and spring.

Basic concepts of Geology; Uniformization, Geologic Time, Plate Tectonics, Rocks and Minerals (Igneous, Sedimentary and Metamorphic), Minerals, Origin of Sedimentary

322 Undergraduate

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.

PENG 218 Electrical Engineering (2 cr.)

Prerequisites: PHYS 112, MATH 231. Offered in fall or spring.

Electric circuit theory; Three-phase systems; circuit analysis; electrical insulation; electrical measurements; energy conversion; induction motors, switchgear and substation apparatus, electric heating, Acoustics.

PENG 219 Fundamentals of Surveying (1 cr.)

Prerequisites: MACT 132. Offered in fall or spring.

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.

PENG 227 Materials Engineering (3 cr.)

Prerequisites: CHEM 105 and ENGR 261. Offered in fall or spring.

Structure and properties of materials; Metals; Ceramics; Plastics; Phase Equilibria; Structure/Properties relationship; Materials Selection; Performance of materials in oil environment.

PENG 301 Petroleum Geology and Exploration (3 cr.)

Prerequisites: PENG 200. Offered in fall or spring.

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.

PENG 302 Fluid and Rock Properties (3 cr.)

Prerequisites: PENG 301. Offered in spring.

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.

PENG 303 Fluid and Rock Lab (1 cr.)

Prerequisites: PENG 302 or concurrent. Offered in spring or fall.

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

Petroleum & Energy Engineering 323

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.

PENG 311 Drilling Engineering I (3cr.)

Prerequisites: PENG 302. Offered in fall and spring.

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.

PENG 313 Drilling Engineering I Lab (1 cr.)

Prerequisites: PENG 311 or concurrently. Offered in fall or spring.

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 will perform design problems.

PENG 320 Well Logging (2 cr. + 1 cr.)

Prerequisites: PENG 311. Offered in fall.

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.

PENG 322 Oil and Gas Production (2 cr. + 1cr. lab)

Prerequisites: PENG 320. Offered in spring.

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.

PENG 331 Reservoir Engineering and Recovery (3 cr.)

Prerequisites: PENG 302. Offered in fall.

Properties of Reservoirs, Fundamentals of Reservoir Engineering, Classification of Petroleum Reservoirs; Oil and Gas Calculations; Oil Material balance equations, Gas material balance equations, Reserves; Principles of Fluid Flow, Single & Multiphase flow, In-compressible Fluid Flow, Flow in Porous Media, Unsteady State Diffusivity Immiscible frontal advance theory and its applications; Introduction to water flooding theory.

PENG 332 Well Completion and Workover (3 cr.)

Prerequisites: PENG 322 and 374. Offered in fall.

Classification of completions; Design; Productivity; Formation Damage; Perforation Testing; Completion Fluids and Equipment; Sand Control. Squeeze cementing; subsea completion (for offshore wells), Workover operations, overview of minor and major workover methods.

324 Undergraduate

PENG 333 Reservoir Simulation and Well Testing (3 cr.)

Prerequisites: PENG 332. Offered in spring.

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, Reservoir Simulation Fundamentals; Data Required; Models; Exercises using the state of the art well simulation and testing software.

PENG 334 Reservoir Simulation and Well Testing lab (1 cr.)

Prerequisites: PENG 333 or concurrently. Offered in spring.

Data Analysis and Modeling Exercises using the state of the art well testing and reservoir simulation software.

PENG 351 Natural Gas Engineering (3 cr.)

Prerequisite: PENG 320 and 331. Offered in fall or spring.

Phase Behavior of Multicomponent Systems; Differential and Flash Vaporization; Solubility of Natural Gas in Reservoir Fluids; Compressibility Factor and Computations; Gas Treatment and Liquefaction; Transmission.

PENG 361 Thermodynamics (3 cr.)

Prerequisites: ENGR 261 and CHEM 105. Offered in fall or spring.

Fundamental Concepts and Definitions; Properties of Pure Substances; First and Second Law of Thermodynamics; Reversed Cycles; Reversibility and Entropy; Vapor and Gas Power Cycles.

PENG 363 Heat Transfer (3 cr.)

Prerequisites: PHYS 111 and PENG 361. Offered in spring.

Steady and Unsteady State Conduction, Forced and Natural convection, Radiation Heat Transfer and Solar Radiation, Heat Exchangers.

PENG 373 Principles of Energy Engineering (3 cr.)

Prerequisites: ENGR 261 and PENG 363. Offered fall or spring.

Basic energy calculations; material, mass, and energy balance; reaction rates during chemical transformations in energy systems. Energy storage; Regeneration.

PENG 374 Corrosion and Oxidation Protection (3 cr.)

Prerequisite: CHEM 105, PENG 227 and PENG 361. Offered in fall or spring.

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.

PENG 375 Hydrogen and Fuel cells (3 cr.)

Prerequisites: PENG 218 and 374. Offered fall or spring.

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.

PENG 411 Drilling Engineering II (3 cr.)

Prerequisites: PENG 320. Offered in fall.

Petroleum & Energy Engineering 325

Controlled drilling, Drilling Hazards & Safety, Horizontal Drilling; Multilateral Drilling, Drilling Optimization; Hole Problems; Modern Drilling Techniques; Well Control, Offshore Drilling.

PENG 412 Enhanced Oil Recovery (3 cr.)

Prerequisites: PENG 333. Offered in spring.

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 steam flooding.

PENG 451 Petroleum and Gas Transmission and Storage (3 cr.)

Prerequisite: PENG 322 and 374. Offered every other semester.

Pipe Line Transport; Pipe Line Design; Velocity and losses; Fittings, Valves, and Bends; Pipe Line Construction and Protection; Pumping and Boosting Stations; Gas Transmission Lines; Gauging and Metering; Pipe Line Automation; Tanker and Railroad Transportation; Evaporation Losses; Storage; Safety.

PENG 461 Reservoir Economics, Management, & Risk Analysis (3 cr.)

Prerequisites: PENG 322 and ENGR 345. Offered in spring.

Analysis of Investment Projects, Reserves, Depletion, Regional and Global Legislation and Taxation regulations; Management functions focusing on Planning, Organizing, Leading and Controlling, Human Resources Development and People management; Incentives; Industrial Risk Assessment and Management in terms of hazard, spill control, dose response, exposure, and characterization.

PENG 462 Renewable and Alternative Energy (3 cr.)

Prerequisites: PENG 373 and 375. Offered in fall or spring.

Principles of Renewable and Alternative Energy Systems: Wind, Solar, Biogas, Geothermal, Fuel Cells, and Hydrogen Technologies. Economic Aspects; Efficiency; Introduction to Nuclear Energy. Connection to Grid, Smart Grids and intermittency, Market liberalization.

PENG 463 Energy conversion and materials (3 cr.)

Prerequisites: PENG 462. Offered fall or spring.

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.

PENG 470 Environmental Protection & Chemical Pollution (3 cr.)

Prerequisites: CHEM 105 and 203 or consent of instructor. Offered every other semester.

Air Pollution; Water Pollution; Chemical Pollution, Combustion Emissions; Toxicity, and Poisoning; Environmental Management; Environmental Hazards; Industrial Pollution; Safety; Regional and Global Regulations and Certifications. Biological Oxygen Demand, Health and Safety, Oil spills and disasters, selected Case Studies.

PENG 471 Reservoir Simulation and Modeling (3 cr.)

Prerequisites: ENGR 313 and PENG 333. Offered in fall.

Reservoir simulation fundamentals, data required, model design concepts, simulation results interpretation, History matching, Field wide Simulation, Future performance prediction,

326 Undergraduate

Reservoir Management, and Optimization techniques using economic analysis.

PENG 472 Ground Water Hydrology and Contamination (3 cr.)

Prerequisites: PENG 363 and 374. Offered occasionally.

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.

PENG 474 Energy and the Environment (3 cr.)

Prerequisites: PENG 218, 373 and 374. Offered in fall or spring.

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.

PENG 475 Greenhouse Technology and Emission Reduction (3 cr.)

Prerequisites: PENG 218, 373 and 374. Offered fall or spring.

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 green house gases; Energy efficiency in combating emissions NOFA (non fossil fuel agreements) Kyoto and beyond.

PENG 476 Principles of Nuclear Engineering (3 cr.)

Prerequisites: PENG 373, and 462. Offered fall or spring.

Introduction to nuclear engineering; Global and national energy requirements; Radioactivity; Atomic models; Fission and fusion reactor concepts; Neutron diffusion theory; Radiation protection and safety.

PENG 480 Special Problems in Petroleum and Energy Engineering (1-3 cr.)

Prerequisites: Consent of instructor and department chair on the basis of a well-defined proposal. Independent study in various problem areas of Petroleum and Energy Engineering may be assigned to individual students or groups. May be repeated for credit if content changes. Readings assigned and frequent consultations held.

PENG 490 Senior Project I (1 cr.)

Prerequisite: Senior standing. Offered fall and spring.

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.

PENG 491 Senior Project II (2 cr.)

Prerequisite: Senior standing and PENG 490. Offered fall and spring.

Continuation of the capstone project. Oral presentation and report submission required.

PENG 494 Selected Topics in Petroleum and Energy Engineering (3 cr.)

Prerequisites: Senior standing. Offered fall and spring.

Petroleum Topics chosen from: Petroleum or Gas exploration, drilling production, simulation,

Petroleum & Energy Engineering 327

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.

PENG 497 Industrial Training (1 cr.)

Prerequisite: Completion of 110 credits including 18 credits in PENG. Offered fall and spring. 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.

328 Undergraduate

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

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 PHIL 220 (Philosophical Thinking).

Electives (32 - 44 credits)**Minor in Philosophy**

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 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.

Philosophy Courses (PHIL)**PHIL 100 Reading Philosophy (3 cr.)**

Offered occasionally.

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.

PHIL 199 Selected Topic for Core Curriculum (3 cr.)

Offered occasionally.

Course addressing broad intellectual concerns and accessible to all students, irrespective to major.

330 Undergraduate

PHIL 220 Philosophical Thinking (core curriculum requirement) (3 cr.)

Offered in fall and spring.

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.

PHIL 221 Informal Logic (3 cr.)

Offered in alternate years.

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.

PHIL 224 Self and Society (3 cr.)

Offered in alternate years.

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.

PHIL 226 Philosophy of Religion (3 cr.)

Offered occasionally.

Many religions include an intellectual and theoretical component that can be investigated independently of the religion itself. This course examines and clarifies some themes that arise from the rational investigation of the intellectual component of religion. Topics may include: reason and religious belief, proofs of the existence of God, the nature of religious language, the problem of evil, mysticism as a form of knowledge, and theological paradoxes (omnipotence, omniscience and free will, etc.)

PHIL 230 Introduction to Ethics (3 cr.)

Offered in alternate years.

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.

PHIL 234 Philosophy of the Social Sciences (3 cr.)

Offered occasionally.

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.

PHIL 238 World Philosophy (3 cr.)

Offered occasionally.

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.

PHIL 242 Philosophical Anthropology (3 cr.)

Offered occasionally.

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.

PHIL 258 Political Philosophy (3 cr.)

Offered in alternate years.

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.

PHIL 299 Selected Topic for Core Curriculum (3 cr.)

Prerequisite: RHET 101. Offered occasionally.

Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

PHIL 310 Philosophy and Art (3 cr.)

Offered in spring.

The course introduces the theme of beauty and issues of aesthetic value. Examples are drawn from areas such as literature, music, the plastic arts, and architecture.

PHIL 312 Ancient Philosophy (3 cr.)

Prerequisite: Two philosophy courses or consent of instructor. Offered every year.

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.

332 Undergraduate

PHIL 313 Medieval Philosophy (3 cr.)

Prerequisite: Two philosophy courses or consent of instructor. Offered every year.

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.

PHIL 314 Modern Philosophy (3 cr.)

Prerequisite: Two philosophy courses or consent of instructor. Offered every year.

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.

PHIL 315 Nineteenth Century Philosophy (3 cr.)

Prerequisites: Two philosophy courses or consent of instructor. Offered occasionally.

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.

PHIL 316 Twentieth Century Philosophy (3 cr.)

Prerequisites: Two philosophy courses or consent of instructor. Offered every year.

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.

PHIL 317 Current Trends in Philosophy (3 cr.)

Prerequisites: Two philosophy courses or consent of instructor. Offered occasionally.

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.

PHIL 318 Theory of Knowledge (3 cr.)

Prerequisite: Two philosophy courses or consent of instructor. Offered in alternate years.

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.

PHIL 319 Development and Responsibility (3 cr.)

Offered in alternate years.

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.

PHIL 330 Advanced Ethics (3 cr.)

Prerequisites: Two philosophy courses or consent of instructor. Offered in alternate years.

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.

PHIL 344 Literature and Philosophy (3 cr.)

Same as ECLT 344.

May be repeated for credit if content changes. Offered occasionally.

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.

PHIL 354 Islamic Philosophy (3 cr.)

Same as ARIC 354.

Prerequisite: ARIC/HIST 246 or ARIC/HIST 343 or consent of instructor. Offered occasionally.

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.

PHIL 356 American Philosophy (3 cr.)

Prerequisites: Two philosophy courses or consent of instructor. Offered occasionally.

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.

PHIL 360 Philosophy of Language and Communication (3 cr.)

Prerequisite: Two philosophy or consent of instructor. Offered in alternate years.

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.

PHIL 362 Formal and Mathematical Logic (3 cr.)

Same as MACT 362.

Prerequisites: PHIL 221 or MACT 200 or permission of the instructor. Offered occasionally.

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-

334 Undergraduate

mathematical problems in set theory and alternative logics will be discussed.

PHIL 382 Philosophy of Science and Technology (3 cr.)

Offered in alternate years.

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.

PHIL 402 Metaphysics (3 cr.)

Prerequisites: Two philosophy courses on the 300 or 400 level or consent of instructor. Offered occasionally.

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.

PHIL 403 Selected Topics in Philosophy (3 cr.)

Prerequisites: One philosophy course on the 300 or 400 level or consent of instructor. May be repeated for credit if content changes. Offered occasionally.

According to special interest of faculty and students.

PHIL 405 Independent Study in Philosophy (1-3 cr.)

Prerequisites: Three philosophy courses and consent of instructor.

Independent research projects in Philosophy.

PHIL 410 Advanced Seminar in Aesthetics (3 cr.)

Prerequisites: Philosophy 310 or consent of instructor. Offered occasionally.

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.

PHIL 418 Philosophical Masterpieces (3 cr.)

Prerequisite: One philosophy course on the 300 or 400 level or consent of instructor. May be repeated for credit if the content changes. Offered in alternate years.

This course will be an in-depth study of a single great work of philosophy and its place in the history of ideas.

PHIL 420 Philosophical Figures (3 cr.)

Prerequisites: One philosophy course on the 300 or 400 level or consent of instructor. May be repeated for credit if content changes. Offered in alternate years.

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.

Physics

Department of Physics School of Sciences and Engineering

Professors: S. Arafa, F. Assabghy, H. Omar, S. El-Sheikh (Associate Chair), S. Sedky (Associate Dean of Graduate Studies and Director of Science & Technology Research Center), A. Shaarawi (Dean of Graduate Studies)

Associate Professors: E. Abdel-Rahman (Chair), A. El Fiqi (Vice President for Student Affairs), E. Soliman, A. Awad

Assistant Professors: K. Addas, A. Ibrahim, M. Swillam, N. Allam, A. Galal

Physics is the most fundamental of the Physical Sciences. Physics lead to a deepened understanding of the phenomena in the world around us. The discipline of Physics is a training of the mind, and a methodology for approaching and solving problems. The significance of Physics is manifested in its accomplishments in the development of the Scientific Method as well as providing an important component of all physical sciences and engineering disciplines.

Physics has always attracted special students, challenged by modern theories that shaped and are still shaping our understanding of the universe like the theory of relativity, quantum mechanics, superconductivity and particle physics; just to name a few. A degree in Physics leaves one poised to enter many professions that include but are not limited to traditional physics. The discipline of Physics teaches skills that are transferable to many other professions, including electronics, computer and oil industries. These transferable skills include: mathematical modeling, problem solving, designing experiments, interpretation of experimental data, reflecting on answers before trusting them, research experience, laboratory techniques and communication skills.

Bachelor of Science

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 123L, PHYS 112, PHYS 124L, 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.

336 Undergraduate

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 (3 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 cr.)
 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)

Minor in Physics

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.

The minor in physics is comprised of (17 credits)

- PHYS 204L - Optics Laboratory (1 cr.)
- PHYS 211 - Modern Physics (3 cr.)

338 Undergraduate

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.)

Physics Courses (PHYS)

PHYS 100 Physics for Poets (3 cr.)

Offered in fall and spring.

A conceptual overview of classical and modern physics. Mechanics, properties of matter, heat, sound, electricity and magnetism, light, atomic and nuclear physics, relativity theory. 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 (3 cr.)

Prerequisites: Thanawiya 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. Offered in fall, spring and summer.

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.

PHYS 112 Electricity and Magnetism (3 cr.)

Prerequisites: PHYS 111, 123L, MACT 132 or concurrent. Concurrent with PHYS 124L. Offered in fall, spring and summer.

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.

PHYS 123L General Physics Laboratory I (1 cr.)

Prerequisites: Concurrent with PHYS 111. Offered in fall, spring and summer.

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. One three-hour laboratory period.

PHYS 124L General Physics Laboratory II (1 cr.)

Prerequisites: Concurrent with PHYS 112. Offered in fall, spring and summer.

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. One three-hour laboratory period.

PHYS 199 Selected Topic for Core Curriculum (3 cr.)

Offered occasionally.

Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

PHYS 204L Optics Laboratory (1 cr.)

Prerequisites: PHYS 214 or concurrent. Offered in fall and spring.

Basic experiments in physical optics with special emphasis on laser optics.

PHYS 211 Modern Physics (3 cr.)

Prerequisites: PHYS 112 and MACT 231 or concurrent. Offered in fall and spring.

Concepts of general relativity. The postulates of special relativity. The Lorentz transformations, length contraction and time dilation. The relativistic Doppler effect. Relativistic dynamics. Introduction to general relativity. Nuclear physics: nuclear properties, radioactivity and nuclear reactions. Blackbody radiation and the Compton effect. Rutherford's nuclear model. The Bohr model. X-ray spectra. Experimental foundations of quantum mechanics.

PHYS 212 Quantum Mechanics I (3 cr.)

Prerequisites: MACT 233 or concurrent. Offered in fall and spring.

Wavelike properties of matter. The probability interpretation. The uncertainty principle. The Schrodinger equation in one dimension for simple potentials. The harmonic oscillator. The Schrodinger equation in three dimensions and the hydrogen atom. Spin and angular momentum. Classical and quantum statistics. Identical particles. Modern applications of quantum mechanics in solid state physics and other areas. Introduction to particle physics and fundamental interactions.

PHYS 214 Waves and Optics (3 cr.)

Prerequisites: PHYS 112 and 204L concurrent. Offered in fall and spring.

Wave phenomena; EM waves, geometrical and physical optics.

PHYS 215 Introduction to Electronics (3 cr.)

Prerequisites: PHYS 112 and PHYS 221L concurrent. Offered in fall, spring and summer.

Foundation of circuit analysis, AC theory, introduction to semiconductor devices, amplifiers, feedback oscillators.

PHYS 221L Electronics Laboratory I (2 cr.)

Prerequisites: concurrent with PHYS 215. Offered in fall, spring and summer.

Basic experiments in electronics.

PHYS 279 Computational Methods in Physics (2 cr. + 1 cr.)

Prerequisites: CSCE 106 and MACT 231. Offered in spring.

Linear systems of equations and matrices; eigen-values 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

340 Undergraduate

computer laboratory sessions.

Two credits lectures and one credit computer lab.

PHYS 305L Modern Sensors Laboratory (1 cr.)

Prerequisites: Concurrent with PHYS 315. Offered in fall.

Experiments in instrumentation illustrating material covered in PHYS 315.

PHYS 307L Electronics Laboratory II (1 cr.)

Prerequisites: Concurrent with PHYS 327. Offered in spring.

Basic experiments in instrumentation electronics.

PHYS 309L Digital Logic Design Laboratory (1 cr.)

Same as CSCE 239L and EENG 218L. Prerequisites: Concurrent with PHYS 319. Offered in fall, spring and summer.

The laboratory will cover experiments in digital design and experiments illustrating material of course PHYS 319.

PHYS 311 Thermodynamics and Statistical Mechanics (3 cr.)

Prerequisites: PHYS 212 and MACT 233. Offered in spring.

A macroscopic and microscopic study of equilibrium thermal physics, fundamental laws of thermodynamics, and statistical mechanics applied to various systems.

PHYS 312 Theoretical Mechanics (3 cr.)

Prerequisites: PHYS 212, MACT 233. Offered in fall.

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.

PHYS 314 Optical Systems and Instruments (3 cr.)

Prerequisites: PHYS 204L, PHYS 214. Offered in spring.

Optical instruments: Monochromators; diffraction gratings. Interferometers: Michelson, Mach-Zehnder, Fabry-Perot and Sagnac interferometers. Geometric optics: generalized paraxial formulas, matrix formalism of Gaussian optics. Imaging properties of lens systems: lens combination, diffraction effects, diffraction-limited lenses and Gaussian beam optics. Optical fiber sensors: Grating, polarization and intensity-based sensors; magnetic, strain, position, temperature and gas flow sensors.

PHYS 315 Modern Sensors (3 cr.)

Prerequisites: PHYS 215, PHYS 221L. Concurrent with PHYS 305L. Offered in fall.

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.

PHYS 316 Electromagnetic Theory (3 cr.)

Same as EENG 341. Prerequisites: PHYS 112, MACT 232. Offered in spring. Electric field and potential.

Gauss's law; divergence. Conductors, dielectrics and capacitance. Poisson's and Laplace's

equations. Electrostatic analogs. Magnetic field and vector potential. Time varying fields; displacement current. Maxwell's equations in differential form.

PHYS 318 Instrumentation Systems and Control (3 cr.)

Prerequisites: MACT 233. Offered in fall.

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.

PHYS 319 Digital Logic Design (3 cr.)

Same as CSCE 230 and EENG 210.

Prerequisites: CSCE 106. Concurrent with PHYS 309L. Offered in fall, spring and summer.

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, subtractors, multiplication and division circuits, memory types. Exposure to logic design automation software.

PHYS 321L Nuclear Physics Lab (1 cr.)

Prerequisites: PHYS 211 or concurrent. Offered in fall and spring.

Experiments in atomic and nuclear physics.

PHYS 322L Solid-State Physics Lab (2 cr.)

Prerequisites: PHYS 325. Offered in fall and spring.

Experiments in solid-state physics and semiconductor devices.

PHYS 323L Semiconductor Technology Lab (2 cr.)

Prerequisites: PHYS 215 and 221L. Offered in fall and spring.

Experiments in semiconductor and electronics technology.

PHYS 325 Introduction to Solid-State Physics (3 cr.)

Prerequisites: PHYS 212. Offered in spring.

Classification of materials and their structural characteristics, symmetry and properties of materials, free-electron theory, band theory, dielectric processes, optical processes in material.

PHYS 327 Operational Amplifiers and Applications (3 cr.)

Prerequisites: PHYS 215. Concurrent with PHYS 307L. Offered in spring.

Differential amplifiers, operational amplifiers, open-loop characteristics, inverting and non-inverting amplifiers, comparators, signal generators, op amps with diodes, differential instrumentation and bridge amplifiers, bias, offsets and drift, band width, slew rate noise and frequency compensation, active filters, IC timers, power supplies and power amplifiers.

PHYS 333 Introduction to Applied Geophysics (3 cr.)

Prerequisites: PHYS 214 and 315 or concurrent. Offered in spring.

Introduction to dynamic Earth; magnetic and gravimetric (potential), geo-electric and seismic methods to determine the physical properties, structure and dynamics of the Earth; seismic instruments and sources.

342 Undergraduate

PHYS 401 Senior Thesis and Seminar (3 cr.)

Prerequisites: Senior standing. Offered in fall and spring.

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.

PHYS 402 Independent Study (1-3 cr.)

Prerequisites: consent of the instructor, senior standing.

In exceptional circumstances some senior physics students, with departmental approval, may arrange to study a selected topic outside of the regular course offerings. The student and faculty member will select a topic of mutual interest and the student will be guided in research and readings. The student would demonstrate achievement either by submitting a report or passing an examination, according to the decision of the supervisor. May be repeated for credit more than once if contents change.

PHYS 404L Photonics and Optical Communication Laboratory (1 cr.)

Prerequisites: PHYS 204L or consent of instructor. Offered in fall.

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.

PHYS 407L Process Instrumentation and Digital Control Laboratory (1 cr.)

Prerequisites: PHYS 417 concurrent. Offered in spring.

Experiments on process measurement, digital process control and programmable logic controllers.

PHYS 409L Computerized Instrumentation Laboratory (1 cr.)

Prerequisites: Concurrent with PHYS 429. Offered in spring.

Experiments in computerized instruments illustrating material covered in PHYS 429.

PHYS 412 Semiconductor Physics (3 cr.)

Prerequisites: PHYS 325. Offered in fall.

Fundamental theory and characteristics of elemental and compound semiconductors. Semiconductor technology. PN junctions and transistors.

PHYS 413 Nuclear Physics (3 cr.)

Prerequisites: PHYS 211, 212 and 421 (recommended). Offered in fall.

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.

PHYS 414 Photonics (3 cr.)

Prerequisites: PHYS 214 or consent of instructor. Offered in fall.

Light sources and transmitters, receivers, laser diodes, LEDs and photodiodes. Electromagnetic mode theory for optical propagation. Optical fiber measurements: fiber

materials, multimode fibers, single-mode fibers. Fabrication, cabling, connectors and couplers. Optical amplifiers, Erbium-Doped fiber amplifiers. Modulation of light, multiplexing and de-multiplexing, fiber networking.

PHYS 415 Selected Topics in Physics (3 cr.)

Prerequisites: Junior standing or consent of instructor. Offered occasionally.

Topics chosen according to special interest, such as temperature physics, vacuum physics, solid-state electronics, electronics and communications. May be repeated for credit more than once if content changes.

PHYS 416 Experimental Methods in Undergraduate Research (3 cr.)

Prerequisites: Junior standing. Consent of instructor. Offered in fall and spring.

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.

PHYS 417 Process Instrumentation (3 cr.)

Prerequisites: PHYS 215 and PHYS 407L concurrent. Offered in spring.

Basic concepts in process measurement and control; process controllers; Final control devices; Typical applications; Programmable logic controllers; Distributed control systems; Process safety and alarming.

PHYS 421 Quantum Mechanics II (3 cr.)

Prerequisites: PHYS 212. Offered in spring.

Linear algebra. Functional and vector spaces. The statistical interpretation of state vectors. Quantum operators and commutation relations. Expectation values. Time-independent perturbation theory. The variational principle. Time-dependent perturbation theory and transition amplitudes. Scattering theory inclusion.

PHYS 426 Industrial Physics (3 cr.)

Prerequisites: Junior standing. Consent of instructor. Offered in spring.

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. Students field trips to several factories and manufacturing firms.

PHYS 427 Analytical Techniques in Instrumentation (3 cr.: 2 cr. lecture, 1 cr. lab)

Prerequisites: PHYS 215 and 221L. Offered in fall.

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.

PHYS 429 Computerized Instrumentation (3 cr.)

Prerequisites: PHYS 319 or consent of instructor. Concurrent with PHYS 409L. Offered in spring.

344 Undergraduate

Microcomputer architecture and operation. Programming: assembly versus high-level languages. Interfacing: polling, interrupts, direct memory access. Use of PLD's, PALASM language. Standard Interface: RS 232; IEEE488 (HPIB). System design and testing: top down design, bottom-up testing. Digital signal processing: A/D conversion; sample and hold devices.

Political Science

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: I. El Nur, S. El-Musa, M. Kassem, J. Maswood, E. Fishere

Assistant Professors: C. Davidson, R. El Mahdi, S. Soliman, H. Albrecht, S. Mc-Mahon, R. Bahi, N. Sika, R. Parfitt

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, viz: Comparative Politics, Development, International Relations, Political Economy, Political Theory and Philosophy, and Public and International law. The Middle East, Africa, and the Third World generally are emphasized in the program. As extra curricular enhancement, the Political Science Department sponsors a Model Arab League each year in the Fall and a Model United Nations in the spring.

Bachelor of Arts

Political Science 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 202. POLS 101 may only be taken in the Freshman Year which 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 202 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-

346 Undergraduate

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:

I. if POLS 101 has already been taken in the Freshman Year:

21 credits (7 courses) in the concentration plus 24 credits (8 courses) as electives.

II. if POLS 101 has not been taken in the Freshman Year:

24 credits (8 courses) in the concentration plus 21 credits (7 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 May be taken concurrently with POLS 101
- RHET 101 Is a prerequisite to POLS 202 and all 300 level POLS courses
- RHET 102 May be taken concurrently with POLS 202 and 300 level POLS courses
- RHET 201 Is prerequisite to all 400 level POLS courses

For all Political Science students:

Political Science concentration requirements (21 or 24 credits)

POLS 202 - Introduction to Comparative Politics (3 cr.)

(This course must be taken if, and only if, POLS 101 was not taken during the Freshman year.)

POLS 206 - Global Politics in the Twentieth Century (3 cr.)

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 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 Credits: (3 cr.)

(not to be taken as an independent study) in addition to:

ECON 201 - Introduction to Macroeconomics (3 cr.)

Political Science 347

General Electives

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

Students have the choice to use the 24 elective credits in Political Science (or 21 elective credits if they had to take POLS 202 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. Three of the five (or four) additional required Political Science elective courses may be used for a second specialization.

1. Requirements for the General Political Science field:

Students must take seven or eight Political Science courses, including four courses at the 400 level and one of the four 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:

348 Undergraduate

- 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 - Society and State 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.)

350 Undergraduate

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.

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: 24 cr.
- B. Political Science Specialization 9 cr.
- C. Honors Requirements 12 cr.

A. Concentration Requirements: (24 credits)

- POLS 202 - Introduction to Comparative Politics (3 cr.)
(or a 300 level course if the student had already taken 101 in the freshman year)

Political Science 351

- POLS/HIST 206 - Global Politics in the Twentieth Century (3 cr.)
- POLS 301 or 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 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: 12 crs.

- Honor Seminar POLS 400 (3 credits)
- Methodology course POLS 404 (3 credits)
- Senior Year Thesis POLS 500 (6 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.

Minors for Non-Political Science Majors:

Minor in Political Science

Requirements (15 credits) to be taken as follows:

- if POLS 101 has already been taken in the Freshman Year:
five Political Science courses at 300 or 400 level.
- if POLS 101 has not been taken in the Freshman Year:
POLS 202 plus four Political Science courses at 300 or 400 level.

Minor in International Relations

Requirements:

- POLS 202 - Introduction to Comparative Politics (3 cr.)
(This course must be taken if, and only if, POLS 101 was not taken during the Freshman year.)
- POLS 206 - Global Politics in the Twentieth Century (3 cr.)
- POLS 320 - International Relations (3 cr.)

352 Undergraduate

Additional Requirements

Plus **three** courses (**two** courses, if *POLS 202* 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.)

Minor in Middle East Politics

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 202 - Introduction to Comparative Politics (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.) *
- 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)

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

Minor in Political Economy

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

Requirements:

- The Minor requires successful completion of :
POLS 202 - Introduction to Comparative Politics (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 202 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 Courses (POLS)

POLS 101 Introduction to Political Science (3 cr.)

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.

POLS 199 Selected Topic in Political Science (3 cr.)

Course addressing broad intellectual concerns and accessible to all students, irrespective of major, and available for fulfillment of the primary level Social Sciences requirement in the core curriculum.

POLS 202 Introduction to Comparative Politics (3 cr.)

Prerequisites: RHET 101.

This course provides an introduction to the analysis of comparative politics, exploring differences in the institutional makeup and the workings of political systems worldwide. Topics covered include and 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. This course may not be taken if the student has already taken POLS 101.

POLS 206 Global Politics in the Twentieth Century (3 cr.)

Same as HIST 206. Offered in fall and spring.

The major political developments and socioeconomic changes, treated chronologically and geographically, from the origins of the First World War to the present.

POLS 299 Selected Topics for Core Curriculum (3 cr.)

Prerequisites: RHET 101. Offered occasionally.

Course addressing broad intellectual concerns and accessible to all students, irrespective of major

POLS 301-302 History of Political Theory (3 cr. per semester)

Prerequisites: RHET 101 and POLS 101 or POLS 202 is Prerequisite for POLS 301-302.
 POLS 302 Is not Offered in the fall semester.

354 Undergraduate

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.

POLS 303 American Government and Politics (3 cr.)

Prerequisites: RHET 101 and POLS 101 or POLS 202. Offered occasionally.

Formation and implementation of public policy, with attention to the structure, powers, and functions of the presidency, the bureaucracy, the Congress, and the federal courts and the forces that influence their actions.

POLS 305 Politics and Society in Contemporary Africa (3 cr.)

Prerequisites: RHET 101 and 6 of social sciences. Offered occasionally.

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.

POLS 308 Comparative Politics of the Middle East (3 cr.)

Prerequisites: RHET 101 and POLS 101 or POLS 202. Offered in fall and spring.

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.

POLS 310 Introduction to Development (3 cr.)

Prerequisites: RHET 101 and POLS 101 or POLS 202. Offered in fall and spring.

Examines the major problems of development that are raised by classic social science theorists such as Weber, Durkheim, Tocqueville, and Marx. Emphasis on the compatibilities and contradiction between aspects of social change and political integration.

POLS 320 International Relations (3 cr.)

Prerequisites: RHET 101, POLS 101 or POLS 202 and 206. Offered in fall and spring.

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.

POLS 323 Comparative Government and Politics: Developing Systems (3 cr.)

Prerequisites: RHET 101 and POLS 101 or POLS 202. Offered in fall.

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.

POLS 324 Comparative Government and Politics in Contemporary Eastern Europe and Russia (3 cr.)

Prerequisites: RHET 101 and POLS 101 or POLS 202. Offered in spring.

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.

POLS 325 Government and Politics of Egypt (3 cr.)

Prerequisites: RHET 101.

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.

POLS 350 Introduction to Political Economy (3 cr.)

Prerequisites: RHET 101, POLS 101 or POLS 202 and ECON 201.

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.

POLS 351 Theory and History of Political Economy (3 cr.)

Prerequisites: RHET 101.

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.

POLS 354 Political and Social Thought in the Modern Arab World (3 cr.)

Prerequisites: RHET 101. Offered in fall and spring.

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.

POLS 400 Honors Seminar: Political Theory and Current Issues in World Affairs (3 cr.)

Prerequisites: Honors Status, POLS 301 or 302

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 frame works to our great issues of today's world with focus on conflict, crises situations and environmental, demographic and ecological changes.

POLS 402 The Political Economy of Egypt (3 cr.)

Prerequisites: RHET 201, POLS 310 and 350.

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

POLS 404 Introduction to Political Science Methods (3 cr.)

Same as POLS 504. Prerequisites: RHET 201 and 6 credit at 300 level in POLS.

This course seeks to provide students with a critical understanding of political science methods, the ability to read statistical materials, and to use some 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.

356 Undergraduate

POLS 405 International Politics in the Middle East (3 cr.)

Prerequisites: RHET 201, POLS 308 and 320.

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.

POLS 409 Seminar: International Organization (3 cr.)

Prerequisites: RHET 201 and POLS 320. Offered in spring.

This seminar examines the structure and evolution international organizations, both intergovernmental (IO's) and nongovernmental (NGO's), with an emphasis on the United Nations system, its specialized agencies, and recent issues of global governance.

POLS 410 International Security (3 cr.)

Prerequisites: RHET 201 and POLS 320.

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.

POLS 411 Contemporary Foreign Policies (3 cr.)

Prerequisites: RHET 201 and POLS 320.

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 post1945 foreign policies of major and emerging states in the international system.

POLS 413 International Financial Institutions (3 cr.)

Prerequisites: RHET 201, ECON 201 and POLS 320.

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.

POLS 414 Egyptian Foreign Policy (3 cr.)

Prerequisites: RHET 201 and POLS 320.

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.

POLS 415 U.S. Foreign Policy (3 cr.)

Prerequisites: RHET 201 and POLS 320.

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 (3 cr.)

Prerequisites: Six credits at 300 level in POLS.

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.

POLS 420 Issues in Middle East Politics (3 cr.)

Prerequisites: RHET 201 and POLS 308. Offered occasionally.

Selected Topics in Middle East Politics investigated under the guidance of a faculty member. May be offered as a seminar. May be repeated for credit if content changes

POLS 422 Contemporary Egypt (3 cr.)

Prerequisites: RHET 201 & POLS 308. Offered in fall.

This course examines the current Politics of Egypt, including elections, civil society activism and changing power relations between social forces.

POLS 423 The Political Economy of Poverty and Inequality (3 cr.)

Prerequisites: RHET 201, POLS 310 and 350.

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.

POLS 424 Political Economy of the Middle East and North Africa (3 cr.)

Prerequisites: RHET 201, POLS 310 and 350.

An examination of the interconnection between the sociopolitical 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.

POLS 425 Global Political Economy (3 cr.)

Prerequisites: RHET 201, POLS 320 and 350.

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.

POLS 426 Contemporary Political Islam (3 cr.)

Prerequisites: RHET 201.

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

358 Undergraduate

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.

POLS 430 Seminar: Special Topics in Political Science (3 cr.)

Prerequisites: RHET 201 and 6 credit hrs at 300 level in POLS. Offered in fall and spring. Selected topics to be investigated under the guidance of a faculty member. May be repeated for credit if content changes. May be offered as a seminar.

POLS 431 Political Sociology (3 cr.)

Same as SOC 431.

Prerequisites: 9 of social science, and junior or senior standing. Offered in fall.

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.

POLS 432 Seminar: Comparative Politics and/or Policies (3 cr.)

Prerequisites: RHET 201 and one of POLS 308, 322, 323, 324. Offered in fall and spring. Selected topics in the field of comparative politics or policies, with concentration on a single country, problem, or policy. May be repeated for credit if content changes.

POLS 433 Individual Study and Selected Reading (1-3 cr.)

Prerequisites: RHET 201 and consent of instructor and department on the basis of a well-defined proposal. Offered in fall and spring.

Guided reading, research, and discussion based on a subject of mutual interest to a student and faculty member.

POLS 435 The State and Society (3 cr.)

Prerequisites: RHET 201 and 6 credit hrs. at 300 level in Political Science.

The concept of the State is at the center of the study of politics and of our understandings of political and socio-economic problems like ethnic conflict, sectarian strife, law enforcement, economic development and democratization. This course offers a critical study of theories from Marx, Weber, and other social scientists about the State, its institutions, and its interactions with its society and its citizens.

POLS 438 Modern China (3 cr.)

Prerequisites: RHET 201. Offered occasionally.

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.

POLS 439 Government and Politics in the Modern Caucasus and Central Asia (3 cr.)

Prerequisites: RHET 201 and POLS 101 or POLS 202.

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.

POLS 440 Seminar: Special Topics in International Relations (3 cr.)

Prerequisites: RHET 201 and POLS 320.

A special issue or theme in international relations investigated under the guidance of a faculty member. May be repeated for credit if content changes.

POLS 442 Environmental Politics (3 cr.)

Prerequisites: RHET 201.

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, nongovernmental and intergovernmental organizations, corporations, mass movements and scientists.

POLS 450 Business -Government Relations (3 cr.)

Prerequisites: RHET 201 and POLS 350.

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.

POLS 460 Development Studies Seminar (3 cr.)

Same as ANTH/ECON/SOC 460.

Prerequisites: RHET 201 and 12 of social science. Offered occasionally.

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.

POLS 471 International Law (3 cr.)

Prerequisites: RHET 201 and POLS 320. Offered in fall and spring.

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.

POLS 472 International Law in the Middle East (3 cr.)

Prerequisites: RHET 201 and POLS 471. Offered in spring.

An in-depth treatment of selected issues of contemporary international law. Provides students with an understanding of specialized areas of international law including the use of force and dispute resolution, acquisition of territory, state succession, law of the sea, and international human rights law by focusing on specific issues relevant to the Middle East.

POLS 473 Special Topics in Public Law (3 cr.)

Prerequisites: RHET 201 and 6 credit hrs at 300 level in POLS.

Topics drawn from constitutional and administrative law, including related jurisprudence and judicial institutions. May be taken a second time if content changes.

POLS 474 Special Topics in Public International Law (3 cr.)

Prerequisites: RHET 201 and POLS 471.

Specialized areas of international law, such as human rights and humanitarian law. May be

360 Undergraduate

taken if content changes.

POLS 475 Egyptian Law (3 cr.)

Prerequisites: RHET 201.

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.

POLS 477 Law and Development (3 cr.)

Prerequisites: RHET 201, POLS 471 and 310.

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.

POLS 480 Israeli Politics and Society (3 cr.)

Prerequisites: RHET 201 and 6 credit hrs. of Social Science.

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.

POLS 481 The Politics of Palestinian-Israeli Relations (3 cr.)

Prerequisites: RHET 201 and POLS 320.

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.

Premedical Track

Department of Biology
School of Sciences and Engineering

Coordinators: 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 (2 cr.)
MACT 131 - Calculus I (3 cr.)
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.)

Students applying for admission into certain medical schools may be required to take additional courses.

362 Undergraduate

Psychology

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

Professor Emeritus: O. Farrag

Assistant Professors: M. Amer, H. Henry, A. Justus, K. Moore, B. Settlage

Core Curriculum Teaching Fellow: A. Carrillo

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.)

Psychology 363

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:

364 Undergraduate

Required Courses

- SOC/ANTH/PSYC 240 - Introduction to Community Development (3 cr.)
- SOC/ANTH/PSYC 340 - Participatory Action Research in Community Settings (3 cr.)
- 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/SOC 303 - Social Movements (3 cr.)
- ANTH/SOC 370 - Environmental Issues in Egypt (3 cr.)
- ANTH 372 - Applied Anthropology (3 cr.)
- ANTH 380 - Fieldwork Methods (3 cr.)
- ANTH/SOC 450 - Third World Development (3 cr.)
- ANTH/SOC 460 - Development Studies Seminar (3 cr.)
- PSYC/SOC 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.)

Minor in Psychology

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.

Psychology Courses (PSYC)

PSYC 201 Introduction to Psychology (3 cr.)

Offered in fall and spring.

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.

PSYC 207 Introduction to Psychological Statistics (3 cr.)

Offered in fall and spring.

Basic statistical procedures used in psychological research. Includes central tendency, variability, parametric and nonparametric techniques. Emphasis will be on conceptual understanding and practice.

PSYC 208 Research Methods for Psychology (3 cr. + 1 cr. lab)

Prerequisites: PSYC 201 and PSYC 207. Offered in fall and spring. This course is designed for psychology majors.

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.

PSYC 240 Introduction to Community Development (3 cr.)

Same as ANTH/SOC 240.

Offered in fall.

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.

PSYC 299 Selected Topics in Psychology (3 cr.)

Prerequisite: PSYC 201, sophomore or junior standing and permission of the instructor.

Offered occasionally. May be repeated for credit if content changes.

Topics will vary depending on contemporary trends in the field of psychology.

366 Undergraduate

PSYC 301 Social Psychology (3 cr.)

Same as SOC 301.

Prerequisite: PSYC 201. Offered in fall and spring.

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.

PSYC 302 Personal Growth and Adjustment (3 cr.)

Prerequisite: PSYC 201. Offered in fall and spring.

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.

PSYC 304 Lifespan Development (3 cr.)

Prerequisite: PSYC 201. Offered in fall and spring.

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.

PSYC 308 Cognitive Psychology (3 cr.)

Prerequisite: PSYC 208. Offered in fall.

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.

PSYC 310 Educational Psychology (3 cr.)

Prerequisite: PSYC 201. Offered occasionally.

Educational Psychology introduces psychological principles, theories, and methodologies to issues of teaching and learning in education. The role of psychology of education in studying an influencing teaching and learning will be explored with an emphasis on direct application to planning, implementing, and evaluating instruction in the classroom.

PSYC 313 Learning and Behavioral Psychology (3 cr.)

Offered occasionally.

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.

PSYC 315 Psychological Testing and Assessment (3 cr.)

Prerequisites: PSYC 201 and 207. Offered in spring.

Nature of individual differences, methods and rationale of their assessment, with emphasis upon widely used psychological tests of intellectual function and personality.

PSYC 327 Theories of Personality (3 cr.)

Prerequisite: PSYC 201. Offered in fall and spring.

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, Dollard, Miller, Bandura, Mischel), Sociobiological (Wilson), and Existential-Humanistic (Kelly, Rogers, Maslow, May).

PSYC 330 Community Psychology (3 cr.)

Prerequisite: PSYC 201 or permission of instructor. Offered in fall.

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.

PSYC 340 Participatory Action Research in Community Settings (3 cr.)

Same as ANTH/SOC 340.

Prerequisites: ANTH/PSYC/SOC 240 or consent of the instructor. Offered in spring.

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.

PSYC 342 Abnormal Psychology (3 cr.)

Prerequisite: PSYC 201. Offered in fall and spring.

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.

PSYC 380 Biopsychology (3 cr.)

Prerequisites: BIOL 103 or BIOL 104 and PSYC 201 and 208. Offered in fall.

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.

PSYC 400 Selected Topics in Psychology (3 cr.)

Prerequisite: junior or senior standing, and permission of the instructor. May be repeated for credit if content changes. Offered occasionally.

Topics to be chosen according to specific interest, for example: learning theory, conflict and stress, psycholinguistics, ethnopsychology.

PSYC 401 Supervised Research in Psychology (1-3 cr.)

Prerequisites: PSYC 208, minimum B average, and permission of instructor. May be repeated for credit if content changes. May not be taken for more than 6 credits per faculty advisor

368 Undergraduate

during the student's academic path. Offered occasionally.

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.

PSYC 402 Independent Study (1-3 cr.)

Prerequisites: a minimum B average, consent of the instructor, and approval by the Unit Head and the Department Chair. May be repeated for credit if content changes Offered in fall and spring.

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.

PSYC 403 History and Systems of Psychology (3 cr.)

Prerequisites: junior or senior standing and 15 hours of psychology, or permission of instructor. Offered in spring.

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.

PSYC 407 Psychological Anthropology (3 cr.)

Same as ANTH 407.

Prerequisites: 6 hours of anthropology, 6 hours of psychology, and junior or senior standing. Offered occasionally.

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.

PSYC 410 Cultural Psychology (3 cr.)

Prerequisites: PSYC 201 and junior or senior standing. Offered occasionally.

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.

PSYC 412/512 Psychosocial Issues in Forced Migration (3 cr.)

Same as MRS 512.

Prerequisites: Permission of the instructor. Offered occasionally.

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.

PSYC 414 Child Psychology (3 cr.)

Prerequisites: PSYC 304 or permission of instructor. Offered occasionally.

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.

PSYC 420 Industrial/Organizational Psychology (3 cr.)

Prerequisites: PSYC 301 and 327. Offered occasionally.

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.

PSYC 430 Advanced Community Psychology: Applied Research and Service (3 cr.)

Pre-requisites: PSYC 201, PSYC 330 and permission of instructor.

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.

PSYC 440-441 Practicum in Community Development (6 cr.)

Same as ANTH/SOC 440-441.

Prerequisites: ANTH/PSYC/SOC 240 and 340. Offered in fall (440) and spring (441).

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.

PSYC 442 Clinical Psychology (3 cr.)

Prerequisites: PSYC 327, 342 and 380 or permission of instructor. Offered occasionally.

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.

370 Undergraduate

Public Policy and Administration

Department of Public Policy and Administration
School of Global Affairs and Public Policy

Professors: L. El-Baradei (Associate Dean of School of Global Affairs and Public Policy), T. Dolan, A. Hamzawy

Associate Professor: J. Bremer (Chair)

Visiting Associate Professor: Kh. Amin

Assistant Professors: H. Ali, G. Barsoum, W. Bowman

Professors of the Practice: I. Awad, M. Shahin

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.

Public Policy and Administration Courses (PPAD)

PPAD 299 Selected Topics for the Core Curriculum (3 cr.)

Offered occasionally.

Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

PPAD 308 Management in Government (3 cr.)

Offered in spring.

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.

PPAD 490 Practicum (3 cr.)

Same as PPAD 590. Offered in fall and spring.

Prerequisite: Junior or senior status and permission of the department.

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.

Rhetoric and Composition

Department of Rhetoric and Composition
School of Humanities and Social Sciences

Assistant Professors: E Coletu, B. Gironda

Senior Instructors: R. Byford, M. Carter, A. El Shimi, R. Hoath, L. Holdijk (Associate Chair), S. Makhoulouf, G. Marquis, G. McCullough, K. Saville, M. Shabka (Interim Chair), T. Warren.

Instructors: R. Awad, P. Barsoum, P. Borkowski, F. Boutros, V. Clark, B. Comer, J. Drake, G. El Shimi, C. Faulk, D. Fyfe, M. Gibson, I. Hamam, M. Hassan, T. Headrick, M. Henry, N. Houssey, D. Jones, S. Khabbar, A. Leone, Y. El Masry, S. McEwen, M. Mikhael, H. El Minyaw, Y. Motawy, Sh. Nour el Din, R. Panzarella, H. Shahin, J. Verlenden, W. Wali, D. Waszkowski, O. Young, L. Youssef, S. Zaki

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.

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.)

Minor in Rhetoric and Writing

The Rhetoric and Writing Minor seeks to introduce and advance the knowledge, understanding and value of disciplines of rhetoric and writing 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. It further provides opportunities for students to study how rhetoric drives fields of study across disciplines and to practice this inquiry themselves. The Minor also seeks to articulate, through its courses, its faculty and its activities, the long-term relevance of rhetoric and writing

372 Undergraduate

as disciplines at the university.

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:

Requirements:

RHET 310 - Effective Rhetoric: Discourse and Power (3 cr.)

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. 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.)

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. 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.

374 Undergraduate

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.

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.)

Rhetoric and Writing Courses (RHET)

RHET 101 Approaches to Critical Writing (3 cr.)

Offered in fall, spring and summer.

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.

RHET 102 Effective Argument (3 cr.)

Prerequisites: RHET 101. Offered in fall, spring and summer.

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.

RHET 199 Selected Topics (3 cr.)

Offered occasionally.

Course addressing broad intellectual concerns and accessible to all first year students

irrespective of major.

RHET 201 Research Writing (3 cr.)

Prerequisite: RHET 102 or its equivalent. Offered in fall, spring and summer.

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.

RHET 225 Public Speaking (3 cr.)

Prerequisite: RHET 201 or its equivalent.

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.

RHET 299 Selected Topics (3 cr.)

Prerequisite: RHET 101. Offered occasionally.

Course addressing broad intellectual concerns and accessible to all students irrespective of major.

RHET 310 Effective Rhetoric: Discourse and Power (3 cr.)

Prerequisite: RHET 201 or its equivalent.

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.

RHET 320 Business Communication (3 cr.)

Prerequisites: RHET 201 or equivalent; junior standing or instructor approval. Offered in fall, spring and summer.

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.

RHET 321 Technical Communication (3 cr.)

Prerequisites: RHET 201 or equivalent; junior standing or instructor approval; science and engineering majors or instructor approval. Offered in fall, spring and occasionally in summer.

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.

376 Undergraduate

RHET 322 Writing in the Social Sciences (3 cr.)

Prerequisites: Consent of instructor, consent of Chair/Associate Chair, junior or senior standing. 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.

RHET 323 Changing Words, Changing Worlds (3 cr.)

Prerequisites: RHET 201 or equivalent. 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.

RHET 325 The Rhetoric of Argument in the Humanities and Social Sciences (3 cr.)

Prerequisites: RHET 201 or equivalent. 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.

RHET 330 Writing and Cognition (3 cr.)

Prerequisites: RHET 201 or equivalent. 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.

RHET 332 Presentation and Persuasion in Business (3 cr.)

Prerequisites: RHET 201 or equivalent. 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.

RHET 334 Digital Rhetoric (3 cr.)

Prerequisites: RHET 201 or equivalent. 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.

RHET 340 Life Narratives: Reading as Writers (3 cr.)

Prerequisites: RHET 201 or equivalent.

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.

RHET 341 Travel Writing (3 cr.)

Prerequisites: RHET 201 or equivalent.

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.

RHET 342 Writing Children's Literature (3 cr.)

Prerequisites: RHET 201 or equivalent.

Students in this course will assess and write works of fiction and nonfiction addressing children through different media (picture books, plays, short stories, novellas). Students will explore who writes and illustrates for children and why, and the language used to address children during different stages. They will engage in projects to entertain children, while providing indirect instruction, and produce written works for organizations that serve the needs of children.

RHET 345 The Writer's Workshop (3 cr.)

Prerequisites: RHET 201.

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.

RHET 380 Poetry Writing (3 cr.)

Prerequisites: ECLT 370.

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.

RHET 399 Selected Topics (3 cr.)

Prerequisites: RHET 201 or equivalent.

Course addresses broad intellectual concerns, and is accessible to all students irrespective of major.

378 Undergraduate

RHET 400 Writing and Editing for Publication (3 cr.)

Prerequisites: RHET 201 or equivalent.

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.

RHET 410 Grant Writing for Community Building (3 cr.)

Prerequisites: RHET 201 or equivalent.

Grant writing skills may be used for fundraising, applying for scholarships and fellowships, starting new businesses, securing research and conference grants, and acquiring funding for the cultural, non-profit and non-governmental sectors. This course develops the skills of effective fund-seeking and proposal writing through a step by step service-learning activity, where students learn how to access donor funds to meet the needs of local non-profit organizations.

RHET 450 Imagining the Book (3 cr.)

Prerequisites: At least one 300-level RHET course and/or instructor permission solicited through a project proposal.

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.

RHET 460 Independent Study (1-3 cr.)

Pre-requisites: Consent of Instructor, Consent of Chair/Associate Chair, Junior or Senior Standing.

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.

RHET 480 Research and Writing Internship (3 cr.)

Prerequisites: RHET 201 or equivalent; B in 300 or 400-level RHET course.

This capstone course immerses students into an applied, real-world writing experience that helps them transition from academic writing to work-place 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.

RHET 490 Advanced Scientific and Technical Writing (3 cr.)

Prerequisites: RHET 201 or equivalent. Engineering and Science Majors only; junior or

Rhetoric & Composition 379

senior standing.

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.

380 Undergraduate

Sociology

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

Professor: M. Abaza

Associate Professors: N. Nosseir, H. Rizzo

Assistant Professors: J. Curiel, A. Czajka, K. Fahmi, A. Holmes, 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 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.)*
- SOC 310 - Contemporary Sociological Theory (3 cr.)*
- SOC 381 - Doing Survey Research in the Social Sciences (3 cr.)
- SOC 450 - Third World Development (3 cr.)*
- SOC 495 - Senior Seminar (3 cr.)*

* *Cross listed with Anthropology*

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)

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

382 Undergraduate

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/ANTH/PSYC 240 - Introduction to Community Development (3 cr.)
- SOCANTH/PSYC 340 - Participatory Action Research in Community Settings (3 cr.)
- 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/SOC 303 - Social Movements (3 cr.)
- ANTH/SOC 370 - Environmental Issues in Egypt (3 cr.)
- ANTH 372 - Applied Anthropology (3 cr.)
- ANTH 380 - Fieldwork Methods (3 cr.)
- ANTH/SOC 450 - Third World Development (3 cr.)
- ANTH/SOC 460 - Development Studies Seminar (3 cr.)
- PSYC/SOC 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.)

Minor in Sociology

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.)

Sociology Courses (SOC)

SOC 199 Selected Topic for Core Curriculum (3 cr.)

Course addressing broad intellectual concerns and accessible to all first-year students as part of the Primary Level Core.

SOC 201 Introduction to Sociology (3 cr.)

Offered in fall and spring.

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.

SOC 203 Social Problems of the Middle East (3 cr.)

Offered in fall.

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.

SOC 204 Social Statistics (3 cr.)

Prerequisites: Students must have taken SOC 201, no exceptions. Offered in fall.

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..

SOC 206 Arab Family Structure and Dynamics (3 cr.)

Offered in spring.

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.

SOC 210 Arab Society (3 cr.)

Same as ANTH 210. Offered in fall and spring.

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.

SOC 240 Introduction to Community Development (3 cr.)

Same as ANTH/PSYC 240. Offered in fall.

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.

SOC 299 Selected Topic for Core Curriculum (3 cr.)

Prerequisites: RHET 101. Offered occasionally.

Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

384 Undergraduate

SOC 301 Social Psychology (3 cr.)

Same as PSYC 301. Prerequisites: PSYC 201. Offered occasionally.

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 antisocial behavior, interpersonal attraction and intimacy, and the social effects and functions of groups.

SOC 303 Social Movements (3 cr.)

Same as ANTH 303. Offered in spring.

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.

SOC 304 Development Agencies (3 cr.)

Offered occasionally.

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.

SOC 306 Sociology of Literature (3 cr.)

Offered occasionally.

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.

SOC 307 Social Class and Inequality (3 cr.)

Offered in fall.

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.

SOC 309 History of Social Theory (3 cr.)

Same as ANTH 309.

Prerequisites: 9 of social sciences, and junior or senior standing, or consent of instructor.

Offered in fall.

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.

SOC 310 Contemporary Sociological Theory (3 cr.)

Same as ANTH 310. Prerequisites: SOC or ANTH 309 or consent of instructor. Offered in spring.

The main trends, basic problems, and unresolved issues of postwar sociological thought. Essential aspects of the logic of scientific inquiry; contemporary theories as model building in sociology including new functionalism, critical theory, structuralism and post-structuralism.

SOC 321 The Urban Experience (3 cr.)

Same as ANTH 321. Prerequisites: 6 of Social Sciences and sophomore standing.

Offered occasionally.

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?

SOC 322 Rural Sociology (3 cr.)

Offered occasionally.

The Middle Eastern rural community and its relation to agricultural development, tenure systems, ecological processes, urbanization, migration, and changing technology.

SOC 323 Fundamentals of Population Studies (3 cr.)

Offered in alternate years.

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.

SOC 332 Social Constructions of Difference: Race, Ethnicity, and Class (3 cr.)

Same as ANTH 332. Prerequisites: 6 of Social Sciences and sophomore standing.

Offered occasionally.

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.

SOC 340 Participatory Action Research in Community Settings (3 cr.)

Same as ANTH/PSYC 340. Prerequisites: ANTH/PSYC/SOC 240 or consent of the instructor.

Offered in spring.

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.

SOC 370 Environmental Issues in Egypt (3 cr.)

Same as ANTH 370. Offered in alternate years.

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.

386 Undergraduate

SOC 381 Doing Survey Research in the Social Sciences (3 cr.)

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.

Offered in spring

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. Students will be encouraged to conduct mini-scale surveys on the campus and beyond.

SOC 400 Selected Topics in Sociology (3 cr.)

Prerequisites: 9 of social sciences, and junior or senior standing. Offered occasionally.

Topics to be chosen according to specific interests, such as sociology of medicine, sex roles, symbolic interaction, applied sociology. May be repeated for credit if content changes.

SOC 402 Independent Study (3 cr.)

Prerequisites: a minimum B average, consent of the instructor, and approval by the Unit Head and the Department Chair. Offered in fall and spring.

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. May be repeated for credit if content changes

SOC 405 Sociology of Work (3 cr.)

Prerequisites: Junior or senior standing, 6 hrs. of social science or the permission of the instructor. Offered occasionally.

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.

SOC 406 Educational Sociology (3 cr.)

Prerequisites: 9 of social sciences, and junior or senior standing. Offered occasionally.

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.

SOC 408 Criminology (3 cr.)

Prerequisites: 9 of social sciences, and junior or senior standing. Offered occasionally.

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.

SOC 422 Religion in a Global World (3 cr.)

Same as ANTH 422 and EGPT 546.

Prerequisites: 9 of social sciences and junior or senior standing. Offered in fall.

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.

SOC 431 Political Sociology (3 cr.)

Same as POLS 431. Prerequisites: 9 of social sciences, and junior or senior standing. Offered in fall.

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.

SOC 435 Gender and Power in Development (3 cr.)

Prerequisites: nine of social sciences, at least junior standing or the consent of the instructor. Offered annually.

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.

SOC 440-441 Practicum in Community Development (6 cr.)

Same as ANTH/PSYC 440-441. Prerequisites: ANTH/PSYC/SOC 240 and 340. Offered in fall (440) and spring (441).

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.

SOC 445 Selected Topics in Coptic Studies (3 cr.)

Same as ARIC, EGPT, HIST, ANTH 445. Offered in fall.

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.

SOC 450 Third World Development (3 cr.)

Same as ANTH 450. Prerequisites: 9 of social sciences and junior or senior standing. Offered in fall and spring.

Contemporary theories of development as they apply to and illuminate the problems of development in underdeveloped countries. The approach will be interdisciplinary.

SOC 455 Seminar in African Studies (3 cr.)

Same as ANTH 455. Prerequisites: Junior or Senior standing and consent of the instructor. Offered occasionally.

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.

388 Undergraduate

SOC 460 Development Studies Seminar (3 cr.)

Same as ANTH/ECON/POLS 460. Prerequisites: 12 of social science. Offered occasionally. 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.

SOC 495 Senior Seminar (3 cr.)

Same as ANTH 495. Prerequisites: SOC 381 or ANTH 380 and senior standing or consent of the instructor. Offered in spring.

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. The student will be required to write a methodologically sound senior paper, preferably based on field research.

Theatre

Department of Performing and Visual Arts School of Humanities and Social Sciences

Professors: S. Campbell (Chair), M. El Lozy

Associate Professors: J. Arnold (Director of Theatre), F. Bradley, (Artistic Director), M. Mineart

The Department of Performing and Visual 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 PVA 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.)

390 Undergraduate

Additional Requirements

Three credits from the following:

THTR 240 - Production Practicum (1 cr. per production)

May be repeated twice for credit.

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

May be repeated twice for credit.

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.)

ARTV 211 - World Art Survey I (3 cr.)

ARTV 212 - World Art Survey II (3 cr.)

ARTV 310 - Modern Art (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.

Minor in Theatre

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)
May be repeated twice for credit.
- * THTR 242 - Rehearsal and Performance Practicum (1 cr. per production)
May be repeated twice for credit.

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.

Theatre Courses (THTR)

THTR 125 Acting for Non-Majors (3 cr.)

Offered in fall and spring.

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. May not be used for departmental credit by theatre majors or minors.

392 Undergraduate

THTR 130 The World of the Theatre (3 cr.)

An initiation into the world of the theatre with the aim of developing the critical skills of an informed and perceptive audience member through the reading of plays, critical articles, and the attendance of stage performances and film versions of plays.

THTR 199 Selected Topic for Core Curriculum (3 cr.)

Offered occasionally.

Course addressing broad intellectual concerns and accessible to all first-year students as part of the Primary Level Core.

THTR 203 The Art of the Theatre (3 cr.)

Offered in fall and spring.

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.

THTR 204 Introduction to Technical Theatre (3 cr.)

Offered in fall and spring.

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. Students will be expected to work on one of the technical crews for a major theatre department production concurrently with the course.

THTR 225 Acting I (3 cr.)

Prerequisites: THTR 203. Offered in fall and spring, and occasionally in the summer.

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.

THTR 226 Acting in Arabic I (3 cr.)

Prerequisites: THTR 203. Offered in fall or spring.

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.

THTR 227 Acting II (3 cr.)

Prerequisites: THTR 225. Offered once a year.

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.

THTR 230 Play Analysis (3 cr.)

Offered in fall or spring.

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.

THTR 240 Production Practicum (1 cr. per production)

A course for any student who wishes to gain academic credit for significant contribution to departmental theatre productions in one of the following area: 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.

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

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.

THTR 299 Selected Topic for Core Curriculum (3 cr.)

Prerequisites: RHET 101. Offered occasionally.

Course addressing broad intellectual concerns and accessible to all students, irrespective of major.

THTR 324 Design for the Theatre (3 cr.)

Prerequisites: THTR 203 and 204. Offered once a year.

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.

THTR 325 Acting Styles (3 cr.)

Prerequisites: THTR 227. Offered once every other year.

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.

THTR 326 Acting in Arabic II (3 cr.)

Prerequisites: THTR 226. Offered in fall or spring.

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.

THTR 327 Special Topics in Acting (3 cr.)

Prerequisites: THTR 227. Offered occasionally.

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. May be repeated for credit if content changes

THTR 328 Directing I (3 cr.)

Prerequisites: THTR 225 and 230. Offered in fall.

The fundamental directorial controls, as well as theoretical and practical training, leading to the production of single scenes. May be repeated once for credit as content changes.

394 Undergraduate

THTR 340 Advanced Theatre Practicum (3 cr.)

Prerequisites: THTR 204 , THTR 240 and consent of instructor. Offered fall and spring. 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. Repeatable for credit. No maximum.

THTR 344 Design Practicum (3 cr.)

Prerequisites: Selection by application and interview. Offered occasionally. 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. Repeatable for credit. Selected students will form a design team that will be responsible for designing scenery, props, costumes, lighting, and sound for a major production.

THTR 350 Survey of Dramatic Literature (3 cr.)

Offered in alternate falls. A study of major periods and distinctive styles and genres of drama from the Greeks to pre-Ibsen nineteenth century drama.

THTR 351 History of The Theatre (3 cr.)

Offered in alternate springs. 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 slideshow presentation.

THTR 360 Playwriting I (3 cr.)

Offered in fall. 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.

THTR 361 Playwriting II (3 cr.)

Prerequisites: THTR 360. Offered in spring. 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.

THTR 370 Selected Topics in Theatre (3 cr.)

Prerequisites: consent of the instructor. Offered occasionally. In-depth examination of specific topics in theatre determined by the special interests and expertise of the faculty. May be repeated for credit if content changes

THTR 402 Independent Study (1-3 cr.)

Prerequisites: Minimum B average required. Offered in fall and spring. In exceptional circumstances, some senior majors may arrange, with departmental approval, to study beyond the regular course offerings.

THTR 428 Directing II (3 cr.)

Prerequisites: THTR 328 and completion of all 200 level requirements. Offered occasionally. Advanced theoretical and practical, production-oriented training in play direction culminating

in the presentation of a directorial project.

THTR 460 Modern and Contemporary Drama (3 cr.)

Offered in alternate falls.

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.

THTR 461 Dramatic Theory and Criticism (3 cr.)

Offered in alternate springs.

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.

THTR 470 Senior Seminar (3 cr.)

Prerequisites: consent of the instructor. Offered occasionally.

In-depth examination of advanced topics in theatre determined by the special interests of the faculty. Designed for senior majors.

THTR 490 Senior Thesis (3 cr.)

Prerequisites: THTR 324, 328, 350, 351, 460, 461 (or currently enrolled). Some projects will have additional prerequisites. Course should be taken in final semester at AUC.

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.

THTR 495 Senior Honors Project (3 cr.)

Prerequisites: consent of the instructor. Offered in fall and spring.

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. Projects will be chosen by students in consultation with a faculty advisor.





Graduate Studies

Admissions

The university seeks to attract to its graduate programs excellent students who demonstrate the ability to do creative and original work. A graduate applicant must have an acceptable bachelor's degree with a record at the required level as mentioned below, be proficient in the English language, be in good health, and perform well on any required entrance examination. As space is limited, actual acceptance depends upon the overall merit of the applicant's academic record and the number of students that can be accommodated.

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 (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.

400 Graduate

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

Graduate Admissions 401

prerequisite courses or their admission at AUC will be discontinued. In some instances, students may not be required to fulfill any prerequisites while on provisional status; however, in this case they are considered on probation and must achieve a minimum 'B' average in the first semester (or two 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 Research 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

402 Graduate

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 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.

English Level at Time of Withdrawal	Lapse of Time	TOEFL/IELTS Required
Completed required	Less than 24 months	No
Academic English modules successfully or satisfied English requirement	More than 24 months	Yes
Enrolled in Intensive English or Academic English	Less than 6 months	No
	Between 6-12 months	Optional
Enrolled in Intensive English or Academic English	More than 12 months	Yes

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.

404 Graduate

General Academic Requirements & Regulations

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

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

Student Responsibility 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

Academic Requirements & Regulations 405

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.

After completion of coursework, the student must register for 599 Research Guidance and Thesis each semester, 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 (or three semesters in the case of economics majors) 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

406 Graduate

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

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

If careful attention is paid 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 first obtain a change of course form from the department of major or from the Registrar web page <http://student.aucegypt.edu> and have it approved by his/her adviser and the chair of the department of major. The student must submit the form personally to the Office of the 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 classes up to the end of the fourth week of classes in an academic semester or the summer session, with no record being maintained.
- Between the end of the fourth and the twelfth week of classes in an academic semester, students may drop courses. A grade of "WP" will be assigned to students whose performance is evaluated by the professor as "B" or above, or a grade of "WF" will be

Academic Requirements & Regulations 407

assigned to those whose performance is evaluated as less than “B”.

- After the twelfth week in academic semesters and the fourth week in the summer session, students are not permitted to drop classes.
- 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 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:

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

Grades not included in the Grade Point Average:

I	Incomplete
S	Satisfactory

408 Graduate

U	Unsatisfactory
W	Withdrew
WP	Withdrew-Passing
WF	Withdrew-Failing
AU	Audit
IP	In progress
P	Pass

The grade point average is calculated by multiplying the grade point value by the number of credit hours the course represents. The result is listed as quality points. The total quality points are then divided by the total credit hours. The results in courses for no credit are not included in the computation of a grade point average. Grades of “I,” “S,” “P,” “U,” and “WF,” “WP” 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. 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:

Academic Requirements & Regulations 409

- 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:

410 Graduate

- 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

Academic Requirements & Regulations 411

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 graduate or who withdraw from the university in good standing are entitled to one free student transcript of their academic record. 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.

Student Finances

Tuition and Fees

Egyptian and non-Egyptian students who are permanent residents in Egypt will be referred to as Category A while non-Egyptian and non-resident students will be referred to as Category B.

Tuition and fees are announced for each academic year in a bulletin issued by the Office of Student Financial Affairs. For the year 2011/2012 the tuition fees per semester for 12 credits was set as follows:

	All	M.B.A.	LL.M.
Category A students	L.E. 37,020	L.E. 43,320	L.E. 43,320
Category B students	\$ 11,184		

Tuition and fees are collected by semester. No student with bills outstanding, including charges for breakage or library fines, will be admitted to any examination, be given any certificate or report of academic standing, or be permitted to register for a subsequent semester.

Deferred Payment

When a student is unable to pay the entire amount due at the time of registration, payment may be made in two installments as follows:

- a. At least 50 % percent to be paid at the time of registration.
- b. The balance must be paid by November 20th for deferment of fees granted for the fall semester and April 5th for deferment of fees granted for the spring semester.
- c. The student will pay an administrative fee that will be decided every year.
- d. New students who apply for financial aid will be exempted from the administrative fees for deferment of payment.

Refund Policy

A full refund for graduate students is made only for course(s) dropped before the end of the late registration period. Students who drop a course after the deadline for late registration are not entitled to any refund for the course(s) dropped. However, students who withdraw from the university after the deadline will receive a partial refund, the amount depending on the number of weeks which have elapsed since the beginning of classes. Refunds are made according to the following schedule:

- First week of classes: full tuition refund

Graduate Student Finances 413

- Second week: eighty percent tuition refund
- Third week: sixty percent tuition refund
- Fourth week: forty percent tuition refund
- Fifth week: twenty percent tuition refund
- After the end of the fifth week no refunds will be made

Summer-session students who withdraw one day after registration can be refunded the amount paid. Summer session students who withdraw more than one day after registration will receive a partial refund according to the following schedule:

- By the end of the first week: seventy five percent of tuition and fees
- By the end of the second week: fifty percent of tuition and fees
- After the end of the second week no refunds will be made

The refund schedule refers to tuition for credit courses, audited courses, and instruction in the Arabic Language Institute and English Language Institute. The student services and activities fee, the application fee, laboratory and studio course fees, and special charges are not refundable.

Financial Assistance

Although the American University in Cairo is a private university that depends upon tuition and contributions for its livelihood, it attempts to provide financial assistance to any student not on probation who demonstrates financial need. AUC offers a range of fellowships, financial aid, and student work programs to assist students in meeting the expenses of their education.

Financial Aid and Work Study for Graduate Students

The American University in Cairo (AUC) believes that the primary responsibility for financing a student's educational costs rests with the family. If however "need" for financial assistance is determined, AUC will attempt to assist the student. Financial need is determined by the difference between the family's contribution and the actual cost of tuition (cost of tuition - family contribution = need).

Financial Aid

The University Financial Aid Committee will make awards and establish student assignments for the fall and spring semesters. Approximately twenty five percent of Egyptian graduate students have received financial assistance in recent years.

Eligibility

In order to be eligible for financial aid or work study, students must meet the following criteria:

- a. Financial need established through the financial aid form.
- b. Accumulated grade point average of not less than 3.0.

Awards and Renewal

Financial aid grants or work study will be determined according to student or family financial resources, as appropriate, within university budget limitations. Financial need is defined as the

414 Graduate

difference between the costs of attending the American University in Cairo and the amount a student or family can contribute toward those costs. Aid may include both grants and part-time student work.

AUC will provide financial or work aid on application to continuing recipients who remain eligible and continue to demonstrate financial need. The amount and kind of aid a student receives will be reviewed each year so that any changes in fees and in family resources can be taken into account. Students are responsible for reporting the changes in their or their family's financial resources. A students' award may increase, decrease, or remain the same from year to year, depending upon university costs, the family's current financial ability, and university approval. Normally, students on probation are not eligible. Graduate students must submit a renewal form every semester if they wish to renew their financial aid awards.

Students who wish to apply for financial aid or work study must submit the university's financial aid form with required supporting documents to the Office of Student Financial Affairs by the deadlines shown below:

Category	Period of Support	Deadline
New Students	Academic Year	Sept. 15
Returning Students	Academic Year	May 16
New Students	Second Semester	Dec. 30
Returning Students	Second Semester	Dec. 15

Work Study Program

Part of the financial aid program is made available through work assignments for students on campus which assist them financially, provide them with educational experience, and help develop their skills. Details on the work study program including areas of work, compensation and applications are announced through the Career Advising and Placement Office at AUC. Administrative procedures and compensations are made by the Office of Student Financial Affairs.

Details on the student work study program is on the website:
<http://www.aucegypt.edu/students/finaff/WorkStudy/Pages/default.aspx>

Graduate Fellowships and Assistantships

The University offers graduate students a wide range of fellowships and assistantships in order to help students finance their education. Fellowships applications are submitted online <http://forms.aucegypt.edu/StudentServicesForms/modfellow/instructions.html> and the required supporting documents can be scanned and sent as attachment to gradadm@aucegypt.edu and grad@aucegypt.edu or submitted as hard copies with the graduate application to the Student Services Center at AUC .

For more details about such awards, please refer to
<http://www.aucegypt.edu/admissions/grad/finsup/Pages/default.aspx>

For more information contact the Office of the Dean of Graduate Studies or your

department of major. Following is a brief description of each of the graduate awards that are currently offered:

Al Alfi Foundation Biotechnology Fellowships

The Al Alfi Biotechnology Fellowship is jointly offered by Al Alfi Foundation and the American University in Cairo (AUC) represented by its School of Science and Engineering (SSE). The program is designed to prepare future scientists and industrial leaders who are Egyptian nationals and who have strong knowledge and skills in science and engineering. The program is intended to enable qualified Egyptian science and engineering graduates to attend AUC's reputable Biotechnology program on a full tuition-free scholarship basis.

The long term objective of the program is to develop the manpower for research and development in the region by providing the skill sets for future scientists who are easily recruited to Biotechnology and pharmaceutical industrial positions in Egypt and the region.

Candidates must be Egyptian nationals and have a bachelor's degree in engineering or science from an accredited university with a minimum overall grade point average of 3.2 on a 4.0 scale, or "Very Good" (Gayyid Giddan), or equivalent and they should also be proficient in the English language. In support of their training fellows must participate on a fulltime basis in a research project at AUC for the duration of their study and in a number of extra-curricular activities designed to enrich their experience and nurture their potential for leadership in the industry.

Fellows receive a waiver of tuition and fees, and a book allowance. Applications for the fellowship are due on line by April 1 for fellowships beginning the following September.

Al Alfi Foundation MBA Fellowships

The Al Alfi MBA Fellowship is jointly offered by Al Alfi Foundation and the American University in Cairo (AUC) represented by the School of Business. The program is designed to identify and prepare future industrial leaders who are Egyptian nationals and who have strong knowledge and skills in science and engineering coupled with superior business management and decision making skills. The fellowship is offered for two and a half academic years and the intervening summer session and is intended to enable Egyptian students to attend the MBA program at AUC on a full tuition-free scholarship basis.

Candidates must be Egyptian nationals and have a bachelor's degree in engineering or science from an accredited university with a minimum overall grade point average of 3.25 on a 4.0 scale, or "Very Good" (Gayyid Giddan), or equivalent. They should also be proficient in the English language, have relevant professional experience in manufacturing and or industrial sectors, and proven financial need. Fellows receive waiver of tuition and fees, and books. Applications for the fellowship are due on line by May for fellowships beginning the following September.

The Arab Women Professionals Fellowships Program

The Arab Women Professionals Fellowship Program (AWPP) aims at providing first-rate educational opportunities to motivated women who serve open society goals in order to

416 Graduate

increase women's participation in policy making, governance and public life. The fellowship program is co-funded by The American University in Cairo and the Open Society Foundations Scholarship Programs.

The program, which is administered by The American University in Cairo, will concentrate on empowering and credentialing women who are ready to fill critical leadership positions in Egypt and the Middle East. Applicants should demonstrate the desire and skills to serve others and should be committed to finishing the graduate program in two years and the intervening summer.

Candidates must be female citizens of Egypt, Jordan, Lebanon, Syria and Iraq nationals who are normally resident of these countries. US citizens are not eligible. Qualified applicants to the following fields of study: community psychology, economics, economics in international development, English and comparative literature, gender and women's studies in the Middle East and North Africa, international and comparative education, international human rights law, journalism and mass communication, Middle East studies, migration and refugee studies, political science, sociology-anthropology, Master of Laws (LLM), Master of Public Administration and Master of Public Policy would be considered.

Candidates must have a bachelor's from an accredited university with a minimum overall grade point average of 3.0 on a 4.0 scale, or "Very Good" (Gayyid Giddan), or equivalent. They should also be proficient in the English language, have relevant have a minimum of two years of relevant professional experience in community or public service and demonstrated leadership skills.

Fellows receive waiver of tuition and fees, a monthly stipend, book and equipment allowance and professional funds. For more details about the award and fellows responsibilities: <http://www.aucegypt.edu/admissions/grad/finsup/Pages/TheArabWomen.aspx>

Applications for the fellowship are due by April 1 for fellowships beginning the following September.

The Ahmed and Ann M.El Mokadem Scholarship

The Ahmed and Ann M.El Mokadem Scholarships are designed to support Egyptian students with excellent academic records interested in pursuing graduate studies in the fields of Economics and Economics in International Development at the American University in Cairo. Applicants should be committed to complete the degree requirements in no more than two years and may cover the intervening summer.

To be considered for the fellowship, the applicant must be fully admissible to one of the above graduate programs and have a B.A. degree with a minimum overall grade point average of 3.4 on a 4.0 scale, or its equivalent. Students already enrolled in one of these graduate programs and who have a minimum grade point average of 3.2 in their graduate courses are also eligible to apply. To retain the fellowship, the recipient must take at least 9 graduate credits and maintain a grade point average of 3.2 or better.

The Ahmed and Ann M. El Mokadem Fellowship is reviewed every year and may be renewed for a maximum period of two years including the intervening summer session. Awarded fellows receive full or partial waiver of tuition and fees, monthly stipend paid in local currency and book

Graduate Student Finances 417

allowance. As part of their fellowship and in support of their professional training, fellows are assigned 12 hours per week. Application for the fellowship is made online by April 1 for the fall semester and November 1 for the spring semester.

Arabic Language Fellowships

The Arabic Language Fellowships are offered to full-time new and continuing international graduate students who need to take Arabic language classes in order to satisfy their degree requirements at AUC and would like to enroll in the Arabic Language Institute's (ALI) full-time fall, spring or summer Arabic program or enroll in the six credits ALING courses along with their graduate courses.

International graduate students, who are fully admitted to the AUC graduate program, may apply to the Arabic language fellowships. The fellowships are awarded for one summer, or one semester. Arabic language fellows receive a waiver of 50% of the tuition for the ALI intensive Arabic program. As part of their fellowship and in support of their professional training, fellows are assigned five hours per week of related academic or administrative work. Fellowship applications are available online and are due by April 1 for the fall semester, September 15 for the spring semester and February 1 for the ALI intensive Arabic summer program. Selection of fellowship recipients will be made about one month after each of the deadlines.

The Dr. Nabil Elaraby Fellowship

The program is designed to provide a tuition reduction for Egyptian nationals applying for or enrolled in the LLM program at the American University in Cairo. The applicant must have an excellent academic record and be able to demonstrate financial need. This fellowship honors His Excellency Dr. Nabil Elaraby. Dr. Elaraby's long career as a diplomat, a judge and world renowned international lawyer is an inspiration to young Egyptian law students with the intellectual aspiration to continue their graduate legal education at AUC. Dr. Elaraby is also an advisory member of the AUC board of trustees, and was instrumental to the founding and continuing success of the Law Department.

Candidates must be Egyptian nationals admitted to or enrolled in the LLM program. The fellowship provides a reduction of tuition for one semester and is subject to renewal.

Applications for the fellowship are due online by April 1 for fellowships beginning the following September.

Graduate Merit Fellowships

Graduate Merit Fellowships are competitive awards offered to outstanding graduate students who wish to pursue full-time study in one of the graduate programs at AUC. Applicants who are fully admitted and have a B.A. or B.S. degree with a minimum overall grade point average of 3.4 on a 4.0 scale and a minimum grade point average of 3.5 in their major, or a grade of "Very Good" in their final year from one of the Egyptian national universities may apply. Students already enrolled in one of the graduate programs and who have a minimum grade point average of 3.7 in their graduate courses are also eligible to apply.

418 Graduate

The fellowships are awarded for one year, renewable for a second year. Awarded fellows receive full or partial waiver of tuition and fees and monthly stipend paid in local currency. As part of the fellowship, and in support of their professional training, Merit Fellows are assigned 18 hours per week of related academic or administrative work. Applications for the fellowship are made on line no later than April 1, selection is made by the School in May and the fellowship starts in September.

International Graduate Fellowships in Arab and Islamic Civilizations, Gender and Women's Studies, Middle East Studies and Sociology-Anthropology

International graduate fellowships are offered for two academic years and the intervening summer session to international students who wish to pursue full-time study in the master's program in Arab and Islamic Civilizations, Gender and Women's Studies, Middle East Studies or Sociology-Anthropology at the American University in Cairo. Candidates must have an appropriate undergraduate degree with a minimum overall grade point average of 3.4 on a 4.0 scale, or equivalent. The award is contingent upon full admission into one of the above graduate programs.

International fellows receive a partial or full tuition waiver, a monthly stipend paid in local currency, accommodation in the University dormitory or a monthly housing allowance, and medical service and health insurance. As part of their fellowship and in support of their professional training, fellows are assigned 18 hours per week of related academic or administrative work. Application for admission and recommendation letters are due at the Student Service Center in Cairo, or the New York Office. To be considered for fellowships submit the online fellowship application by February 1 for fellowships beginning in September. Selection of the fellowship is made in April.

Jameel MBA Fellows Program

The Jameel MBA fellowships are offered to future industrial leaders who have strong knowledge and skills in science and engineering coupled with superior business management and decision making skills. The fellowship offers a full tuition coverage and is designed to develop a new cadre of entrepreneurial leaders who can fill critical leadership positions in Egypt and the Middle East.

Eligible applicants are Egyptian or Palestinian nationals who have bachelor degrees in engineering (mechanical, electrical, industrial, etc) or science (pharmacy, medicine, computers, chemistry, etc.) from an accredited university. Applicants must have a B.S. degree with a minimum overall grade point average of 3.0 on a 4.0 scale or very good (Gayyid Giddan) and satisfy the English language university admission requirement and the GMAT exam. Applicants should be in the process of pursuing a career in Industry.

To be considered for the Jameel MBA fellowships submit the online fellowship application by the announced yearly deadline.

The Yousef Jameel Ph.D. Fellowships in Applied Sciences and Engineering

The Yousef Jameel Ph.D. Fellowships in Applied Sciences and Engineering are competitive awards offered to outstanding Ph.D. students who wish to pursue full-time study in the Ph.D. program in Applied Sciences and Engineering. Applicants who are fully admitted to the Ph.D. program may apply. Students already enrolled in the Ph.D. program and who have a minimum grade point average of 3.7 in their courses are also eligible to apply.

The fellowships are awarded for one year, renewable for a second year. Awarded fellows receive full waiver of tuition and fees and monthly stipend paid in local currency. As part of the fellowship, and in support of their professional training, Ph.D. Fellows are assigned 30 hours per week of related academic or research work, including 9 hours of teaching assistance. Applications for the fellowship is made online no later than April 1, selection is made by the School in May and the fellowship starts in September. To be considered for the Jameel MBA fellowships submit the online fellowship application by the announced yearly deadline.

The King Abdullah University of Science and Technology (KAUST) Graduate Fellowships

The KAUST fellowship awards are offered to outstanding new or continuing graduate students who wish to pursue full-time study in the Biotechnology, Physics or Engineering graduate programs at the School of Sciences and Engineering. Applicants who are fully admitted to a graduate program in either of the programs listed above and who have a B.S. degree with a minimum overall grade point average of 3.2 on a 4.0 scale, or a grade of "Very Good" in their final year from one of the Egyptian national universities may apply. Students already enrolled and who have a minimum grade point average of 3.2 in their graduate courses are also eligible to apply.

The fellowships are awarded for one year, renewable by semester, and may be awarded for a second year. Egyptians receive a waiver of tuition and fees and a monthly stipend paid in local currency.

Application for the fellowship is made online by April 1 for the fall semester and November 1 for the spring semester.

Laboratory Instruction Graduate Fellowships in Sciences and Engineering

Laboratory Instruction Graduate Fellowships are competitive awards offered to outstanding graduate students who wish to pursue full-time study in biotechnology, chemistry, computer science, engineering, nanotechnology, physics or robotics, control and smart systems. To be considered for the fellowship, the applicant must be fully admissible to one of the above graduate programs and have a B.S. degree with a minimum overall grade point average of 3.2 on a 4.0 scale, or its equivalent. Students already enrolled in one of these graduate programs and who have a minimum grade point average of 3.2 in their graduate courses are also eligible to apply. To retain the fellowship, the recipient must take at least 9 graduate credits and maintain a

420 Graduate

grade point average of 3.2 or better. In all cases, an applicant must demonstrate an ability and interest in conducting experimental work and interacting with students in a laboratory environment. Laboratory Instruction Fellows must not engage in other work activities outside the University.

The Laboratory Instruction Fellowship is reviewed every semester and may be renewed for a maximum period of two years. The fellowship may cover a summer session. Awarded fellows receive full or partial waiver of tuition and fees and monthly stipend paid in local currency. As part of their fellowship and in support of their professional training, fellows are assigned 24 hours per week of laboratory instruction work. Application for the fellowship is made online by April 1 for the fall semester and November 1 for the spring semester.

The Model Arab League (MAL) and Model United Nations (MUN) Graduate Fellowship

The MAL and MUN Graduate Fellowships are competitive awards offered to outstanding new or continuing graduate students who wish to pursue full-time study in the graduate program of the School of Humanities and Social Sciences (HUSS) or the Department of Economics, Economics in International Development, Middle East Studies or International Human Rights Law and work as the graduate advisers for the MAL or the MUN Programs. Applicants who are fully admitted to a graduate program in either of the programs listed above and who have a B.A. or B.S. degree with a minimum overall grade point average of 3.4 on a 4.0 scale, or a grade of “Very Good” in their final year from one of the Egyptian national universities may apply. Students already enrolled and who have a minimum grade point average of 3.7 in their graduate courses are also eligible to apply. Applicants should have sufficient history of participation in MAL or MUN and applicants for the MAL should have proficiency in the Arabic language.

The fellowships are awarded for one year, renewable by semester, and may be awarded for a second year. Egyptians receive a waiver of tuition and fees and a monthly stipend paid in local currency. For international fellows, the fellowship covers tuition up to 6 credits. As part of the fellowship, and in support of their professional training, fellows are assigned 18 hours per week of work as graduate advisers for the MAL or MUN programs. The MUN/MAL fellowship applications are submitted the online by April 1 for the MUN fellowship and by November 1 for the MAL fellowship. Selection is made by the MAL/MUN faculty advisor.

Mo Ibrahim Graduate Fellowships

Full undergraduate and graduate Mo Ibrahim fellowships are available to those who have a working knowledge of the Nubian language and are willing to support the preservation and enrichment of Nubian culture and heritage. The Mo Ibrahim Fellowships are competitive awards offered to outstanding students of Nubian origin from Egypt and Sudan who wish to pursue full-time study at AUC. Applicants must have a B.A. or B.S. degree with a minimum overall grade point average of 3.0 on a 4.0 scale, be fully admitted in one of the graduate programs and be proficient in the English language. Priority is given to applicants who demonstrate financial need. Satisfactory scores in the GMAT (required from applicants to the MBA) or in GRE (required from applicants to Economics, Economics in International Development) are required.

Fellowships are awarded for two years and the intervening summer. Awarded fellows receive

Graduate Student Finances 421

a waiver of tuition and fees, monthly stipend, book allowance and if needed accommodation in the University residence. Applications for the fellowship are made on line no later than April 1, selection is made by the faculty committee and the Mo Ibrahim Foundation in May and the fellowship starts in September.

Nadia Niazi Mostafa Fellowship in Islamic Art and Architecture

The Nadia Niazi Mostafa Fellowship in Islamic Art and Architecture is a competitive award offered annually to a second year Egyptian student enrolled in the graduate program in Arab and Islamic Civilizations with a specialization in Islamic Art and Architecture and who wishes to pursue full time study in the program. Egyptian students who are fully admitted to the graduate program in Arab and Islamic Civilizations with a specialization in Islamic Art and Architecture and who have completed one year of graduate study in the program (a minimum of 12 credit hours) with a minimum overall GPA of 3.2 on a 4.0 scale are eligible to apply.

The fellowship is awarded for two semesters of full time graduate study. The fellow receives a waiver of tuition and fees and a monthly stipend paid in local currency. As part of the fellowship and in support of professional training, the fellow is assigned 12 hours per week of related academic or administrative work. Application for the fellowship is made online by April 1, selection is made by the department in May and the fellowship starts in September.

SYLFF Fellowships

The American University in Cairo is proud to be provided to 69 universities and consortia in 44 countries offering the Ryoichi Sasakawa Young Leaders Graduate Fellowships (SYLFF). This highly selective scholarship program covers partial or full tuition, academic fees, medical service and health insurance (for international students) for two years of full-time graduate study at AUC in one of the following graduate programs: Arab and Islamic Civilizations, Community Psychology, Economics, Economics in International Development, English and Comparative Literature, Gender and Women Studies, International and Comparative Education, Journalism and Mass Communication, Middle East Studies, Migration and Refugee Studies, Political Science, Psychology, LL.M., International Human Rights Law and Sociology-Anthropology.

The primary objective of the SYLFF fellowship program is to educate outstanding young men and women who have demonstrated a high potential for future leadership in international affairs, public life and private endeavors. For the 2010-2011 program, four graduate students (Egyptian and international) will be selected from applicants who will start or are currently enrolled in the graduate program at AUC.

The award is contingent upon full admission of the applicant into one of AUC's M.A. programs listed above. All applicants (Egyptian and international) must submit an application for admission and an online fellowship application, recommendation letters to the Student Service Center in Cairo, or the New York Office by February 1. Selection of fellowship recipients will be determined by the AUC SYLFF selection committee and announced in April. Scholars will begin their coursework in September.

422 Graduate

The Tarek Juffali in Counseling Psychology and in Community Psychology Fellowships

The Tarek Juffali Fellowship Program aims at providing students from Egypt and the Arab World with the opportunity to obtain a two years Master of Arts or a one year graduate Diploma in Family Counseling and Community Psychology. Candidates who can contribute to the strengthening of families and communities in Egypt and the region by training as committed and motivated professionals to address urgent psychological and mental health issues are eligible to apply. To be considered for the fellowship, the applicant must be fully admissible to one of the psychology graduate programs and have a Bachelor degree with a minimum overall grade point average of 3.2 on a 4.0 scale, or its equivalent. Relevant professional experience in community or public service and demonstrated commitment to others are required.

The fellowship covers full or partial waiver of tuition and fees, a book allowance, medical service and health insurance fees (for international graduate students).

As part of their training awarded fellows will be assigned eight hours per week to work on counseling and community based projects as required by the department. Fellows are expected to participate in internships and other social service organizations, in regional or international conferences and attend workshops and training sessions. Application for the fellowship is made online by November 1 for fellowships beginning in Spring and February 1 for fellowships beginning in Fall. Selection is made by the department in December for Spring and in May for fellowships start in September.

Teaching Arabic as a Foreign Language Fellowships

Fellowships are offered in the Arabic Language Institute for two academic years and the intervening summer session to full-time students wishing to earn a master's degree in teaching Arabic as a foreign language and to acquire language teaching experience at the American University in Cairo. Special consideration in selection is given to those with previous TAFL experience and/or excellent qualifications in the Arabic language. Fellows pursue degree study, teach Arabic eight hours per week, and participate in Institute research.

Fellows receive a waiver of tuition and fees and a monthly stipend paid in local currency. International fellows are provided, in addition, with medical service and health insurance.

Applications for admission and the online fellowship application must be received no later than February 1 for fellowships beginning in September.

Teaching English as a Foreign Language Fellowships

Fellowships are offered in the English Language Institute for two academic years and the intervening summer session to full-time students wishing to earn a master's degree in teaching English as a foreign language and to acquire language teaching experience at the American University in Cairo. TEFL/TESL experience in the Middle East and knowledge of Arabic or other languages are considered a plus. Fellows pursue degree study, teach English eight hours per week, and participate in Institute research.

Graduate Student Finances 423

Fellows receive a waiver of tuition and fees and a monthly stipend paid in local currency. Nonresidents of Egypt are provided, in addition, with accommodation in the university dormitory or a housing allowance, medical service and health insurance and one-way home travel upon successful completion of the program. Applications for admission and the online fellowship application must be received no later than February 1 for fellowships beginning in September.

University Fellowships

The University Fellowships are competitive awards, granted to those who display superior academic performance and promise. Awarded fellows receive full or partial waiver of tuition and fees and monthly stipend paid in local currency. As part of their fellowship and in support of their professional training, fellows work with faculty members in teaching and research activities. To be considered for a fellowship, an applicant must be fully admissible to one of the graduate programs at AUC and have a B.A. or B.S. degree with a minimum overall grade point average of 3.2 on a 4.0 scale, or equivalent. Students already enrolled in one of AUC's graduate programs and who have achieved a minimum grade point average of 3.2 in their graduate courses are also eligible to apply. To retain the fellowship, the recipient must take at least 9 graduate credits and maintain a grade point average of 3.2 or better.

Application for the fellowship is made online by April 1 for the fall semester and November 1 for the spring semester.

Writing Center Graduate Fellowships

Writing Center Graduate Fellowships are established by the American University in Cairo to provide fellowship recipients with valuable teaching and academic experience as tutors in AUC's Writing Center. The fellowships are competitive awards offered to outstanding students who wish to pursue full-time study in the graduate program in: Arab and Islamic Civilizations, English and Comparative Literature, Gender and Women Studies Middle East Studies, Migration and Refugee Studies, Political Science, Psychology, LL.M., International Human Rights Law and Sociology-Anthropology. To be considered for the fellowship the applicant must be fully admissible to one of the graduate programs listed above at AUC and have a B.A. degree with a minimum overall grade point average of 3.2 on a 4.0 scale, or its equivalent. Students already enrolled in any of these graduate programs who have a minimum grade point average of 3.4 in their graduate courses are also eligible to apply. To retain the fellowship, the recipient must take at least 9 graduate credits and maintain a grade point average of 3.4 or better.

The Writing Center Fellowship is reviewed every semester and may be renewed for a maximum period of two years. The fellowship may cover a summer session. Fellows receive a waiver of tuition and fees and a monthly stipend paid in local currency. As part of their fellowship and in support of their professional training, fellows are assigned 10 hours of work per week in the Writing Center. Application for the fellowship is made online by April 1 for the fall semester and by November 1 for the spring semester.

Assistantships

Departments also offer a number of graduate assistantships to applicants who have special qualifications. Assistants receive monthly stipends - but no waiver of tuition and fees and assist

424 Graduate

in teaching, class or laboratory supervision, and/or research.

Post-Masters Assistantships

The university offers a limited number of post-masters assistantships to candidates who are interested in acquiring advanced professional guidance in improving their academic experience. To be considered for the assistantship, a candidate must have an M.A. or M.S. degree and should be preparing for a Ph.D degree or receiving academic training. The post-masters assistantship is for one year, renewable once. Fellows receive a monthly stipend and assist faculty members in teaching and/or research activities. Upon request to the Office of the Dean of Graduate Studies, fellows who are non-residents of Egypt will have guidance in obtaining student or temporary residence visas and medical service coverage but no health insurance.

Fellowship Without Stipend

The university provides institutional affiliation with AUC in the form of a fellowship without stipend for visiting graduate scholars who wish to do research in Egypt and already have a source of funding but who need such an affiliation. The benefits of this fellowship include guidance in obtaining student or temporary residence visas, sponsorship by an academic department, consultation with faculty, access to the library and medical service but no health insurance. The fellow must register at AUC for research, pay a research fee equivalent to the tuition of one graduate credit hour per academic year, and agree to the university's regulations regarding responsibility in research and publication. The fellowship does not provide housing or office space.

Acceptance of a scholar as a fellow without stipend is conditional upon the compatibility of his/her research interests with those of an AUC faculty member from a sponsoring department. Additional requirements may be specified such as making an oral presentation of the fellow's research project to a Scholars Seminar sometime during the period of his/her affiliation and presenting the school with a copy of research results such as a copy of the Ph.D dissertation and/or copies of any published articles. To apply, the candidate must submit the following: 1) personal information and a current resume; 2) a letter of introduction or sponsorship from the applicant's home institution; 3) a research outline, including a description of the research techniques and tools the applicant plans to use in Egypt; 4) a statement describing the source(s) and amount(s) of funding available for the applicant in Egypt; and 5) a recommendation from the AUC faculty member endorsed by the chair of the sponsoring department.

Applications and supporting documents should be submitted to the dean of the appropriate school for final approval.

Other Awards

Center for Arabic Study Abroad

Fellowships are offered to American graduate students for participation in the intensive Arabic language program taught by AUC under the Center for Arabic Study Abroad (CASA) established by a consortium of U.S. universities, including AUC, and funded annually since 1967 by the U.S. Department of Education. Both summer and twelve-month programs are

Graduate Student Finances 425

conducted. Students pay a program fee to help cover administrative costs and receive a fellowship covering tuition, maintenance, and travel from and to the United States.

Competence in modern standard Arabic equivalent to at least two years of study on the college level is a prerequisite.

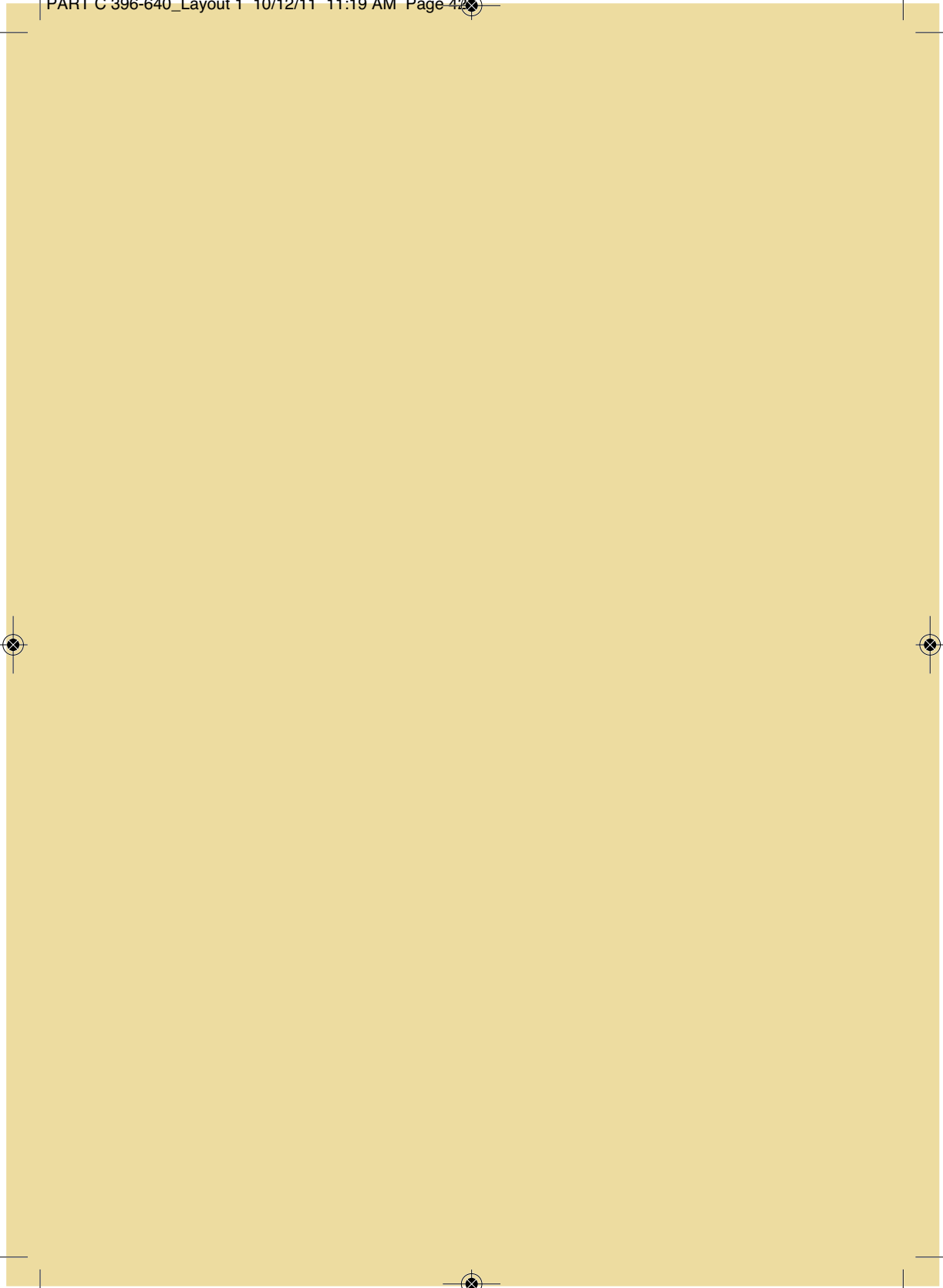
For information and applications contact:

The Director
Center for Arabic Study Abroad (CASA)
Emory University, Woodruff Library
4th floor, Language Center
540 Asbury Circle
Atlanta, GA 30322 USA
casa@emory.edu

Outside Assistance

Other than the opportunities described above, international students in the past have obtained outside support for work at AUC from the following sources:

1. Rotary Foundation International Scholarships for one year of graduate, or language study. Contact: student's local Rotary Club or Rotary Foundation of Rotary International, 1 Rotary Center, 1560 Sherman Avenue, Evanston, Illinois 60201. (www.rotary.org)
2. Fulbright grants for one year of graduate study are available to U.S. citizens. Contact: student's campus Fulbright Program adviser or Institute of International Education, 809 United Nations Plaza, New York, New York 10017. (www.iie.org)
3. Federal Stafford Student Loans can be used by U.S. citizens or permanent residents for graduate degree study or to earn a certificate in Arabic language (at least one year of intensive study). Pell Grants are not applicable. Degree and certificate students must obtain instructions from the AUC New York office. (e-mail: aucegypt@aucnyo.edu)
4. Veterans Administration educational benefits are applicable to graduate degree study at AUC. U.S. veterans should contact their regional office of the Veterans Administration. Written approval of benefits from the Veterans Administration should be obtained prior to coming to Cairo. (www.va.gov)
5. Canadian students may inquire about AUCC-Foreign Government Awards for graduate study in Egypt at: Association of Universities and Colleges of Canada, 350 Albert Street, Suite 600, Ottawa, Ontario K1R 1B1, Canada. (www.aucc.ca)





Master Degree Programs

428 Graduate

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.

The departmental prefixes used in labeling courses are given below:

Not all departmental prefixes represent fields in which a degree is offered; some represent minors and others only courses.

Accounting	ACCT History	HIST
American Studies	AMST International Business	INTB
Anthropology	ANTH Journalism & Mass Communication	JRMC
Arabic Language Credit Courses	ALNG Linguistics	LING
Arabic Language Intensive	ALIN LL.M. in International & Comparative Law	LAW
Arabic Language Intensive Summer	ALIS Management	MGMT
Arab & Islamic Civilizations	ARIC Management of Information Systems	MOIS
Arabic Writing Courses	ALWT Marketing	MKTG
Architectural Engineering	AENG Mathematics and Actuarial Science	MACT
Art	ARTV Mechanical Engineering	MENG
Biology	BIOL Middle East Studies	MEST
Biotechnology	BIOT Migration & Refugee Studies	MRS
Center for Arabic Studies Abroad	CASA Music	MUSC
Chemistry	CHEM Nanotechnology	NANO
Comparative Religion	CREL Operations Management	OPMG
Computer Science	CSCE Petroleum & Energy Engineering	PENG
Construction Engineering	CENG Philosophy	PHIL
Core Curriculum	SEMR Physics	PHYS
Economics	ECON Political Science	POLS
Education	EDUC Production/Operation Management	OPMG
Egyptology	EGPT Psychology	PSYC
Electronics Engineering	EEENG Public Policy & Administration	PPAD
Engineering	ENGR Rhetoric & Composition	RHET
English	ENGL Robotics	RCSS
English & Comparative Literature	ECLT Science	SCI
Environmental Engineering	ENVE Sociology	SOC
European Studies	EUST Sociology/Anthropology	SOC/ANTH
Film	FILM Teaching Arabic as a Foreign Language	TAFL
Finance	FINC Teaching English as a Foreign Language	TEFL
Gender & Women's Studies	GWST Theatre	THTR

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.

Fields of Graduate Study

This section lists the fields of graduate study that are currently offered at the American University in Cairo. Entries under fields of study in which a degree is offered include faculty names, introduction to the field, objectives and main features of the degree, requirements for the degree, as well as a listing of courses and their description.

430 Graduate

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,

Professors: N. Hanna (Chair), B. O'Kane, M. Serag, M. Mikhail, S. Mehrez, S. Fadl

Associate Professor Emeriti: E. Sartain, H. Lutfi

Associate Professors: E. Fernandes, N. El Nagggar, M. Birairi, H. Hammoudah

Assistant Professors: A. ElBindary, C. Gomez, S. Ahmad, E. Kenney

Master of Arts

Arabic 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:

- Arabic Language and Literature
- Islamic Art and Architecture
- Middle Eastern History
- 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 507-508 - Seminar on Modern Arabic Literature (3 cr.)

Arab & Islamic Civilizations 431

For Islamic Art and Architecture specialization

Choose one of the following:

ARIC 575-576 - Special Studies in Islamic Art and Architecture (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

432 Graduate

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.

Arab and Islamic Civilizations Courses (ARIC)

ARIC 504 Seminar on a Selected Work or Author in Classical Arabic Literature (3 cr.)

Offered occasionally.

May be repeated for credit when content changes.

ARIC 507-508 Seminar on Modern Arabic Literature (3 cr.)

Offered in alternate years.

Aspects of Arabic literature in the nineteenth and twentieth centuries.

ARIC 510-511 Special Studies in Classical Arabic Literature (3 cr.)

Prerequisites: consent of instructor. 510 offered in fall, 511 offered in spring.

Reading and papers on selected topics; attendance at a course of undergraduate lectures may be required. May be repeated for credit when content changes.

ARIC 512-513 Special Studies in Modern Arabic Literature (3 cr.)

Prerequisites: consent of instructor. 512 offered in fall, 513 offered in spring.

Reading and papers on selected topics; attendance at a course of undergraduate lectures may be required. May be repeated for credit when content changes.

ARIC 514 Bibliography and Manuscript Study (3 cr.)

Offered occasionally.

Techniques of working with Arabic manuscripts and scripts, editing, bibliographical study

ARIC 521-522 Special Studies in Islamic Thought and Institutions (3 cr.)

Prerequisites: consent of instructor. 521 offered in fall, 522 offered in spring.

Special readings and papers by graduate students who are attending a course of undergraduate lectures. May be repeated for credit when content changes.

ARIC 524 Seminar on Selected Topics in Qur'anic Studies (3 cr.)

Prerequisites: ARIC 335 or consent of instructor. Offered annually.

Selected topics in Qur'anic Studies: e.g. history of the text or specific theme in the Qur'an (gender issues, 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.

ARIC 525 Seminar on Selected Topics in Sira or Hadith (3 cr.)

Prerequisites: ARIC 335 or consent of instructor. Offered annually.

Arab & Islamic Civilizations 433

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.

ARIC 526 Seminar on Selected Topics in Islamic Law and Legal Theory (3 cr.)

Prerequisites: ARIC 335 or consent of instructor. Offered annually.

Selected topics in Islamic law; e.g. its history, methodologies, specific Islamic legal or political theories (including international relation, 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.

ARIC 527 Selected Topics in Islamic Theology, Sufism or Philosophy (3 cr.)

Prerequisites: ARIC 335 or consent of instructor. Offered annually.

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.

ARIC 528 Selected Topics in Islamic Studies (3 cr.)

Prerequisites: Consent of instructor. Offered in spring.

Selected Topics in Islamic Studies. May be repeated for credit when content changes.

ARIC 529 World Religions and the Study of Religion (3 cr.)

Same as CREL 529. Prerequisites: Enrollment in Islamic Studies MA Program.

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.

ARIC 530 Seminar on a Selected Topic in Medieval Arab/Islamic History, 600-1800 A.D. (3 cr.)

Prerequisites: consent of instructor. Offered occasionally

May be repeated for credit when content changes. Selected topics in Medieval Arab/Islamic history, 600-1800 A.D.

ARIC 542 Seminar on the Nineteenth Century Middle East (3 cr.)

Same as HIST 542. Offered in fall.

Readings, discussion, and research.

ARIC 543 Seminar on the Twentieth-Century Middle East (3 cr.)

Same as HIST 543. Offered in spring.

Readings, discussion, and research.

434 Graduate

ARIC 560 561 Special Studies in Middle Eastern History (3 cr.)

Prerequisites: consent of instructor. 560 offered in fall, 561 offered in spring.

Special readings for graduate students who are also attending a course of undergraduate lectures. May be repeated for credit when content changes.

ARIC 572 Fieldwork in Islamic Architecture (3 cr.)

Offered occasionally.

Archaeological methodology; examination of monuments and sites. May be repeated for credit when content changes.

ARIC 573 Seminar on the Architecture of a Selected Period (3 cr.)

Offered occasionally.

May be repeated for credit when content changes.

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

Prerequisites: consent of instructor. 575 offered in fall, 576 offered in spring.

Reading and papers on selected topics by graduate students who also attend a course of undergraduate lectures. May be repeated for credit when content changes.

ARIC 580 Independent Study and Readings (3 cr.)

Prerequisites: consent of unit. Offered occasionally.

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.

ARIC 599 Research Guidance and Thesis (no cr.)

Offered in fall and spring.

Biotechnology

School of Sciences and Engineering

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 in Biotechnology

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.

436 Graduate

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.)

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.)

Biotechnology Courses (BIOT)

BIOT 501 Biochemistry (3 cr.)

Same as CHEM 501.

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 enzymecatalyzed reactions, cellular metabolism, energy production, cellular regulatory processes, signal transduction cascades, and photosynthesis.

BIOT 502 Cell and Molecular Biology (3 cr.)

This course is designed to introduce the student to structure and function of the basic unit of

Biotechnology 437

life, the cell. This includes organelle biogenesis, cytoskeleton and cell motility, protein and lipid trafficking, membrane and ion transport, energy flow within the cell, cell cycle, division, and programmed cell death. In addition, to the passage of information from gene to protein will be addressed.

BIOT 503 Biotechnology (3 cr.)

Prerequisites: BIOT 501 and BIOT502.

This course, taught by a team of instructors, covers different areas of biotechnology. This course introduces students to the different aspects of the biotechnology revolution including principles of recombinant DNA technology, protein engineering, directed mutagenesis, manipulation of gene expression, microbial synthesis of biologics, biomass utilization, large scale production of proteins, transgenic animals, and the human genome project. In addition, this course introduces students to bioinformatics and bioengineering.

BIOT 504 Experimental Biotechnology (3 cr.)

Prerequisites: BIOT 503.

This course consists of two class periods and one three-hour lab period. It introduces students to the experimental methods used in investigation and research in biotechnology applications. The laboratory section will provide students with hands-on experimentations in major techniques in molecular biology such as DNA and RNA isolation, protein purification, DNA and protein electrophoresis, nucleic acid hybridization and polymerase chain reaction.

BIOT 505 Basics of Bio-entrepreneurship (3 cr.)

This course covers four modules: business aspects of biotechnology, regulatory issues, patenting biotechnology inventions, and bioethics.

BIOT 511 Bioengineering (3 cr.)

The application of the concepts and methods of the physical sciences and mathematics in an engineering approach to problems in the life sciences.

BIOT 521 Fundamentals of Bioinformatics (3 cr.)

Prerequisites: Familiarity with molecular biology, calculus, basic probability and statistics.

This course should introduce students to the fundamental theories and practices of bioinformatics. Lectures should focus on the basic knowledge required in this field, including the need for databases, access to genome information, sources of data, and tools for data mining. The course should also cover identification of both lower order and higher order informational patterns in DNA and approaches to linking genome data to information on gene function. Emphasis will be placed on how to use the databases and tools. Students should use the PERL programming language in this course.

BIOT 531 Molecular Diagnosis (3 cr.)

Topics include diagnosis of genetic disorders, infectious diseases, malignant diseases, and forensic applications such as paternity testing, DNA fingerprinting. Aspects of quality control, quality assurance, regulatory issues, and intellectual properties will be also covered.

BIOT 533 Pharmacogenomics and Pharmacogenetics (3 cr.)

Principles of pharmacology, drug efficacy, pharmacogenetics of major drug groups, application of pharamcogenomics and proteomics to clinical practice.

438 Graduate

BIOT 541 Molecular Genetics (3 cr.)

The course introduces genetics studies in molecular biotechnology; introduction to Mendelian genetics, eukaryotic gene regulation, genome project and model organisms utilized in research studies, cytogenetics, cellular genomic instability in carcinogenesis and molecular genetic based therapeutic approaches.

BIOT 543 Microbial Biotechnology (3 cr.)

The course introduces current advances in bacteriology, mycology and virology. This covers from medical applications, environmental application of microbes to microbial quality control and assurance in biotechnology products. In addition topics include the use of microbes in recombinant DNA technology, protein production in prokaryotes, fermentation technology, antimicrobial peptides and its applications in medical microbiology.

BIOT 551 Selected Topics in Biotechnology (3 cr.)

Prerequisites: consent of instructor, graduate standing.

Topics chosen according to special interests of faculty and students. May be repeated for credit more than once if content changes.

BIOT 580 Independent Study In Biotechnology (3 cr.)

Independent study in various problem areas of biotechnology may be assigned to individual students or to groups. Readings assigned and frequent consultations held. Students may sign up for up to 3 credits towards fulfilling M.Sc. requirements.

BIOT 590 Graduate Seminar I (2 cr.)

Seminars on research topics, research methodology, and thesis writing and presentations given by invited speakers.

BIOT 591 Graduate Seminar II (1 cr.)

Prerequisites: BIOT 590

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.

BIOT 599 Research Guidance and Thesis (3 cr. + 3 cr.)

Consultation on problems related to student thesis. Must be taken twice for a total of 6 credits.

Chemistry

Department of Chemistry
School of Sciences and Engineering

Professor Emeritus: F. Hassan

Professors: P. Askalani, H. Azzazy, D. Fleita, T. Madkour, J. Ragai

Associate Professor: A. Ramadan (Chair), T. Shoeib

Assistant Professor: N. Demir (Director of Master of Science in Chemistry), M. El Sayed, W. Mamdouh

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:

440 Graduate

- 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.)

Chemistry Courses (CHEM)

CHEM 501 Biochemistry (3 cr.)

Same as BIOT 501.

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 enzymecatalyzed reactions, cellular metabolism, energy production, cellular regulatory processes, signal transduction cascades, and photosynthesis.

CHEM 502 Organometallics (3 cr.)

Structure and properties of different types of organometallic compounds, types of ligands, bonding, reactivity of organo-transition metal compounds, applications in synthesis and catalysis.

CHEM 503 Advanced Organic Chemistry (3 cr.)

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 multistep syntheses.

CHEM 504 Methods of Structure Determination (3 cr.)

Prerequisites: CHEM 440 or consent of instructor.

Structure-properties relationships. Methods of structure determinations: diffraction methods, spectroscopic methods, resonance techniques, ionization-based techniques, magnetometry and other miscellaneous techniques. Case histories will be presented.

CHEM 511 Applied Food Microbiology (3 cr.)

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 foodborn bacteria. Much emphasis is being placed on practical training via extensive laboratory classes planned in this course. This training involves practical work on both classical and modern methodologies in food microbiology.

CHEM 512 Food Safety Assurance (3 cr.)

This course prepares students to participate in food safety monitoring and maintenance in various food industry and governmental health inspection sectors. The course encompasses topics on food-associated hazards and approaches to ensure food safety. In addition to lectures, the course will involve problem-based learning, class discussions and hands-on training on the application of food safety assurance systems. Multiple visits to modern safety units within food processing plants will be organized.

CHEM 513 Beverage Manufacturing (3 cr.)

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.

CHEM 514 Chemical Changes In Food During Processing (3 cr.)

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.

CHEM 515 Food Additives (3 cr.)

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

442 Graduate

students on how to use analytical techniques to distinguish between "natural" and "artificial" additives. Regulation and approval of additives for use in foods will be covered.

CHEM 516 Food Fermentation (3 cr.)

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.

CHEM 517 Sensory Evaluation of Food Products (3 cr.)

This course consists of two lectures and one laboratory session per week. It investigates the nutritional, chemical, physical, and sensory properties of foods in relation to preparation procedures. It will present sensory characteristics of foods and assessment of color, texture, and flavor. The course will give the student the ability to apply sensory testing of foods, practice different types of sensory tests, and understand errors in sensory testing. It will assess the best environment for sensory testing and procedures of sensory testing, measurements and scales. Statistical analysis of sensory data such as discrimination tests, descriptive tests, hedonic tests, affective tests will also be discussed.

CHEM 518 Functional Foods and Nutraceuticals (3 cr.)

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.

CHEM 519 Practical Approaches to Food Analysis (3 cr.)

This course is designed to introduce students to the theory and application of chemical, physical and instrumental methods of food analysis. Modern separation and instrumental analysis techniques that are used for detection of food constituents (e.g. moisture, ash, nitrogen, protein, lipid, carbohydrate, vitamins, minerals, etc) as well as contaminants (e.g. mycotoxins, pesticide residues, antimicrobial agents, heavy metals, etc) are stressed. Topics will include sample handling, preparation and analysis as well as the evaluation and reporting of data. Key analytical and separation techniques such as spectroscopy, titration, potentiometry, atomic absorption, chromatography and mass spectrometry will also be presented.

CHEM 551 Selected Topics in Chemistry (3 cr.)

Prerequisites: Consent of instructor

Topics include: polymer science, quantum chemistry and spectroscopy, and molecular symmetry and applications.

Chemistry 443

CHEM 552 Independent Study in Chemistry (3 cr.)

Prerequisites: Consent of instructor.

Independent study in various problem areas of biotechnology may be assigned to individual students or to groups. Readings are assigned and frequent consultation held. Students may sign for up to 3 credits towards fulfilling M.Sc. requirements.

CHEM 590 Graduate Seminar I (2 cr.)

Seminars on research topics, research methodology, and thesis writing and presentations given by invited speakers.

CHEM 591 Graduate Seminar II (1 cr.)

Prerequisites: CHEM 590.

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.

CHEM 599 Research Guidance and Thesis (3 cr. + 3 cr.)

Consultation on problems related to student thesis. Must be taken twice for a total of 6 credits.

444 Graduate

Computer Science and Engineering

Department of Computer Science and Engineering
School of Sciences and Engineering

Professor of Practice: K. El-Ayat

Professors: A. Abdelbar, A. El-Kadi (Chair), A. Goneid, A. Khalil, A. Rafea, M. N. Mikhail

Assistant Professors: M. Ahmed, E. Nasr, M. Shalan

Associate Professor: S. Aly, S. El-Kassas

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.)

Computer Science & Engineering 445

CSCE 535 - High Speed Networks (3 cr.)
 CSCE 541 - Advanced Software Engineering (3 cr.)
 CSCE 555 - Computer Graphics and Animation (3 cr.)
 CSCE 561 - Knowledge Engineering (3 cr.)
 CSCE 563 - Digital Image Processing and Pattern Recognition (3 cr.)
 CSCE 564 - Web Mining (3 cr.)
 CSCE 567 - Robotics and 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:

Semester 1: 3 graduate courses
 Semester 2: 3 graduate courses + seminar P1
 Semester 3: 2 graduate courses + Thesis
 Semester 4: Thesis + seminar P2

Graduate Diploma in Computer Science

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.

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

446 Graduate

studies. The diploma may be completed in one academic year; no thesis is required.

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 555 - Computer Graphics and Animation (3 cr.)
- CSCE 563 - Digital Image Processing and Pattern Recognition (3 cr.)

- CSCE 567 - Robotics and Computer Vision (3 cr.)
- CSCE 585 - Selected Topics in Computer Science (3 cr.)
- CSCE 591 - Capstone Project in Computing (3 cr.)

Computer Science Courses (CSCE)

CSCE 525 Algorithms and Complexity Theory (3 cr.)

Measures of the complexity of algorithms. Amortized complexity. Greedy algorithms. Dynamic programming. NP-Completeness and lower-bound theory. Cook's Theorem. Techniques for proving problems NP-complete. Complexity of parallel algorithms. Well-parallelizable and hardly-parallelizable problems.

CSCE 527 Neural Networks and Genetic Algorithms (3 cr.)

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.

CSCE 529 Design and Analysis of Parallel Algorithms (3 cr.)

PRAM model and work-time presentation framework. Basic parallel algorithm design techniques: balanced problem decomposition, printer jumping, divide and conquer, partitioning, pipelining, accelerated cascading, symmetry breaking. Parallel searching and sorting. Parallel pattern matching. Randomized parallel algorithms.

CSCE 530 Advanced Processor Architecture (3 cr.)

Prerequisites: CSCE 330.

Advanced topics in modern micro-processor micro-architecture 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, Super-scaling, Reservation stations, Instruction Reordering buffers, Speculative instruction execution, Out-of-order instruction execution and retirement), Static and Dynamic Branch prediction techniques & VLIW technology. CMP (Chip Multiprocessing), Chip multithreading design and applications. Basics of parallel software design issues and how they interact with the architecture. All topics are illustrated by state of the art Microprocessors.

CSCE 532 Parallel Computer Architecture (3 cr.)

Prerequisites: CSCE 530.

Analysis and design of high-performance computer systems, pipelining techniques, cache design, instruction level parallelism, parallel and vector architectures, shared memory multiprocessors, message passing multicomputers, data flow architectures, scalability and performance, software for parallelism.

CSCE 535 High Speed Networks (3 cr.)

Prerequisites: CSCE 435 or equivalent.

Introduction to the need for Gigabit networks and the technology support of that demand.

448 Graduate

Changes required to support this high rate of data, voice, and live video. Over view of IDN, ISDN, and B-ISDN. Fiber Optics Medium. Cell networking. ATM (Asynchronous Transfer Mode). Switching and switches. Traffic control in ATM networks. ATM Local Area Networks.

CSCE 541 Advanced Software Engineering (3 cr.)

Formal methods in software engineering, first-order logic, basic specification elements and rigorous proofs. Verification and validation. Testing and debugging techniques and tools. Reusability, modularity, top-down and bottom-up development approaches, object classification, support for concurrency and polymorphism.

CSCE 545 Distributed Systems (3 cr.)

Models of concurrency, specifications of distributed systems, consistent global states, fault tolerance and related problems, inter-process communication, distributed file systems, replication mechanisms, distributed operating systems, real-time distributed systems, transputers, and case studies of distributed systems.

CSCE 555 Computer Graphics and Animation (3 cr.)

Fundamental concepts and basic techniques of computer graphics. Algorithms and recent research in graphics and animation. A thorough survey of object modeling, realism, ray tracing, rendering, and light models. Modeling of animated objects, motion animation, and human animation.

CSCE 561 knowledge Engineering (3 cr.)

Introduction to knowledge based system development life cycle, acquiring knowledge from domain experts, text, and data, machine learning techniques used to automate the knowledge acquisition process, knowledge modeling approaches, design and implementation of knowledge based systems, knowledge based systems verification and validation techniques.

CSCE 563 Digital Image Processing and Pattern Recognition (3 cr.)

Image transforms, enhancement and filtering, image restoration, compression and segmentation, pattern representation and description, pattern classification, recognition and interpretation.

CSCE 564 Web Mining (3 cr.)

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.

CSCE 565 Advanced Artificial Intelligence (3 cr.)

Same as RCSS 545.

Concepts of logic-based Artificial Intelligence, logic programming, automated deduction, planning, speech recognition, machine learning, case-based reasoning, integrated AI architecture, distributed AI, common sense representation, and fuzzy systems.

CSCE 567 Robotics and Computer Vision (3 cr.)

Prerequisites: CSCE 565.

Introduction to robotic applications and research, spatial representation, robot kinematics,

Computer Science & Engineering 449

Jacobian matrix, motion trajectory, sensor and data fusion, sensor placement, imaging for robotics, object identification, wireless communication. Microcontrollers, real-time operating systems and computer interfacing.

CSCE 569 Natural Language Processing and Machine Translation (3 cr.)

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.

CSCE 585 Selected Topics in Computer Science (3 cr.)

Prerequisites: permission of instructor.

Topics chosen according to special interests of faculty and students. May be repeated for credit more than once if content changes.

CSCE 590 Seminar (1 cr.)

Seminars of research topics given by invited speakers as well as presentation and discussion of results obtained by graduate students during their research work. Must be taken twice for credit. Graded pass or fail.

CSCE 591 Capstone Project in Computing (3 cr.)

Prerequisites: consent of instructor.

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. This course cannot be taken for credit by thesis-option M.Sc. students.

CSCE 599 Graduate Thesis (3 cr.)

Consultation on problems related to student thesis. Must be taken twice for credit.

450 Graduate

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

Master of Science in Construction Engineering

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:

Construction & Architectural Engineering 451

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 and:

- CENG 592 - Advanced Topics in Construction Engineering (3 cr.)

May include:

- Geotechnical Engineering
- Construction Technology Analysis and Development
- Advanced Structural Design and Construction

452 Graduate

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.

Master of Engineering In Construction Engineering

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

Construction & Architectural Engineering 453

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.

Construction Engineering Courses (CENG)

CENG 530 Contracts in Construction Industry (3 cr.)

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.

CENG 531 Construction Management (3 cr.)

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.

CENG 532 Planning, Scheduling and Control (3 cr.)

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.

CENG 533 Management for Multi-National Environments (3 cr.)

Prerequisites: CENG 531. Offered in fall and spring.

Complexities of multinational Projects. Challenges in managing multinational Projects; crosscultural differences, communication, standards, approaches to problem solving. Cross-culture differences & engineering firms, avoiding cross-cultural pitfalls, taking advantage of cultural diversity. Distance management. Breaking into foreign markets.

CENG 534 Risk Management and Bidding Strategies (3 cr.)

Prerequisites: CENG 531. Offered in fall and spring.

Introduction to risk and uncertainty. Process of risk management; risk identification, risk analysis (qualitative and quantitative), risk response planning, risk monitoring and control. Tools and techniques; decision trees, PERT, modeling, optimization, Monte Carlo simulation and application. Introduction to risk analysis packages (Crystal Ball, PERT Master). Analyzing the bidding accounting for project risks. Behavior of key competitors, estimating optimum markup.

CENG 535 Claims and Disputes in the Construction Industry (3 cr.)

Prerequisites: CENG 531. Offered in fall and spring.

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.

454 Graduate

CENG 536 Systems Analysis for Construction (3 cr.)

Prerequisites: CENG 532.

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.

CENG 537 Resource Management for Construction Projects (3 cr.)

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.

CENG 538 Procurement of Assets & Services for Construction Projects (3 cr.)

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.

CENG 567 Construction Leadership and Management Skills (3 cr.)

Prerequisites: consent of instructor.

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. Not open for credit for M.S. students.

CENG 570 Advanced Construction Management (3 cr.)

Prerequisites: consent of instructor.

The course covers advanced topics in the area of construction management including advanced scheduling techniques, cost schedule integration, bidding models applied to the construction industry emphasizing the difference in view points between owners and contractors, risk in construction, contingency and markup allocations, risk versus return relationship including models to determine the cost-of-capital for construction firms and projects.

CENG 571 Advanced Systems Analysis for Construction Engineering (3 cr.)

Introduction to the basic construction industry and its problems. Systems analysis approach; systems modeling; systems approach to engineering and management; closed versus open systems; modeling construction organizations as open systems. Decision analysis; decision making under certainty, risk and uncertainty. Utility Function and Sensitivity Analysis: definition and techniques. Introduction to Reliability; Reliability and Risk Analysis:

Construction & Architectural Engineering 455

Qualitative and Quantitative Techniques; Reliability Analysis: Knowledge Representation; Importance of Developing a Reliable Knowledge-Based System [KBS]. Restructuring the Construction Engineering Management Systems using The Systems, Reliability and Decision-Making Module. Not open for students with MENG 517.

CENG 572 Claims and Disputes in the Construction Industry (3 cr.)

The course provides an in-depth coverage of the litigious environment within the construction industry and outlines the appropriate techniques to handle such environment. Claims and disputes from both owners and contractors perspectives are covered. The course also outlines the use of techniques such as scheduling as mechanisms for the efficient resolution of claims.

CENG 573 Advanced Construction and Building Materials (3 cr.)

Recent developments in the areas of concrete, highway materials and metals. Examples are concrete admixtures, light weight aggregates, polymers, pre-stressed concrete, soil stabilizers, bituminous materials and high strength low alloy steels. Advanced mechanics of components incorporating innovative materials. Environmental-friendly use of materials and recycling of solid waste.

CENG 574 Methods and Equipment for Construction (3 cr.)

Same as CENG 424 with special course assignments for graduate students.
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.)

CENG 575 Techniques of Planning, Scheduling and Control (3 cr.)

Same as CENG 446 with special course assignments for graduate students.
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.)

CENG 576 Advanced Systems for Construction (3 cr.)

Prerequisites: consent of instructor.
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.

CENG 577 The Finite Element Method in Structural Engineering (3 cr.)

Prerequisites: consent of instructor.
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.

456 Graduate

CENG 578 Resource Management for Construction Projects (3 cr.)

Prerequisites: graduate standing.

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.

CENG 579 Assessment, Protection and Repair of Structures (3 cr.)

Same as CENG 479 with special course assignment for graduate students.

Types, mechanisms and analyses of deterioration of concrete and steel structures, approaches and means of damage assessment, assessing structural stability and integrity of existing structures, development of sound strategy for repair and restoration. Protection and repair materials, techniques, design and economic aspects.

CENG 580 Independent Study in Construction Engineering (3 cr.)

Independent study in various problem areas of engineering may be assigned to individual students or to groups. Readings assigned and frequent consultations held. (Students may sign for up to 3 credits towards fulfilling M. Sc. requirements).

CENG 592 Advanced Topics in Construction Engineering (3 cr.)

Prerequisites: consent of instructor.

Topics to be chosen every year according to specific interests. May be taken for credit more than once if content changes.

CENG 599 Research Guidance Thesis (3 cr.)

Consultation on problems related to student thesis. Must be taken twice for credit.

Development Studies

School of Business
School of Humanities and Social Sciences

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)

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

458 Graduate

Economics

Department of Economics School of Business

Professors Emeritus: G. Amin, W. Mikhail

Professors: A. Beshai (Director of Graduate Studies), A. El Shazly

Associate Professors: A. Kamaly (Chair), H. El-Ramly, N. Rizk, (Associate Dean for Graduate Studies and Research), J. Salevurakis, T. Selim

Assistant Professors: M. Abdel Baki, M. Bouaddi, D. El Edel, M. Al-Ississ, I. Rahmani, M. Said, A. Seghir (Associate Dean for Undergraduate Studies and Administration), A. El-Shennawy

Assistant Professor (ABD): S. Atallah

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.

Master of Arts in Economics

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)

Economics 459

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)

460 Graduate

ECON 519 - Project Evaluation (3 cr.)

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

3. *International Economics*

ECON 505 - International Economics (3 cr.)

ECON 517 - International Finance (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 - International Economics (3 cr.)

ECON 512 - Economic Growth & Development (3 cr.)

ECON 519 - Project Evaluation (3 cr.)

Economics 461

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 Organizations (3 cr.)
 MGMT 504 - Human Resources 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.

462 Graduate

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 Graduate Diploma in International Development

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 - International Economics (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.)

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

Economics Courses (ECON)

ECON 500 The Economic Setting for Development (3 cr.)

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.

ECON 501 Advanced Macroeconomic Theory (3 cr.)

Prerequisites: ECON 416. Offered in Spring.

Analysis of the equilibrium and disequilibrium macroeconomic activity of an open, monetized economy with a government sector. Theories of aggregate consumption and investment behavior.

ECON 502 Advanced Microeconomic Theory (3 cr.)

Prerequisites: ECON 416. Offered in fall.

Axioms of consumer preferences and rational utility representation. Derivation of Marshallian, Hicksian and Engel demands. Consumer theory under uncertainty. Advanced theory of the firm. Market structure and competition including Cournot, Bertrand, and Stackelberg competition for homogeneous and differentiated products. The Envelope Theorem and its applications including Roy, Sheppard, and Hotelling Lemmas. The equilibrium number of firms and business cycle behavior. General equilibrium theory.

ECON 504 Financial Economics (3 cr.)

Prerequisites: ECON 416. Offered in spring.

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.

464 Graduate

ECON 505 International Economics (3 cr.)

Prerequisites: ECON 500* or ECON 501** and 502**.

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.

ECON 506 Advanced Topics in Economics (3 cr.)

Prerequisites: Consent of instructor. Offered occasionally.

Guided readings, research, and discussion in special topics in Economics.

ECON 508 Labor Economics (3 cr.)

Prerequisites: ECON 500* or consent of instructor. Offered occasionally.

The course delivers an advanced treatment of mainstream and alternative approaches to labor economics emphasizing an integration of theoretical and empirical models. Topics to be covered include the life cycle human capital models, search theoretic models, internal markets, reservation wages, migration, inequality, and poverty.

ECON 509 An Advanced History of Economic Thought (3 cr.)

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.

ECON 511 Economic Development in Middle East Countries (3 cr.)

Offered occasionally.

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.

ECON 512 Economic Growth & Development (3 cr.)

Prerequisites: ECON 500* or ECON 501** and 502**.

Growth models and their limitations in developing countries, role of capital, investment, and inflation in economic development, noneconomic factors, criteria, and choices of techniques in the process of development.

ECON 514 Ethical Issues in Development (3 cr.)

Prerequisites: ECON 500* or 501**.

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.

ECON 516 Mathematical Economics (3 cr.)

Prerequisites: ECON 416. Offered occasionally.

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.

ECON 517 International Finance (3 cr.)

Prerequisites: ECON 501.

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.

ECON 518 Econometrics (3 cr.)

Prerequisites: ECON 418. Offered in fall.

Review of the traditional methodology of the general linear model. Maximum-likelihood estimation with applications in limited-dependent variable models, switching regression models, ARCH models, etc. Time-series modeling. Dynamic modeling: the general to specific methodology. Non-stationarity and co-integration. Vector auto-regression. Exogeneity and structural invariance. Rational expectations. State-space models and the Kalman filter.

ECON 519 Project Evaluation (3 cr.)

Prerequisites: ECON 500* or ECON 502**.

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.

ECON 520 Competitive Strategy and Game Theory (3 cr.)

Prerequisites: ECON 502. Offered in Spring.

Analysis of competitive strategy and game theory including Nash equilibrium and its refinements. Sub-game 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.

ECON 521 Independent Study (3 cr.)

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.

ECON 522 Economic Strategies for Sustainable Development (3 cr.)

Prerequisites: ECON 500* or ECON 501**. Offered occasionally.

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.

466 Graduate

ECON 525 Research Workshop (3 cr.)

Prerequisites: ECON 501, 502 and 518. Offered occasionally.

Research methodology: collection of data, analysis of information, measurement, and testing hypotheses. Completion of a major research term paper.

ECON 526 Development Research Workshop (3 cr.)

Prerequisites: completion of at least three core courses.

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.

ECON 530 Health Economics in Developing Countries (3 cr.)

Prerequisites: ECON 502 or 500.

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.

ECON 531 Health Care Financing (3 cr.)

Prerequisites: ECON 501 and 502 or ECON 500.

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.

ECON 590 Practicum (3 cr.)

Prerequisites: completion of 3 core courses at least.

A 200hour assignment with a relevant development-related institution, to be completed over a 46 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.

ECON 599 Research Guidance and Thesis (6 cr.)

* 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

Egyptology

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

Professor Emeritus: K. Weeks

Professors: F. Haikal, S. Ikram (SAPE Chair)

Associate Professor: M. Ayad

Assistant Professor: L. Sabbahy

MA 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.

468 Graduate

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 546 - Religion in a Global World (3 cr.)

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 546 - Religion in a Global World (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.)

470 Graduate

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.)*

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

* The Selected Topics classes will change from semester to semester, depending on staffing options and student interest. Topics might range from: The study of Coptic Literature; Coptic Music; The Monastery of Abu Mena; Art in Monastic Devotional Practice, etc.

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 (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 (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.

Egyptology Courses (EGPT)

EGPT 500 Hieroglyphics III (3 cr.)

Prerequisites: EGPT 254 or equivalent. Offered every fall.

Students will read a number of Egyptian texts and learn how to translate and interpret written documents.

EGPT 501 Hieroglyphics IV (3 cr.)

Same as EGPT 402. Offered in spring.

Prerequisites: Hieroglyphics I-III or equivalent.

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.

EGPT 502 Introduction to Demotic (3 cr.)

Prerequisites: Equivalency to advanced hieroglyphs.

Demotic is a cursive script derived from Hieratic, and rooted in Hieroglyphics. It emerged in the 7th century B.C. and remained in use in parallel with Hieroglyphics and Hieratic, and later also with Coptic until the Byzantine Period, when the latter language took over. The Egyptian Language in its Demotic manifestation has further developed and new grammatical forms and vocabulary have appeared. In this class students will learn Demotic and work on a series of different texts.

EGPT 503 Introduction to Ptolemaic Hieroglyphs (3 cr.)

Prerequisites: EGPT 253-254 or equivalent.

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.

EGPT 504 Advanced Hieratic (3 cr.)

Prerequisites: EGPT 401 or equivalent.

The class consists of more advanced readings from the different stages of the hieratic writing, the different hands encountered, and the different categories of texts. Although this course will focus primarily on Palaeography, the translation of these texts will also familiarize students with aspects of the culture they may not necessarily have come across as undergraduates. They will also enhance their training in grammar and improve their knowledge of the Ancient Egyptian Language in general.

EGPT 505 Introduction to Coptic (3 cr.)

Same as EGPT 400. Offered occasionally.

Prerequisites: EGPT 254 or basic hieroglyphs.

Coptic represents the last stage of the ancient Egyptian language. The course will include reading of selected texts in two Coptic dialects.

EGPT 506 Advanced Coptic Texts (3 cr.)

Prerequisites: Basic Coptic.

An advanced course in Coptic that permits students to read a variety of texts. The subject matter changes regularly, and the course can be taken more than once as long as the material is different.

EGPT 510 Culture and Society of Ancient Egypt (3 cr.)

Prerequisites: Consent of instructor.

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

472 Graduate

covered includes the social organization of Egypt, the economy, agriculture, food, medicine, crafts, building methods, family structure, etc.

EGPT 512 Art, Societies, and Cultures of the Ancient Near East (3 cr.)

Prerequisites: Consent of instructor.

This course provides students with an overview of the prehistory and early historical periods of the ancient Near East. Considerable attention is given to the fundamental transitions which occurred in this region. In particular, we will examine: (1) the first emergence of settled village life, hierarchical social organization and the domestication of plants and animals during the Neolithic period; (2) the rise of urban centers, temple and palace elites and writing; (3) the emergence and spread of the states and subsequent militaristic empires which became the dominant political force in the ancient Near East for several millennia. This course examines both archaeological and historical evidence with a heavy emphasis on material culture, primary archaeological and historical data and the process of scholarly interpretation.

EGPT 519 Selected Topics in Ancient Egyptian Art and Culture (3 cr.)

Prerequisites: Consent of instructor.

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.

EGPT 521 Societies and Cultures of Ancient Nubia (3 cr.)

Prerequisites: Consent of instructor.

This course is intended to serve as a broad survey of the development of history, culture and society in Nubia and the Northern Sudan from the earliest era of food production (ca. 6000-4000 BCE/BC) to the development of the medieval kingdoms of Nubia (ca. 600-700 CE/AD). Special attention will be devoted to the question of the relations — cultural, commercial, technological, political — between Ancient Egypt and Ancient Nubia. For the purposes of this class, the term “Nubia” will mean the long stretch of the Nile Valley that extends between the Nile’s First Cataract (located in Southern Egypt just south of the city of Aswan) and its Sixth Cataract (located in the Sudan some distance north of the city of Khartoum). The term “Nubian” will describe the people of this specific area as well as all the distinctive languages and cultures that flourished here from the beginning of recorded history to the early modern period.

EGPT 522 Ancient Egyptian Religion and Ethics (3 cr.)

Prerequisites: Consent of instructor.

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.

EGPT 525 Settlement and Daily Life in Ancient Egypt (3 cr.)

This seminar introduces students to the material culture of the ancient Egyptians, specifically that of their settlements and daily life. The seminar concentrates on the archaeological evidence from settlements of the three most important periods of ancient Egyptian

civilization: the Old, Middle and New Kingdoms. The seminar will first discuss urban settlement patterns in ancient Egypt, and secondly the processes by which material assemblages form in settlements. The plans and structure of dwellings will also be considered along with the material evidence found inside of them.

EGPT 526 Death and Burial in Ancient Egypt (3 cr.)

Prerequisites: Consent of instructor.

This course will cover the funerary practices and beliefs of ancient Egypt from the Old Kingdom to the Graeco-Roman period. The subject matter covered will include the process of mummification and the spells used during the operation; the development of coffins, sarcophagi, amulets, canopic jars, canopic chests, shabtis, and other tomb furnishings; the evolution of the tomb, both royal and private, and any symbolic values that might be attached to the decoration and architecture; funerals, the cult of the dead, economic foundations supporting the tomb, and the religious rituals associated with funerals, the afterlife, and the mortuary cult. Experimental archaeology (mummification) might be involved in this class.

EGPT 530 Graeco-Roman Egypt (3 cr.)

Prerequisites: Consent of instructor.

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.

EGPT 531 The Romano-Byzantine World and Egypt (3 cr.)

Prerequisites: Consent of the instructor.

This course is designed to familiarize students with the material and historical culture of the Late Antique and Byzantine periods, with an emphasis on the geographical area of the eastern Mediterranean and Egypt. This course includes direct experience with actual works of Late Antique and Byzantine visual culture.

EGPT 532 Classical Art and Archaeology (3 cr.)

This course examines the techniques and methods of Classical Archaeology as revealed through an examination of the major monuments and artifacts 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.

EGPT 533 Coptic Art and Architecture (3 cr.)

Prerequisites: Consent of the instructor.

A course designed to introduce students to Coptic art and architecture, with an emphasis on monasticism. Field trips are required.

EGPT 539 Selected Topics in Coptic Studies (3 cr.)

Same as ARIC ANTH, HIST, SOC 445, EGPT 445.

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

474 Graduate

included in their major requirements.

EGPT 540 Advanced Method and Theory: Archaeological and Historical (3 cr.)

Prerequisites: Consent of instructor.

This seminar is geared to providing a methodological basis and theoretical approach for both the disciplines of archaeology and history. More time and emphasis will be put on the archaeological, however, as it is the more basic discipline in Egyptology.

EGPT 541 Material Culture: Looking at Artifacts in Context (3 cr.)

Prerequisites: Consent of instructor.

The course will provide an overview of different types of objects from funerary, ritual, and quotidian contexts, with special museum sessions. It is designed to familiarize students with different types of material culture of ancient Egypt so that they can identify and work with objects confidently, in museums or on excavations.

EGPT 542 Site Analysis (3 cr.)

Prerequisites: Consent of instructor.

This course is intended for students to learn about the history of a site in preparation for working at it, or on excavated material from it. They will choose sites and research its excavation history, as well as tracing back any documentation culled from the accounts of Eastern and Western travellers and historians. Understanding, using, and critiquing site reports will form part of the course, as well as learning to ask questions of the data. Site visits, local accounts, and modern imaging techniques should be used in order to understand and explore the past and present of the chosen site.

EGPT 545 Selected Topics in Cultural Resource Management and Museology (3 cr.)

Same as EGPT 459.

Prerequisites: Consent of instructor. Offered occasionally.

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.

EGPT 546 Religion in a Global World (3 cr.)

Same as ANTH 422 and SOC 422.

Prerequisites: 9 hours of social sciences and junior or senior standing. Offered in fall.

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.

EGPT 560 The Iconography of Ancient Egypt (3 cr.)

Prerequisites: A course in Egyptian art.

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

Egyptology 475

hieroglyphs, art and religion, and apply their knowledge to the comprehension of the iconography in tombs, temples, and in the minor arts.

EGPT 561 Advanced Readings in Ancient Egyptian religion Texts (3 cr.)

Prerequisites: EGPT 253-254- 500-501.

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.

EGPT 562 Advanced Readings in historical literature from the Old Kingdom to the Late period (3 cr.)

Prerequisites: EGPT 253-254-500-501.

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.

EGPT 591 Field Work in Egyptological Method and Theory (3 cr.)

Same as EGPT 491.

Prerequisites: Permission of instructor.

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.

EGPT 598 Research Seminar: Research Design and Writing (3 cr.)

Prerequisites: Consent of instructor.

The course is intended to give students an opportunity to clarify and structure their thesis planning, particularly by way of identifying the major problem they wish to explore, its possible scope and dimensions, and justifying the theoretical perspectives and methodology appropriate for the purpose. This course will also ensure that students are taught the expectations and the culture of their specific academic discipline so that they can participate successfully in it.

EGPT 599 Thesis (3 cr.)

Prerequisites: Completion of required coursework.

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.

476 Graduate

Electronics Engineering

Department of Electronics Engineering
School of Sciences and Engineering

Professors: H. Amer, Y. Ismail

Associate Professors: S. Abdel Azeem, A. Abou-Auf (Chair), M. Anis, A. Darwish, A. Elezabi

Assistant Professor: K. Seddik

Master of Science in Electronics Engineering

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.

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.

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.

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:

Electronics Engineering 477

- 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. hrs.)
- EENG 516 Analog Integrated Circuit Design (3 cr. hrs.)
- EENG 517 Digital Integrated Circuit Design (3 cr. hrs.)
- EENG 518 Advanced Integrated Circuit Design (3 cr. hrs.)
- EENG 520 Advanced Digital Communications (3 cr. hrs.)
- EENG 521 Wireless Communication Systems (3 cr. hrs.)
- EENG 522 Stochastic Processes for Engineers (3 cr. hrs.)
- 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. hrs.)
- EENG 541 Microwave Circuit Analysis and Design (3 cr. hrs.)
- EENG 547 RF and Microwave Systems (3 cr. hrs.)
- EENG 548 RF Integrated Circuit Design (3 cr. hrs.)
- EENG 549 Antennas Design and Applications (3 cr. hrs.)
- EENG 553 Fault-tolerant Computing and Reliability Modeling (3 cr. hrs.)
- EENG 556 Networked Control Systems Design & Applications (3 cr. hrs.)
- EENG 594 Advanced Topics in Electronics Engineering (3 cr. hrs.)

**** Note:** Subject to the approval of the supervisor 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.

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.

478 Graduate

Master of Engineering in Electronics Engineering

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.

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.

Admission

Admission requirements are the same as those for the Master of Science Program.

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** (27 credit hours)

Candidates must select at least seven courses out of the following EENG course list:

- EENG 510 Advanced Solid-State Devices (3 cr. hrs.)
- EENG 516 Analog Integrated Circuit Design (3 cr. hrs.)
- EENG 517 Digital Integrated Circuit Design (3 cr. hrs.)
- EENG 518 Advanced Integrated Circuit Design (3 cr. hrs.)
- EENG 520 Advanced Digital Communications (3 cr. hrs.)
- EENG 521 Wireless Communication Systems (3 cr. hrs.)

EENG 522 Stochastic Processes for Engineers (3 cr. hrs.)
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. hrs.)
EENG 541 Microwave Circuit Analysis and Design (3 cr. hrs.)
EENG 547 RF and Microwave Systems (3 cr. hrs.)
EENG 548 RF Integrated Circuit Design (3 cr. hrs.)
EENG 549 Antennas Design and Applications (3 cr. hrs.)
EENG 553 Fault-tolerant Computing and Reliability Modeling (3 cr. hrs.)
EENG 556 Networked Control Systems Design & Applications (3 cr. hrs.)
EENG 594 Advanced Topics in Electronics Engineering (3 cr. hrs.)

**** Note:** Subject to the approval of the supervisor 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.

Capstone Project (3 credit hours)

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 Engineering in Electronics Engineering with Concentration in Management of Technology (MoT)

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.

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.

480 Graduate

- 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.

Admission

Admission requirements are the same as those for the Master of Science in Electronics Engineering program.

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 7 courses out of the following list of 15 courses:

- EENG 510 Advanced Solid-State Devices (3 cr. hrs.)
- EENG 516 Analog Integrated Circuit Design (3 cr. hrs.)
- EENG 517 Digital Integrated Circuit Design (3 cr. hrs.)
- EENG 518 Advanced Integrated Circuit Design (3 cr. hrs.)
- EENG 520 Advanced Digital Communications (3 cr. hrs.)
- EENG 521 Wireless Communication Systems (3 cr. hrs.)
- EENG 522 Stochastic Processes for Engineers (3 cr. hrs.)
- 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. hrs.)
- EENG 541 Microwave Circuit Analysis and Design (3 cr. hrs.)
- EENG 547 RF and Microwave Systems (3 cr. hrs.)
- EENG 548 RF Integrated Circuit Design (3 cr. hrs.)
- EENG 549 Antennas Design and Applications (3 cr. hrs.)
- EENG 553 Fault-tolerant Computing and Reliability Modeling (3 cr. hrs.)
- EENG 556 Networked Control Systems Design & Applications (3 cr. hrs.)
- EENG 594 Advanced Topics in Electronics Engineering (3 cr. hrs.)

* *Note:* Subject to the approval of the supervisor 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. hrs.)
EENG 571/MGMT 517 Technology and Innovation Management (3 cr. hrs.)
EENG 572/MGMT 511 Strategic management of innovation (3 cr. hrs.)
EENG 573/MGMT 510 Entrepreneurship and Innovation (3 cr. hrs.)

Electronics Engineering Courses (EENG)

EENG 510 Advanced Solid-State Devices (3 cr.)

Same as NANO 561.

Prerequisites: Graduate standing in engineering and physics. Electromagnetics, vector algebra, differential equations, and MATLAB programming.

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.

EENG 516 Analog Integrated Circuit Design (3 cr.)

Prerequisites: EENG 316.

Design techniques for analog and mixed-signal VLSI circuits. Amplifiers: operational amplifiers, transconductance amplifiers, finite gain amplifiers and current amplifiers. Linear building block: differential amplifiers, current mirrors, references, cascoding and buffering. Performance characterization of linear integrated circuits: offset, noise, sensitivity and stability. Layout considerations, simulation, yield and modeling for high-performance linear integrated circuits. CAD tools: Cadence.

EENG 517 Digital Integrated Circuit Design (3 cr.)

Prerequisites: EENG 315 and EENG 316.

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.

EENG 518 Advanced Integrated Circuit Design (3 cr.)

Same as NANO 562.

Prerequisites: EENG 318.

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.

482 Graduate

EENG 520 Advanced Digital Communications (3 cr.)

Prerequisites: EENG 421 or equivalent.

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.

EENG 521 Wireless Communication Systems (3 cr.)

Prerequisites: EENG 421 or equivalent.

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.

EENG 522 Stochastic Processes for Engineers (3 cr.)

Prerequisites: MACT 317 or equivalent. .

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.

EENG 524 Enabling Technologies for High Data Rate Communications (3 cr.)

Prerequisites: EENG 421 or equivalent.

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.

EENG 525 Digital Signal Processing (3 cr.)

Prerequisites: EENG 320 or equivalent.

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.

EENG 526 Information Theory and Coding (3 cr.)

Prerequisites: EENG 421 or equivalent.

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.

EENG 530 Advanced Computer Networks (3 cr.)

Internet Architecture; Transport Layer Protocols; Network Layer Protocols; Wireless Networking; Peer-to-peer networks (P2P); Quality of Service; Network Security; Network Performance; Network Management; Network Applications.

EENG 541 Microwave Circuit Analysis and Design (3 cr.)

Prerequisites: EENG 442 or equivalent.

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.

EENG 547 RF and Microwave Systems (3 cr.)

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.

EENG 548 RF Integrated Circuit Design (3 cr.)

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.

EENG 549 Antennas Design and Applications (3 cr.)

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.

EENG 553 Fault-tolerant Computing and Reliability Modeling (3 cr.)

Prerequisites: EENG 453.

Faults, errors, fault modeling, redundancy techniques, error detecting and correcting codes, self-checking circuits, reliability and availability modeling, performability.

EENG 556 Networked Control Systems Design & Applications (3 cr.)

Same as RCSS 534.

484 Graduate

Prerequisites: EENG 321 and EENG 432.

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.

EENG 570 New Product Design and Development (3 cr.)

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.

EENG 571 Technology and Innovation Management (3 cr.)

Same as MGMT 517.

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.

EENG 572 Strategic Management of Innovation (3 cr.)

Same as MGMT 511.

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.

EENG 573 Entrepreneurship and Innovation (3 cr.)

Same as MGMT 510.

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

Electronics Engineering 485

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

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 (3 cr.)**

Prerequisites: EENG 521.

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.

EENG 661 Nanoscale CMOS (3 cr.)

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.

EENG 699 Research Guidance Dissertation (3 cr.)

Consultation on problems related to student thesis. To be taken 11 times for credit.

486 Graduate

Engineering

School of Sciences and Engineering

Professors: A. Abdel Hamid (Sabbatical), M. Abdel-Mooty, M. Abou-Zeid (CANG Chair), H. Amer, H. Elayat, A. Elimam, A. Esawi, A. Ezzeldin, E. Fahmy (Dean of Sciences & Engineering), M. Farag (Director of Engineering Services), M. Fouad, L. Gaafar, M. Habib, S. El-Hagggar (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 (EENG Chair), A. Ahmed, M. Anis, M. Arafa, A. Darwish, A. Elezabi (Director of Graduate Program), T. El-Kweidy, M. Mostafa, K. Nassar, S. Safar, A. Zanon.

Assistant Professors: M. Ali, M. Arafa, C. Bauriedel, S. El-Baradei, M. El-Barkouky, H. Fayek, L. El-Gabry, M. Hassan, M. El-Morsi, A. Waly.

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 Courses (ENGR)

ENGR 511 Computational Methods in Engineering (3 cr.)

Numerical solution of sets of algebraic and transcendental equations, eigen system analysis, numerical integration and differentiation. Numerical solution of ordinary differential equations, numerical solution of partial differential equations, optimization methods. Applications using MATLAB.

ENGR 512 Experimental Methods in Engineering (3 cr.)

Types of experiments. Physical models: type, scale, material selection. Experimental setups. Measurements: electrical measurements and sensing devices; pressure and flow measurements; temperature and thermal measurements; force, strain and motion measurements; computer data storage. Design of experiments: review of statistical inference, single factor experiments, randomized block and Latin square designs, factorial designs. Regression.

ENGR 516 Engineering for a Sustainable Environment (3 cr.)

Solid, industrial and hazardous waste generation and control, with an emphasis on sustainable engineering practices such as environmental impact assessment and performance, waste

Engineering 487

management, pollution prevention, waste minimization, cleaner production, energy recovery, recycling and reuse.

ENGR 518 Engineering Statistics (3 cr.)

Probability distributions, sampling distributions, estimation, test of hypotheses, regression, correlation, and nonparametric statistics.

ENGR 590 Graduate Thesis Seminar I (2 cr.)

Same as RCSS 590.

Seminars on research topics, research methodology and thesis writing, and presentations given by invited speakers.

ENGR 591 Graduate Thesis Seminar II (1 cr.)

Same as RCSS 591.

Prerequisites: ENGR 590.

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.

488 Graduate

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

Master of Arts

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", and ECLT 509 "Modern Literary Criticism", 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 in Comparative Literary Studies

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

490 Graduate

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

English & Comparative Literature Courses (ECLT)

ECLT 506 Greek Classics in Translation (3 cr.)

Same as ECLT 409.

Major works of Greek literature since 700 B.C., chosen on the basis of merit and influence and studied in the most artistic translations.

ECLT 507 Classics of the Ancient World (3 cr.)

Same as ECLT 410.

Major works in ancient Near Eastern and Latin literatures studied in the most artistic translations.

ECLT 508 History of Literary Criticism (3 cr.)

Same as ECLT 411.

Study of central documents in the history of literary criticism, from Plato to the Romantics.

ECLT 509 Modern Literary Criticism (3 cr.)

Same as ECLT 412.

Analysis of the major trends in modern literary theory, such as Russian formalism, new criticism and post-structuralism.

ECLT 510 Renaissance Writers (3 cr.)

Detailed study of the works of selected British or European writers from Petrarch to Shakespeare.

ECLT 512 Seventeenth-Century Writers (3 cr.)

Detailed study of the works of selected seventeenth-century European and British writers.

ECLT 514 Eighteenth-Century Writers (3 cr.)

Selected works of major eighteenth century writers.

English & Comparative Literature 491

ECLT 516 The Romantic Movement (3 cr.)

Selected critical problems in the Romantic movement..

ECLT 517 Nineteenth Century Writers (3 cr.)

Works of selected major nineteenth-century novelists and poets.

ECLT 523 Modern Poets (3 cr.)

Readings and analyses of works of major British, European, and American poets from the beginnings of the Symbolist and Imagist movements to the present.

ECLT 531 The Modern Novel (3 cr.)

Works of selected novelists of the twentieth century.

ECLT 540 Readings in American Literature (3 cr.)

Guided reading.

ECLT 542 Readings in French Literature (3 cr.)

Guided reading.

ECLT 543 Readings in British Literature (3 cr.)

Guided reading.

ECLT 545-546 Selected Topics (3 cr.)

545 offered in fall, 546 in spring.

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. May be repeated for credit if content changes.

ECLT 588 Comprehensives (no cr.)

Individual consultation for students preparing for the comprehensive examination.

ECLT 599 Research Guidance and Thesis (no cr.)

492 Graduate

Environmental Engineering

School of Science and Engineering

Director: E. Smith

Steering Committee: S. El-Baradei, S. El-Haggar (MENG Chair), E. Imam, A. Shaarawi (Dean of Graduate Studies), E. Smith

Master of Science in Environmental Engineering

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:

Environmental Engineering 493

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

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 the following Graduate Thesis Seminar courses. 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 the following ENVE course, by the completion of 18 credit hours. Students must register in the following ENVE course continuously and for at least two semesters. 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.

Master of Engineering in Environmental Systems Design

The Master of Engineering Degree in Environmental Systems Design prepares students for higher level professional practice in local and international markets, whether in private

494 Graduate

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.

Environmental Engineering Courses (ENVE)

ENVE 561 Water Quality Control (3 cr.)

Water quality parameters: standards and analysis; theory and basic processes for modeling fate and transport of pollutants in surface water bodies; integrated water pollution control strategies.

ENVE 562 Unit Operations in Environmental Engineering (3 cr.)

Same as CENG 473 but with additional requirements for graduate students.

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.

ENVE 564 Air Pollution Control Engineering (3 cr.)

Air pollutants sources, sinks, and residence time. Costs of air pollution. Control strategies and systems design. Mathematical models of air pollution. Monitoring and control instruments.

ENVE 565 Air Pollution and Combustion (3 cr.)

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.

ENVE 566 Solid and Hazardous Wastes Engineering (3 cr.)

Same as CENG 475 but with additional requirements for graduate students.

Solid wastes – Nature, generation and collection. Local and regional management strategies including recycling and recovery of useful products, land-filling, and incineration. Hazardous wastes – Nature, generation and collection. Risk assessment. Management strategies including source reduction, treatment, recovery, land-filling, and incineration.

ENVE 567 Environmental Chemistry (3 cr.)

Chemical principles for quantitative solution of environmental engineering problems with a focus on aqueous systems. Concept of chemical equilibrium is developed to determine mass distribution of environmentally significant substances. Applications of acid-base, coordination, oxidation-reduction, and organic distribution reactions are developed for water and wastewater systems.

ENVE 568 Noise Pollution Fundamentals, Measurements and Control (3 cr.)

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

496 Graduate

outdoors; noise control regulations.

ENVE 569 Groundwater Hydrology and Contamination (3 cr.)

Groundwater and well hydraulics with applications to water supply and control of contaminants; groundwater contamination; development, solution and application of contaminant transport equations; groundwater remediation; introduction to unsaturated flow.

ENVE 580 Independent Study in Engineering (3 cr.)

Independent study in various problem areas of engineering may be assigned to individual students or to groups. Readings assigned and frequent consultations held. (Students may sign for up to 3 credits towards fulfilling M. Sc. requirements).

ENVE 592 Advanced Topics in Engineering (3 cr.)

Prerequisites: consent of instructor.

Topics to be chosen every year according to specific interests. May be taken for credit more than once if content changes.

ENVE 599 Research Guidance Thesis (3 cr.)

Consultation on problems related to student thesis. Must be taken twice for credit.

European Studies (Graduate Diploma)

School of Humanities and Social Sciences

Director: J. Edwards

Faculty: I. Ivekovic, W. Melaney

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.)

Or

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).

498 Graduate

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.)

European Studies Courses (EUST)

EUST 504 European Union Law (3 cr.)

Same as LAW 504.

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.

EUST 506 Seminar on Practical Diplomacy (Arranged with European embassies and institutions) (3 cr.)

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.

EUST 508 Seminar on the European Union (3 cr.)

This seminar course includes occasional speakers from local European embassies and institutes. Topics may include constitutional, political, economic, social, cultural, and defense issues. Classwork includes preparation for student presentations on these and other current EU issues.

EUST 511 Special Topics in Nineteenth and Twentieth Century European Studies (3 cr.)

Same as HIST 511.

Content differs according to topics.

EUST 513 The European Systems of Human Rights Protection (3 cr.)

Same as LAW 513.

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.

Gender and Women's Studies in the Middle East/North Africa

The Cynthia Nelson Institute for Gender & Women's Studies
School of Global Affairs and Public Policy

Director: M. Rieker

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

500 Graduate

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)
- LAW 517 - Human Rights and Identity Groups (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.)
- LAW 503 - Law and Economic Development (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 three 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)

Gender & Women's Studies 501

Electives:

The remaining five courses are electives, two of which have to be GWST courses. 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 in Gender and Women's Studies in the Middle East and North Africa

Course Requirements

Six courses (18 credit hours) are required for the Diploma. Diploma students in the Gender and Women's Studies in the Middle East and Gender and Justice tracks must take all required courses in the respective tracks (see MA program description for details). Diploma students in the Gendered Political Economies track must select 5 of the six required courses, in addition to one elective course (see MA program description for details).

The diploma option allows students to pursue a disciplinary MA at AUC and at the same time acquire gender studies qualifications.

502 Graduate

Gender and Women's Studies Courses (GWST)

GWST 500 Theorizing Gender (3 cr.)

Offered in fall.

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.

GWST 501 Approaches to Middle East/ North Africa Gender and Women's Studies (3 cr.)

Offered in spring.

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 political 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."

GWST 502 Justice: Histories and Theories (3 cr.)

Same as LAW 520. Offered every fall.

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 nonexistent, rendering different forms of justice, such as gender justice, appendixes 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.

GWST 503 Histories and Theories of Gender and Development (3 cr.)

Offered every fall.

The aim of this foundation seminar is to introduce students to the historical, theoretical and empirical perspectives and experiences that inform current programs and policies in the field 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.

GWST 504 Gender and Migration (3 cr.)

Same as MRS 504.

This seminar provides an in depth engagement with the growing subfield 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

Gender & Women's Studies 503

Migration Studies and Refugee Studies and the Institute for Gender and Women's Studies.

GWST 505 Gender and Feminist Research Methodologies (3 cr.)

Prerequisites: GWST 500. Offered in spring.

This course provides an introduction to gender and feminist approaches to dominant theories of knowledge and research methodologies in the social sciences.

GWST 506 Reading Capital (3 cr.)

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 570 Special Topics in Gender and Women's Studies (3 cr.)

Alternating selected topics. May be taken more than once if content changes.

GWST 580 Independent Study and Readings (3 cr.)

Prerequisites: Approval of IGWS Graduate Advisory Committee. Offered occasionally.

GWST 599 Research Guidance and Thesis (no cr.)

Offered in fall and spring.

Consultation for students in problems related to their thesis.

504 Graduate

History

(Graduate Courses in History)

Department of History

School of Humanities and Social Sciences

History Courses (HIST)

HIST 511 Special Topics in Nineteenth and Twentieth Century European Studies (3 cr.)

Same as EUST 511.

Content differs according to topics.

HIST 542 Seminar on the Nineteenth-Century Middle East (3 cr.)

Same as ARIC 542.

Readings, discussion, and research.

HIST 543 Seminar on the Twentieth-Century Middle East (3 cr.)

Same as ARIC 543.

Readings, discussion, and research.

International & Comparative Education

Graduate School of Education

Distinguished Professor: S. Peterson (Dean of Graduate School of Education)

Professor: A. Gil-Garcia

Assistant Professor: T. Purinton (Associate Dean)

Professor of Practice: M. Zaalouk (Director of the Middle East Institute for Higher Education (MEIHE))

Associate Professors of Practice: R. Hozayin, 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.

Fieldwork

Students who enter the program with no documented school-based experience (either as a teacher or school administrator) will be required to take 3-credit Supervised Field Work course (as part of the required 11 courses/ 33 credits).

- EDUC 595 - Supervised Fieldwork

Master of Arts in International & Comparative Education

A total of 33 credit hours (11 courses) are required for MA students with no previous school-based teaching or leadership experience. Those MA students with documented school-based field experience are required to complete 30 credits hours (10 courses). 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 24 credit hours (8 courses).

506 Graduate

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 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.

The following courses represent the Research Core Subjects.

- EDUC 511 - Foundations of Educational Research (3 cr.)
- EDUC 512 - Methods of Educational Research (3 cr.)

Concentrations

Each student will select one of the following concentrations: Pre-K-12 Teacher Education, Educational Leadership, or International Education Policy & Planning. In consultation with their advisor, students may take one of the courses in another concentration to fulfill the elective requirement.

1. Pre-K—12 Teachers

- EDUC 561 - Comparative Approaches to Learning and Teaching (3 cr.)
- EDUC 571 - Classroom Discourse Analysis for Learners and Teachers (3 cr.)
- EDUC 581 - Issues in Comparative Education for Classroom Teachers (3 cr.)
- EDUC 590 - MA Capstone (Thesis or Equivalent; Practicum for IEPP)
- EDUC 595 - Supervised Fieldwork (3 cr.)

2. Educational Leaders

- EDUC 563 - Comparative Approaches to Curriculum & Instruction (3 cr.)
- EDUC 573 - School-based Instructional Supervision (3 cr.)
- EDUC 583 - Issues in Comparative Education for Educational Leaders (3 cr.)
- EDUC 590 - MA Capstone (Thesis or Equivalent; Practicum for IEPP)
- EDUC 595 - Supervised Fieldwork (3 cr.)

3. International Education Policy & Planning

- EDUC 565 - International Education and Development (3 cr.)
- EDUC 575 - Educational Policy Analysis (3 cr.)
- EDUC 585 - Issues in Comparative Education for Policy Planners (3 cr.)
- EDUC 590 - MA Capstone (Thesis or Equivalent; Practicum for IEPP)
- EDUC 595 - Supervised Fieldwork (3 cr.)

International & Comparative Education 507

Capstone

Each Student will complete a capstone research project, which could be a thesis, action research, Internship or equivalent professional activity. Every project requires a written research component that integrates international or comparative education. The capstone is expected to be prepared under the guidance and close supervision of a faculty adviser, in consultation with designated committee. Each student will also give a formal oral presentation of the work. (3 cr.)

International and Comparative Education Courses (EDUC)

EDUC 511 Foundations of Educational Research (3 cr.)

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.

EDUC 512 Methods of Educational Research (3 cr.)

Prerequisites: EDUC 511.

This course will extend the knowledge acquired by students in the EDU 511 course by providing them with an understanding of quantitative, qualitative and mixed method research in education, including research design, methods of data collection and analysis, reporting and interpreting results and drawing conclusions. Students will also learn about data handling in qualitative settings, as well as research in a variety of applied educational contexts. Preparation of a proposal for the program's capstone thesis project is the main outcome of this course.

EDUC 513 Qualitative & Mixed Methods in Educational Research (3 cr.)

Pre-requisites: EDUC 511 and EDUC 521.

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 research in a variety of applied educational contexts as well as data handling in qualitative settings. This course must be taken by MA candidates whose Capstone project will require qualitative or mixed methods research.

EDUC 521 Social Foundations of Education (3 cr.)

This course is a prerequisite for all other courses.

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.

EDUC 531 Introduction to International & Comparative Education (3 cr.)

Pre-requisites: EDUC 511 and EDUC 521.

508 Graduate

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, including the purposes of schooling, educational access and opportunity, education accountability and authority, teacher professionalism, and impact of globalization on education. The course also explores the relationship between education and national development, and deepens student's understanding of methodological approaches to comparative and international education research.

EDUC 535 Educational Evaluation & Assessment (3 cr.)

Pre-requisites: EDUC 511 and EDUC 521.

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.

EDUC 541 Human Development & Learning Theories for Classroom Teachers (3 cr.)

The MA candidates enrolled in the Pre-K—12 Teacher Education concentration will learn about human growth and development from infancy through adolescence, so that they will understand the capabilities and needs of their students. Emphasis will be placed on the integration of various developmental domains (including cognitive, linguistic, social/emotional, and 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.

EDUC 543 Foundations of Educational Psychology for Educational Leaders (3 cr.)

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.

EDUC 545 Psychological Foundations of Education for Policy Planners (3 cr.)

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 551 Foundations of Instructional Practice for Classroom Teachers (3 cr.)

In this course, MA candidates enrolled in the Pre-K—12 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.

International & Comparative Education 509

EDUC 553 Fundamentals of Instruction Management for Educational Leaders (3 cr.)

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.

EDUC 555 Classroom Instruction for Policy Planners (3 cr.)

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.

EDUC 561 Comparative Approaches to Learning and Teaching (3 cr.)

Pre-requisites: EDUC 511 and EDUC 521.

This course introduces MA students enrolled in the Pre-K—12 Teacher Education concentration to different learning and teaching approaches in a range of settings. It will provide students with opportunities to compare and contrast these approaches, discuss possibilities and limitations associated with these approaches, and explore the consequent and profound differences in learning outcomes, so as to inform students' individual and collective ways of understanding learning and teaching processes. Out-of-school, community-based resources will also be explored.

EDUC 563 Comparative Approaches to Curriculum & Instruction (3 cr.)

Pre-requisites: EDUC 511 and EDUC 521.

This course introduces MA students enrolled in the Educational leadership concentration to the process of planning, development, and evaluation of curriculum and instruction. It focuses on theoretical assumptions that support existing curriculum models and instructional leadership styles in different countries. This course provides students with opportunities to investigate, analyze, and derive a basic framework that is relevant to their particular context. The focus will be on comprehensive curriculum planning, development and evaluation, and supervision of instruction.

EDUC 565 International Education and Development (3 cr.)

Pre-requisites: EDUC 511 and EDUC 521.

Education systems throughout the world face a number of challenges, among the most important being access, equity and quality. Using a comparative approach, this course will help MA students enrolled in the International Education Policy & Planning concentration develop their awareness and knowledge of issues and solutions related to these challenges, by examining problems faced by educational systems in several countries, particularly those in low resource contexts, and solutions proposed and/or implemented by those systems.

EDUC 571 Classroom Discourse Analysis for Learners and Teachers (3 cr.)

Pre-requisites: Completion of Core Courses.

MA students in the Pre-K—12 concentration will learn about different approaches to the analysis of discourse in various classroom settings, including principles, practices,

510 Graduate

terminology, and theoretical underpinnings. They will select and apply one approach to an actual classroom situation by designing a study, collecting and analyzing data, reporting on results, and interpreting their findings.

EDUC 573 School-based Instructional Supervision (3 cr.)

Pre-requisites: Completion of Core Courses.

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 helps MA students enrolled in the Educational Leadership concentration understand how supervision theory has evolved, so that they will be able to develop their own systematic approach to effective supervision. A practicum will be included.

EDUC 575 Educational Policy Analysis (3 cr.)

Pre-requisites: Completion of Core Courses.

This course explores the policy cycle and contextual factors that influence decisions, by enabling and refining student's analytic skills. Topics will include the analysis of how policy is created; the ideal and actual forms of the policy cycle; how to create sustainable feedback systems; how to use appropriate analytic approaches to the study of data; and how to use appropriate analytic techniques to analyze policy choices.

EDUC 581 Issues in Comparative Education for Classroom Teachers (3 cr.)

Pre-requisites: Completion of Core Courses.

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.

EDUC 583 Issues in Comparative Education for Educational Leaders (3 cr.)

Pre-requisites: Completion of Core Courses.

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.

EDUC 585 Issues in Comparative Education for Policy Planners (3 cr.)

Pre-requisites: Completion of Core Courses.

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

International & Comparative Education 511

reform in developing countries.

EDUC 590 MA Capstone (Thesis or Equivalent; Practicum for IEPP) (3 cr.)

Pre-requisites: EDUC 511 and EDUC 521.

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 course covers two semesters and 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.

EDUC 595 Supervised Fieldwork (3 cr.)

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.

512 Graduate

Journalism & Mass Communication

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

Professor Emeritus: A. Schleifer

Professor: H. Amin (Chair)

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, D. Ashmawi, F. Al-Atraqchi, S. Fahmy, K. Fox

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 communications 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.

Journalism & Mass Communication 513

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 world around them. Applicants may also be required to sit for a personal interview.

Admission Checklist:

- 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.)

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.

514 Graduate

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.

Journalism & Mass Communication 515

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 and 410 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).

516 Graduate

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.

Journalism & Mass Communication Courses (JRMC)

JRMC 500 Mass Communication Theory and Literature (3 cr.)

Offered in fall.

Survey of mass communication theory and the philosophical, sociological and political effects of mass media on audiences and societies.

JRMC 501 Advanced Reporting and Writing (3 cr.)

Prerequisites: appropriate professional experience or undergraduate coursework (JRMC 201 and JRMC 301 or equivalent). Offered in fall.

Intensive reporting, research, and writing of in-depth articles for magazines and newspapers with intent to publish.

JRMC 502 Current Issues in Mass Communication (3 cr.)

Offered in spring.

Overview of major issues in mass communication and how they impact audiences and society.

JRMC 504 Research Methods in Mass Communication (3 cr.)

Offered in fall.

Introduction to scientific method and mass media research methods: field surveys, quantitative and qualitative research.

JRMC 506 Internship (3 cr.)

Offered occasionally.

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.

JRMC 537 TV News Gathering and Script Writing (3 cr.)

Prerequisites: JRMC 201 and 410.

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.

JRMC 538 Arabic TV Script Writing (3 cr.)

Prerequisites: JRMC 537.

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

Journalism & Mass Communication 517

skills of Arabic TV reporting.

Non-Arab students may substitute an elective with approval of the director.

JRMC 539 TV Presentation and Voice Coaching (3 cr.)

Prerequisite: JRMC 537.

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.

JRMC 540 Reporting Civil Society (3 cr.)

Prerequisites: JRMC 501 and JRMC 571. Offered in fall.

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.

JRMC 541 Digital Camera Production (3 cr.)

Prerequisites: JRMC 410.

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.

JRMC 542 Digital Video Editing (3 cr.)

Prerequisites: JRMC 410 and 541.

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).

JRMC 545 Broadcast News Intensive I (3 cr.)

Prerequisites: JRMC 537, 541 and 542. Offered in fall.

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.

JRMC 546 Broadcast News Intensive II (3 cr.)

Prerequisites: JRMC 545. Offered in spring.

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.

518 Graduate

JRMC 550 Seminar in International Communication (3 cr.)

Offered in fall.

World news communication systems, including news-gathering agencies; the role of foreign correspondents, the foreign press, information flow, propaganda and comparative press laws.

JRMC 559 TV Interviewing & Talk Show Hosting (3 cr.)

Prerequisites: Appropriate professional experience or undergraduate coursework (JRMC 201 JRMC 301 or equivalent).

Theory and intensive practice in TV skills of interviewing guests on one-on-one bases as well as hosting talk shows.

JRMC 560 Seminar on Electronic Journalism and Arab Society (3 cr.)

Offered in spring.

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.

JRMC 570 Seminar in Mass Communication and National Development (3 cr.)

Offered in spring.

The role of mass communication in developing nations and its relationship to economic growth, education, socialization, persuasion, and diffusion of innovation.

JRMC 571 Digital Journalism (3 cr.)

Offered in spring.

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.

JRMC 580 Impact of Television: Issues and Developments (3 cr.)

Offered in spring.

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."

JRMC 588 Comprehensives (no cr.)

Offered in fall and spring.

Individual consultation for students preparing for the comprehensive examination.

JRMC 590 Special Topics (3 cr.)

Offered occasionally.

Content varies with the instructor. Can be repeated once for credit if content changes.

JRMC 599 Research Guidance and Thesis (no cr.)

Offered in fall and spring. Consultation with students as they prepare their theses.

Law

**Department of Law
School of Global Affairs and Public Policy**

Professor Emeritus: E. Hill

Associate Professors: A. Shalakany, O. Korhonen (on leave)

Assistant Professors: N. Badawi, J. Beckett, A. Lorite (on leave), T. Monforte, U. Natarajan, G. Parolin, H. Sayed (Chair), T. Skouteris (Director of LL.M.)

Instructor: D. Van Bogaert

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.

520 Graduate

Admission

The applicant for admission to the the LL.M degree must have a first degree in Law 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 proficiency is required as demonstrated on the TOEFL test. Admitted degree candidates should normally start their course sequence in the fall semester. If students are enrolled in the AUC English Language Institute (ELI), they cannot begin study in the Law Department until any ELI coursework is completed.

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 are required:

- 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 Requirement

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 in International and Comparative Law

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 must have a first degree in Law 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 proficiency is required as demonstrated on the TOEFL test. Admitted degree candidates should normally start their course sequence in the fall semester. If students are enrolled in the AUC English Language Institute (ELI), they cannot begin study in the Law Department until any ELI coursework is completed.

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.

Master of Arts in International Human Rights Law

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

522 Graduate

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), and an overall grade of gayyid giddan 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. Admitted degree candidates should normally start their course sequence in the fall semester. If students are enrolled in the AUC English Language Institute (ELI), they cannot begin study in the Law Department until any ELI coursework is completed.

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.

Graduate Diploma in International Human Rights Law

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 graduate 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), and an overall grade of gayyid giddan 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. Admitted degree candidates should normally start their course sequence in the fall semester. If students are enrolled in the AUC English Language Institute (ELI), they cannot begin study in the Law Department until any ELI coursework is completed.

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.

LAW Courses (LAW)

LAW 500 Legal Research and Writing (3 cr.)

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.

524 Graduate

LAW 501 Jurisprudence (3 cr.)

Prerequisite: LAW 500 (prerequisites can be waived by special permission of the Law department).

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.

LAW 502 Comparative Law (3 cr.)

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.

LAW 503 Law and Economic Development (3 cr.)

Exploration of the relationship between different strategies of economic development and legal reforms in the public and private spheres from a comparative law perspective.

LAW 504 European Union Law (3 cr.)

Same as EUST 504. Prerequisites: LAW 502 or 509 (Prerequisites can be waived by special permission of the Law department).

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.

LAW 505 Islamic Law Reform (3 cr.)

Prerequisites: LAW 502 or 509 (Prerequisites can be waived by special permission of the Law department).

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.

LAW 506 Egyptian Legal History (3 cr.)

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.

LAW 507 The Law and Practice of the Settlement of International Disputes Between States (3 cr.)

Prerequisites: LAW 509 and 510 (prerequisites can be waived by special permission of the Law Department).

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.

LAW 508 International Criminal Law (3 cr.)

Prerequisites: LAW 509 and LAW 510 (prerequisites can be waived by special permission of the Law Department).

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.

LAW 509 International Law (3 cr.)

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.

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

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).

LAW 511 International Humanitarian Law (3 cr.)

Prerequisites: LAW 509 and LAW 510 (prerequisites can be waived by special permission of the Law Department).

This course provides basic introduction to the field of international humanitarian law (IHL), otherwise known as the laws of war, the law of 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.

526 Graduate

LAW 512 Human Rights and the United Nations (3 cr.)

Prerequisites: LAW 509 and 510. (Prerequisites: can be waived by special permission of the Law department).

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.

LAW 513 The European System of Human Rights Protection (3 cr.)

Same as EUST 513. Prerequisites: LAW 509 and 510. (Prerequisites can be waived by special permission of the Law department).

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.

LAW 514 Human Rights in the Middle East (3 cr.)

Prerequisites: LAW 509 and 510. (Prerequisites: can be waived by permission of the department).

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.

LAW 515 Comparative Constitutional Law and Human Rights (3 cr.)

Prerequisites: LAW 509 and 510 (Prerequisites can be waived by special permission of the Law department).

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.

LAW 516 Economic, Social, and Cultural Rights (3 cr.)

Prerequisites: LAW 509 and 510. (Prerequisites: can be waived by special permission of the Law department).

Consideration of the historical development of the recognition of economic, social and cultural rights together with present covenants 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.

LAW 517 Human Rights and Identity Groups (3 cr.)

Prerequisites: LAW 509 and 510. (Prerequisites: can be waived by special permission of the Law department).

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.

LAW 518 International Refugee Law (3 cr.)

Same as MRS 518. Prerequisites: LAW 509 and 510. (Prerequisites: can be waived by special permission of the Law department).

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.

LAW 519 Human Rights in Africa (3 cr.)

Prerequisites: LAW 509 and 510 (Prerequisites: may be waived by permission of the department)

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.

LAW 520 Justice: Histories and Theories (3 cr.)

Same as GWST 502.

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, appendixes 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.

LAW 522 International Economic and Trade Law (3 cr.)

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.

LAW 523 International Commercial Arbitration (3 cr.)

Prerequisites: LAW 502 or 509 (Prerequisites can be waived by special permission of the Law department).

528 Graduate

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.

LAW 524 Comparative Corporate Governance (3 cr.)

Prerequisites: LAW 502.

Comparison of how select questions of corporate governance, control, and finance are regulated under American, French, German, and Egyptian corporate law.

LAW 525 Securities Regulation Law (3 cr.)

Prerequisites: LAW 502.

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.

LAW 526 Antitrust Law (3 cr.)

Prerequisites: LAW 502 (Prerequisites can be waived by special permission of the Law department).

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.

LAW 527 Graduate Law Seminar (3 cr.)

Prerequisites: Permission of the Department. Prerequisites: can be waived by special permission of the Law Department.

Reading, discussion and intensive writing about theory and methodology in law, political theory, and relevant social sciences. This course is a pre-requisite to the Thesis requirement for all students in the LL.M. in International and Comparative Law, and MA in International Human Rights Law. The course targets students who have completed at least nine credits hours toward the degree.

LAW 570 Special Topics in Comparative Law (up to 3 cr.)

Prerequisites: Permission of the Department. Prerequisites: can be waived by special permission of the Law Department.

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 covered. May be taken more than once for credit if content changes.

LAW 571 Special Topics in International Law (up to 3 cr.)

Prerequisites: Permission of the Department. Prerequisites: can be waived by special permission of the Law Department.

May be taken more than once for credit if content changes.

LAW 572 Special Topics in Public Law (up to 3 cr.)

Prerequisites: Permission of the Department. Prerequisites: can be waived by special permission of the Law Department.

May be taken more than once for credit if content changes.

LAW 575 Special Topics in International Human Rights Law (3 cr.)

Prerequisites: consent of the instructor.

Specialized areas of International Human Rights Law. May be taken a second time for credit if content changes.

LAW 584 Human Rights in Practice (3 cr.)

Prerequisites: consent of the instructor.

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.

LAW 585 Legal Practice (3 cr.)

Prerequisite: Consent of the instructor.

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.

LAW 586 Independent Study

Prerequisites: Consent of the instructor and approval of the Degree Program Director

Guided individual reading and/or research on a subject of mutual interest to the student and the faculty member.

LAW 599 Research Guidance/Thesis (no cr., graded)

Prerequisites: Permission of the Department.

530 Graduate

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: I. Hegazy, D. Rateb, E. Tooma, A. Awni, I. Azzam, Kh. Soliman.

Assistant Professors: A. Basiouny, S. Formancek, J. Fouad, M. Mourad, I. Seoudi, H. Shamma, A. Tolba, G. Williams, J. Kafafi, C. Wishart, N. Becheikh, M. El Barkouky, N. Ahmed, A. Ismail (Abdul Latif Jameel Chair of Entrepreneurship)

Professor of Practice: K. O'Connell (Willard W. Brown Chair of International Business Leadership)

Participating Faculty: A. Kais

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.

Management 531

- 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

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.)

532 Graduate

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 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.)

Management 533

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

534 Graduate

area (12 credit hours)

CENG 530 - Contracts in Construction Industry (3 cr.) **
 CENG 531 - Construction Management (3 cr.)
 CENG 532 - Planning, Scheduling and Control (3 cr.)*
 CENG 533 - Management for Multi-National Environments (3 cr.) *
 CENG 534 - Risk Management and Bidding Strategies (3 cr.) *
 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.)

* *Not open for AUC students in construction engineering students with a concentration in Construction Management.*

** *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.*

MBA Capstone Course (3 credits)

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

MGMT 508 - Strategic Management (3 cr.)

Master of Science in Finance

The M.Sc. 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)

Management 535

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.)

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.)

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.)

536 Graduate

Accounting (ACCT)

ACCT 501 Financial Reporting and Analysis (3 cr.)

Offered in fall and spring.

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.

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

Prerequisites: ACCT 501. Offered in fall and spring.

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.

Finance (FINC)

FINC 512 Options and Derivatives (3 cr.)

This course covers a list of advanced topics in derivative securities. It assumes that students have taken an introductory course in derivatives as well as an introduction to fixed-income markets. The first part of the course develops numerical techniques which are used to implement pricing methodologies. The techniques are applied to exotic options and real options. The second part of the course develops term structure models and options based on fixed income securities.

FINC 513 Fixed Income Securities (3 cr.)

This is a course on fixed-income securities and related derivatives. It covers basic analytical tools in fixed-income markets. Topics include relative pricing of fixed-income securities, forward rates, yield-to-maturity, yield-curve trading strategies and immunization techniques. It also discusses term structure models, fixed-income securities with embedded options, and derivatives with fixed-income underlying securities. Instruments to be discussed are forward rate agreements, bond and interest rate futures, interest rate swaps, fixed-income options, mortgage-backed securities, and credit derivatives. The course emphasizes analytical techniques, rather than institutional details.

FINC 514 Financial Risk Analysis (3 cr.)

This course deals with the ways in which risks are quantified and managed by financial institutions. Among the topics covered are the nature of financial institutions and their regulation, market risk, credit risk, operational risk, liquidity risk, and the credit crisis of 2007.

FINC 515 Portfolio Management (3 cr.)

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.

FINC 516 Real Estate Finance (3 cr.)

The course introduces main elements of real estate Finance. It begins with a comprehensive introduction of mortgage from the perspective of capital market investors. The mortgage basics are then used in investment analysis of income producing properties. The public debt and equity are introduced in the third part of this course.

FINC 517 Financial Modeling (3 cr.)

The course shows how to learn 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) The Excel Solver for Optimization, (2) RISK for Monte Carlo Simulation, (3) Precision Tree for Decision Tree analysis, (4) The GAMS algebraic modeling language.

FINC 527 Managerial Economics (3 cr.)

This course aims at applying economic principles to managerial decision making. The course covers topics such as demand, costs and market structure and their relation to pricing, product choice and resource allocation. This course also covers Macroeconomic topics such as saving, investment and the rate of interest; the theory of inflation; and economic growth.

FINC 540 Financial Management (3 cr.)

Prerequisites: ACCT 501. Offered in fall and spring.

It is a basic business finance course, dealing with various aspects of financial decision making. It provides an introduction to time value of money; bond and stock valuation; ratio analysis; financing decisions; capital budgeting; cost of capital; capital structure; risk and return; dividend policy; operating and financial leverage; and working capital management.

FINC 541 Investments (3 cr.)

Prerequisites: FINC 540. Offered in spring.

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.

FINC 542 International Financial Markets (3 cr.)

Prerequisites: FINC 540. Offered in fall.

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.

538 Graduate

FINC 543 Financial Institutions and Markets (3 cr.)

Prerequisites: FINC 540. Offered occasionally.

The course focuses on financial markets, its institutions, instruments, and major governing regulations. Topics such as the function and role of financial markets in the economy, money and capital markets equilibrium, interest rate analysis, major financial institutions, fund raising instruments, and risk management instruments are emphasized.

FINC 544 Corporate Financial Policy (3 cr.)

Prerequisites: FINC 541. Offered in fall.

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.

FINC 545 Private Equity and Venture Capital (3 cr.)

Prerequisites: FINC 540. Offered occasionally.

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.

FINC 546 Financial Analysis, Planning and Valuation (3 cr.)

Same as ACCT 503. Prerequisites: FINC 540. Offered occasionally.

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.

FINC 570 Selected Topics in Financial Management (3 cr.)

Prerequisites: consent of the instructor. Offered occasionally.

It considers selected topics of current relevance in Financial Management.

FINC 575 Independent Study in Financial Management (1-3 cr.)

Prerequisites: Consent of FINC unit head and chair. Offered occasionally.

Guided readings, research, and discussions on specific selected topic in Financial Management.

FINC 590 Research Methodology (1 cr.)

FINC 599 Thesis (6 cr.)

Management (MGMT)

MGMT 501 Business Communication (3 cr.)

Offered in fall and spring.

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.

MGMT 502 Managing in a Dynamic Environment (3 cr.)

Offered in fall and spring.

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.

MGMT 503 Leading Change in Organizations (3 cr.)

Prerequisites: Consent of instructor. Offered in fall.

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.

MGMT 504 Human Capital Strategy (3 cr.)

Offered in spring.

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.

MGMT 505 Organizational Design (3 cr.)

Prerequisites: MGMT 502 or equivalent. Offered occasionally.

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.

MGMT 506 Management of International Business Organizations (3 cr.)

Offered occasionally.

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.

540 Graduate

MGMT 507 Global Business Strategy (3 cr.)

Prerequisites: MGMT 506 or consent of instructor. Offered occasionally.

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.

MGMT 508 Strategic Management (3 cr.)

Prerequisite: Consent of instructor. Offered in fall and spring.

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.

MGMT 509 Leadership (3 cr.)

Prerequisite: MGMT 502. Offered occasionally.

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.

MGMT 510 Entrepreneurship and Innovation (3 cr.)

Same as EENG 573.

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.

MGMT 511 Strategic management of innovation (3 cr.)

Same as EENG 572.

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

Management 541

determinants: innovation leadership, managerial levers and business processes. The course will examine the impact of accelerating innovation on cost, product quality and marketability; organizational changes required to couple R&D with marketing and commercialization; and the managerial skills and professional expertise needed to develop a sustainable innovation practice within an organization.

MGMT 517 Technology and Innovation Management

Same as MOIS 517. Prerequisites: Core requirements met and consent of instructor.

This is a case based course drawing on best practices in industry and the most up to date and important general management technology and innovation management academic material. Students should be prepared to discuss major technology issues covered in the readings each class. This course is designed to develop strong technology management skills to help managers make good decisions in regard to technology strategy and implementation of technology within their firms. This course is designed to develop general managers with strong abilities to lead in various technological environments and manage the innovation process and projects across and within their own function effectively.

MGMT 570 Selected Topics in Management (3 cr.)

Prerequisites: consent of the instructor. Offered occasionally.

It considers selected topics of current relevance in Management.

MGMT 575 Independent Study in Management (1-3 cr.)

Prerequisites: Consent of MGMT unit head and chair. Offered occasionally.

Guided readings, research, and discussions on specific selected topic in Management.

Management of Information Technology (MOIS)

MOIS 508 Information Systems in Organizations: Management in the Information Age (3 cr.)

Offered in fall and spring.

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.

MOIS 517 Technology and Innovation Management (3 cr.)

Same as MGMT 517. Prerequisites: Core requirements met and consent of instructor.

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.

542 Graduate

MOIS 549 Systems Analysis, Design, and Implementation (3 cr.)

Prerequisites: MOIS 508. Offered in fall and spring.

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.

MOIS 550 Information Technology (3 cr.)

Prerequisites: MOIS 508. Offered occasionally.

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.

MOIS 551 Electronic Business: Doing Business in the Digital Economy (3 cr.)

Prerequisites: MOIS 508 and MOIS 550. Offered occasionally.

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.

MOIS 555 Information Strategy (3 cr.)

Prerequisites: MOIS 508 and MOIS 550. Offered occasionally.

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.

MOIS 570 Advanced Topics (Next Generation Technologies) (3 cr.)

Prerequisites: Consent of instructor. Offered occasionally.

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.

MOIS 575 Independent Research in Management of Information Systems/Technology (1-3 cr.)

Prerequisites: Consent of MOIS unit head and Director of MBA Program. Offered occasionally.

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.

Marketing (MKTG)

MKTG 520 Marketing Management (3 cr.)

Offered in fall and spring.

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.

MKTG 521 Marketing Research Methods (3 cr.)

Prerequisites: MKTG 520. Offered occasionally.

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.

MKTG 522 Marketing Channel Strategies (3 cr.)

Prerequisites: MKTG 520. Offered Occasionally.

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.

MKTG 523 Sales Force Management (3 cr.)

Prerequisites: MKTG 520. Offered occasionally.

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.

544 Graduate

MKTG 524 Global Marketing (3 cr.)

Prerequisites: MKTG 520. Offered occasionally.

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.

MKTG 530 Strategic Marketing (3 cr.)

Prerequisites: MKTG 520. Offered occasionally.

The course addresses the relationship of marketing to environmental forces and other business functions. Principal topics include resource allocation, market entry/exit decisions, and competitive analysis. The course stresses on the analysis, planning, and implementation issues marketing managers encounter when they develop market strategies in competitive environments. This is done by case analysis of marketing problems and examining current developments in marketing practice. Topics include a focused review of competitor analysis, buyer analysis, market segmentation, and assessing business competitive advantages. Product portfolio issues are identified and marketing strategies developed, assessed and implemented.

MKTG 526 Integrated Marketing Communication (3 cr.)

Prerequisites: MKTG 520. Offered occasionally.

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.

MKTG 570 Contemporary Topics in Marketing (3 cr.)

Prerequisites: Consent of the instructor. Offered occasionally.

Recent topics in marketing.

MKTG 575 Independent Study in Contemporary Topics in Marketing (1-3 cr.)

Prerequisites: Consent of MKTG unit head and Director of MBA Program. Offered occasionally.

Readings and research on recent topics in marketing

Operations Management (OPMG)

OPMG 507 Introduction to Business Statistics (3 cr.)

Offered in fall and spring.

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

OPMG 520 Operations Management for Competitive Advantage (3 cr.)

Prerequisites: OPMG 507. Offered in fall and spring.

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.

OPMG 521 Managing and Coordinating Supply Chains (3 cr.)

Prerequisites: OPMG 520. Offered occasionally.

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.

OPMG 528 Managing Dynamic Projects (3 cr.)

Prerequisites: OPMG 520. Offered occasionally.

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.

OPMG 530 Data Analysis (3 cr.)

Prerequisites: OPMG 520. Offered occasionally.

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.

546 Graduate

OPMG 531 Stochastic Models in Managerial Decision Making (3 cr.)

Prerequisites: OPMG 520. Offered occasionally.

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).

OPMG 532 Operations Strategy (3 cr.)

Prerequisites: OPMG 520. Offered occasionally.

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.

OPMG 533 Business Dynamics (3 cr.)

Prerequisites: OPMG 520. Offered occasionally.

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.

OPMG 570 Selected Topics in Operations Management (3 cr.)

Prerequisites: consent of the instructor. Offered occasionally.

It considers selected topics of current relevance in Operations Management.

OPMG 575 Independent Study in Operations Management (1-3 cr.)

Prerequisites: Consent of OPMG unit head and chair. Offered occasionally.

Guided readings, research, and discussions on specific selected topic in Production/Operation Management.

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

Master of Science in Mechanical Engineering

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

548 Graduate

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.)

Mechanical Engineering 549

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.

Master of Engineering Degree in Mechanical Engineering

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:

550 Graduate

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.

Mechanical Engineering Courses (MENG)

MENG 517 Engineering Systems Analysis and Design (3 cr.)

Introduction, system design process, system modelling and optimization, design for operational feasibility, artificial intelligence and expert systems, applications.

MENG 521 Advanced Topics in Mechanical Behavior of Engineering Materials (3 cr.)

Advanced Topics in Mechanical Behavior of Engineering Materials (minor change in course content) Parameters affecting the mechanical behavior of materials under stresses. Strengthening mechanisms in metals and alloys. High-temperature and room temperature deformation. Effect of residual stresses. Mechanisms of cyclic deformation. Structural properties of polymers and composites. Emphasizes the relationships between micro and nanoscopic mechanisms and macroscopic behavior of materials. Case studies using industrially available materials.

MENG 522 Materials in Design and Manufacturing (3 cr.)

Interrelationship of design, materials and manufacturing. Control of material properties to meet design and manufacturing requirements. Thermo-mechanical processing, surface treatment and coatings. Composite materials. Reverse engineering and materials substitution. Materials recycling. Economic considerations and life cycle costing. Case studies.

MENG 523 Physical Metallurgy (3 cr.)

Relationships between mechanical behavior, composition, microstructure, and processing variables. Imperfections in materials and their effect on properties. Diffusion in solids and its industrial applications. Effect of heat treatment on the microstructure and mechanical behavior for ferrous and non-ferrous alloys. Design of new materials: meso, micro and nanostructured materials, their synthesis and applications.

Mechanical Engineering 551

MENG 524 Electronic Phenomena in Solids (3 cr.)

Same as NANO 502.

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.

MENG 525 Deformation and Fracture of Materials (3 cr.)

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.

MENG 526 Computer Methods in Materials Engineering (3 cr.)

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.

MENG 527 Composite Materials: Mechanics, Manufacturing, and Design (3 cr.)

Composite materials, including naturally occurring substances such as wood and bone, and engineered materials from concrete to fiber and dispersion reinforced matrices. Development of micromechanical models for a variety of constitutive laws and the link between processing, property and composite structural analysis. Fabrication and processing techniques of composites; dispersion of reinforcements; interfacial adhesion; mechanical and functional properties, design and applications.

MENG 528 Advanced Testing and Characterization Techniques (3 cr.)

Same as NANO 503.

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.

MENG 529 Failure Analysis and Prevention (3 cr.)

Failure analysis methodology and techniques including fractography, metallography, and mechanical testing. Causes of failure in service including manufacturing defects, design deficiencies, environmental effects, overloads. Fail safe designs. Case studies in failure analysis.

MENG 530 Nanomaterials: Synthesis, Properties and Applications (3 cr.)

Same as MENG 429 and NANO 531. Offered in spring.

The course provides a comprehensive introduction to nanomaterials, their synthesis, properties, processing techniques and applications. The coverage ranges from isolated clusters

552 Graduate

and small particles to nanostructured materials, multilayers and consolidated bulk products, thin films and coatings. Their chemical mechanical, optical and magnetic properties.

MENG 531 Fabrication of Nanomaterials For Films And Devices (3 cr.)

Same as NANO 504.

Offered in occasionally.

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.

MENG 532 Simulation and Modeling for Nanoscale Materials and Systems (3 cr.)

Same as NANO 502.

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.

MENG 534 Materials for Energy Conversion and Storage (3 cr.)

Same as NANO 533.

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.

MENG 535 Biomaterials (3 cr.)

Same as NANO 630.

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.

MENG 541 Integrated Manufacturing Systems (3 cr.)

Computer aided manufacturing, automation, flexible manufacturing systems, numerical control machines, computerized process planning, information systems in a plant, selection of automated systems.

MENG 542 Total Quality Management (3 cr.)

Product quality and losses to society, loss function, product life cycle, design for quality, quality deployment charts, customer needs, process design planning and control, continuous quality improvement, quality circles.

MENG 543 Systems Modeling and Optimization (3 cr.)

Modeling of large scale industrial problems, theory of optimization, software performance

Mechanical Engineering 553

evaluation, simulation of complex industrial systems, input/output analysis, model validation, overview of simulation languages, manufacturing systems case studies.

MENG 545 Production Systems Design (3 cr.)

Production planning, workforce and line balancing capacity planning and expansions, optimal sequencing and scheduling, measures of effectiveness of operating systems, computer applications, applied case studies.

MENG 548 Facilities Planning and Design (3 cr.)

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.

MENG 553 Advanced Computer Aided Design (3 cr.)

Homogeneous Coordinates and Cartesian Coordinates. Explicit and Implicit Representations of Lines, Planes, Surfaces and Intersections. Surface Modeling: Bezier, B-Spline and NURBS surfaces. Curve and Surface Fitting and Approximation. Solid Modeling: Constructive Solid Modeling, and Boundary Representation. Shading and Rendering. Homogeneous perspective, stereographic projections and virtual reality. Introduction to Shape and Topology Optimization.

MENG 554 Advanced Stress Analysis in Design and Manufacturing (3 cr.)

Differential and integral formulations of elastic problems: equilibrium, continuity, generalized material relations, boundary conditions. Applications to two dimensional problems, plates and shells. Yield criteria and inelastic stress-strain relations. Limit analysis. Inelastic design. Simplified techniques for large deformation problems: energy approach, slab method, and upper bound solutions, numerical techniques.

MENG 555 Analysis and Design of Dynamic Systems (3 cr.)

Introduction to systems concepts. Modeling of lumped elements and systems. Solution methods for transient and steady state behavior. Design and synthesis of mechanical networks. Automatic controls. Compensation and design of control systems. Digital control systems.

MENG 557 Engineering Design Methodologies (3 cr.)

Conceptual design: levels, generic concepts, main and subconcepts. The preliminary design stage. Design for reliability. Design optimization. Examples and a case study.

MENG 558 Applied Finite Element Analysis for Engineers (3 cr.)

Advanced modeling techniques. Material, geometric and boundary condition nonlinearities. Application to elastoplasticity, creep and buckling. Time response dynamic analysis, nonlinear heat transfer. Projects involving extensive utilization of FEM packages on engineering workstations.

MENG 560 Applied Control, Vibration and Instrumentations (3 cr.)

Prerequisites: Instructor Consent.

Feedback control systems and role of sensors. Process modelling and identification. Linear system response in time domain, Routh-Horwitz stability criteria. PID controllers design and implementations. Root locus: analysis, design, lead/lag compensators. Frequency response methods and analysis. Vibrations of multi-degree-of-freedom and continuous systems, introduction

554 Graduate

to finite element vibrations analysis, response to periodic and arbitrary inputs, passive and active vibration control, applied vibration measurement and analysis. Sensors: characteristics, physical properties and usage. Industrial automation and sensors. Measurement and uncertainty. Study of various techniques for sensor integration. Common instrumentation networks. Remote instrumentation for monitoring and control. Future prospect of instrumentations and intelligence.

MENG 561 Robotics: Kinematics, Dynamics and Control (3 cr.)

Same as RCSS 501. Prerequisites: Instructor Consent.

Robot mechanisms, End-effector mechanisms, Actuators and drives, Sensors. Robot forward and inverse kinematics. Differential motion and Jacobian (Velocities and forces). Simulation software and analysis. Acceleration and Inertia, Robot dynamics. Trajectory generation and control of robot manipulators. Robot planning and control. Task oriented control, Force compliance control. Robot programming, Robot work cell design and work cycle analysis. Robot vision, Teleoperation and Interactive haptics. Closed-Loop Kinematic chains, Parallel-link robot kinematics. Non-holonomic systems, Legged robots.

MENG 562 Embedded Real Time Systems (3 cr.)

Same as RCSS 502. Prerequisites: Instructor Consent.

Fundamentals of embedded control system design, embedded processor architecture and operation. General overview of existing families of micro-controllers, DSPs, FPGAs, ASICs. Selected embedded 8/16/32 processor architectures, and programming. Real-time, resources and management, I/O, Virtual memory and memory management. Concurrency, resource sharing and deadlocks. Scheduling theory. Real-time programming and embedded software. Real-time kernels and operating systems. Bus structure and Interfacing. Programming pervasive and ubiquitous embedded system. Designing embedded system. Discretization and implementation of continuous-time control systems. Networked embedded systems and integrated control.

MENG 563 Modern Control Design (3 cr.)

Same as RCSS 503. Prerequisites: Instructor Consent.

Basic linear system response: Analysis in time domain, stability analysis, Routh-Horwitz stability criteria of LTI. Feedback analysis and design continuous-time systems on the basis of root locus: analysis, design, lead/lag compensators, and Control synthesis in frequency domain: (Bode response, Nyquist stability criteria, sensitivity and design). Control design concepts for linear multivariable systems using state variable techniques. State space representation and transition matrices. Control system design in state space: controllability, pole method and pole placement design, observer/observability and compensators design. Optimal observer based feedback. Lyapunov Stability. The solutions to LQR problem, Kalman filtering problem. LQG and LTR based design methods. Discrete-time systems and computer control.

MENG 564 Intelligent and Autonomous Robotic Systems (3 cr.)

Same as RCSS 521. Prerequisites: Instructor Consent.

Autonomous and Mobile robots, Locomotion concepts and mechanisms, Degrees of mobility and steering. Non holonomic concept and constraint. Wheeled mobile robots: Kinematic and dynamic models. Trajectory generation and Control methods. Sensors, sensor models and perception. Mapping and knowledge representations. Control architectures and Navigation: Planning, Subsumption, Potential field, Motor Schemas, Probabilistic, Learning from observations and Reinforcement learning. Relative and absolute localization. Navigation and localization techniques. SLAM (Simultaneous Localization and Mapping). Multi robotic system: navigation,

Mechanical Engineering 555

cooperation and autonomy.

MENG 573 Cogeneration and Energy Storage (3 cr.)

Prerequisites: B.Sc. level Mechanical engineering courses in Thermodynamics, Heat transfer, Fluid mechanics and applications, or equivalent.

Introduction to cogeneration; cogeneration technologies; issues and applications; introduction to energy storage; types; applications in renewable energy and conventional systems; economic analysis.

MENG 575 CFD and Turbulence Modeling (3 cr.)

Prerequisites: Undergraduate level knowledge of i) fluid properties, fluid flows with and without friction, duct flows, Bernouli's equation and continuity equation; heat and mass transfer. ii) numerical analysis including solution of sets of algebraic linear equations, and P.D.E.s employing F.D.; programming in MATLAB or any other language.

Introduction to CFD, basic equations of Flow, FV method, SIMPLE algorithm and variants. Turbulence modeling. Introduction to PHOENICS/FLUENT code, application to case studies.

MENG 580 Independent Study in Engineering (3 cr.)

Independent study in various problem areas of engineering may be assigned to individual students or to groups. Readings assigned and frequent consultations held.

Students may sign for up to 3 credits towards fulfilling M. Sc. requirements.

MENG 592 Advanced Topics in Engineering (3 cr.)

Prerequisite: consent of instructor. May be taken for credit more than once if content changes. Topics to be chosen every year according to specific interests.

MENG 593 Capstone Project (3 cr.)

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.

MENG 599 Research Guidance Thesis (3 cr.)

Consultation on problems related to student thesis.

Must be taken twice for credit.

556 Graduate

Middle East Studies

Middle East Studies Program School of Global Affairs and Public Policy

Director: R. Saad

Middle East Studies is an 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. Students must take the two required courses and either eight additional courses and sit for the comprehensive exam or six additional courses and submit a thesis.

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

In addition to normal university requirements in English, students must demonstrate proficiency in Modern Standard Arabic:

An Arabic level equivalent to 2.5 on the US Foreign Service Institute examination is required for MA students. Proficiency is tested by an examination administered by the Arabic Language Institute. Students who have no background in Arabic must enroll in the summer intensive course (20 contact hours a week, 12 credits) of the Arabic Language Unit before beginning their MA program.

Middle East Studies 557

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/HIST 542 - Seminar on the Nineteenth-Century Middle East (3 cr.)
- 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 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

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

558 Graduate

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/HIST 543 - Seminar on the Twentieth-Century Middle East (3 cr.)
- 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.

Middle East Studies Courses (MEST)

MEST 505 Palestinian Refugee Issues (3 cr.)

Same as MRS 505.

This inter-disciplinary course will be an opportunity for students to engage directly with the major practical and theoretical issues connected with Palestinian refugees, critically assessing the historical, political, legal and ideological forces that have shaped their turbulent circumstances.

MEST 569 A Critical Introduction to Middle East Studies (3 cr.)

Offered in fall.

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.

MEST 570 Interdisciplinary Seminar in Middle East Studies (3 cr.)

Prerequisites: completion of 24 credit hours toward the degree or consent of program director.

Middle East Studies 559

Offered in spring.

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.

MEST 580 Selected Topics (3 cr.)

Offered only occasionally.

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.

MEST 582 Independent Study and Readings (3 cr.)

Prerequisites: completion of one semester and Program approval required. Offered in fall and spring.

Guided individual readings and/or research on a subject of mutual interest to the student and faculty member.

MEST 588 Comprehensives (no cr.)

Offered in fall and spring.

Individual consultation for students preparing for the comprehensive examination.

MEST 598 Research Methods (3 cr.)

A seminar designed to help students formulate and execute an MA thesis proposal.

MEST 599 Thesis (no cr.)

Offered in fall and spring.

560 Graduate

Migration and Refugee Studies

Center for Migration and Refugee Studies
School of Global Affairs and Public Policy

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 in Migration and Refugee Studies

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.

Migration & Refugee Studies 561

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.

All students must take:

- 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.

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

562 Graduate

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.

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

Migration & Refugee Studies 563

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.

564 Graduate

Migration and Refugee Studies Courses (MRS)

MRS 500 Migration & Refugee Movements in the Middle East and North Africa (3 cr.)

Offered in fall.

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.

MRS 501 International Migration & Development (3 cr.)

The course provides an overview of recent literature and debates concerned with the relationships between migration and development. Migration and development are related issues. On the one hand, development is a determinant of migration. International differentials in development, mainly economic (labor, income and capital-related), but also political (state and society-related), will be reviewed. These elements apply at the sending end as push factors (underemployment and unemployment; poverty; poor access to welfare; low rewards to skills; poor governance, political or civil instability, etc.) and at the receiving end as pull factors (jobs availability; higher incomes; social security; higher education; networks of previous migrants; etc.). On the other hand, migration has an impact on development. International mobility of workers and their family members can work for, or against, development. Debates on the impact of development include the following:

Destination Countries:

Considering whether migrant workers compete with or complement local labor? Do they reduce or increase average incomes/wages? Contribute to or drain host country welfare services?

Origin Countries:

While migrant remittances provide for better housing, education and health of families left behind, their impact on the local and national economy is much debated. Do they boost production or imports? Do they create employment or deter entry into the local labour market? Do they lead to sustainable patterns of development? Do they further the access to credit of local communities and migrants themselves? To what extent do migrants establish businesses as a result of their earnings abroad? To what extent do governments foster development along with migrant communities and host countries with migration-induced development through confidence building, infrastructure and skills training? Under what conditions does migration of skills result in a brain drain or a brain gain for sending countries? In both sending and receiving countries, different patterns of migration: circular, return, temporary, permanent, regular/irregular may have different impacts on development.

MRS 502 Comparative Migration Policies (3 cr.)

Countries at both ends of the migration process develop migration policies that govern a

Migration & Refugee Studies 565

variety of issue areas. In countries of destination, migrants essentially contribute to economic activity. Therefore, their policies address issues such as demand for migrant workers, admission criteria, recognition of skills, non-discrimination and integration of migrant workers and their families, curbing irregular migration, border control and patrolling sea lanes, the role of business and trade union and international cooperation. Countries of origin are mainly concerned with releasing pressures over their labor markets, the protection of migrants, their welfare, maximizing the contributions of migrants to development through financial remittances and their productive use, effective return migration policies, migration statistics, and international cooperation. The course will examine how a selected number of countries of origin and destination formulated and implemented policies in the respective areas of concern to the two sets of countries.

MRS 503 Migrants & Refugees in International Relations (3 cr.)

This course attends to the fundamental role of migrants and refugees in the formation and preservation of the nation-state order; explores historical and contemporary migration patterns within, into, and out of Europe in order to examine the effects of population movements on the nation-state itself; and explores the ways in which contemporary migration and refugee movements question the foundations of the modern nation-state system, posing challenges to the theory and practice of international relations.

MRS 504 Gender and Migration (3 cr.)

GWST 504.

This seminar provides an in depth engagement with the growing subfield 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.

MRS 505 Palestinian Refugee Issues (3 cr.)

Same as MEST 505.

This inter-disciplinary course will be an opportunity for students to engage directly with the major practical and theoretical issues connected with Palestinian refugees, critically assessing the historical, political, legal and ideological forces that have shaped their turbulent circumstances.

MRS 507 Introduction to Forced Migration and Refugee Studies (3 cr.)

Same as SOC 507. Offered in the fall.

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.

MRS 508 Special Topics in Migration and Refugee Studies (3 cr.)

Same as SOC/ANTH 508.

Topics discussed vary every semester and depends on the instructor. The topic of the course will be announced prior to registration.

566 Graduate

MRS 512 Psychosocial Issues in Forced Migrants (3 cr.)

Same as PSYC 412/512. Offered in the spring

The course explores the psychosocial dimensions of forced migration including ethno-cultural concepts of wellbeing, 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.

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 (3 cr.)

Same as LAW 518. Offered in the fall.

This course considers the dynamics between the legal rights of forced migrants and the privilege of states to grant asylum.

MRS 576 Methods of Research with Forced Migrants & Refugees: Issues in Forced Migration (3 cr.)

Same as SOC 576. Offered in the spring.

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 firsthand experience in understanding the benefits as well as the problems and limitations of research in the field.

MRS 584 Practicum: Internship or Research (3 cr.)

Prerequisites: Permission of Advisor.

Internship for four to six months in an organization working with migrants/refugees or active involvement on an institutional research project that examines elements of population movements. The work is assessed on the basis of a written report and discussions with faculty advisor.

MRS 599 Research Guidance and Thesis (3 cr.)

Offered in fall and spring.

Supervision in the writing of the thesis.

NANOTECHNOLOGY

School of Science and Engineering

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 and Associate Dean for Graduate Studies and Research), Rania Siam (BIOT program director), Magdi Nasrallah (PENG Chair), Mohab Anis (EENG), Mohamed N. Abou-Zeid (CENG Chair), Sherif Sedky (PYSC and YJSTRC director)

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.

Admission

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.

568 Graduate

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

II. Nanotechnology Elective courses (at least 12 credit hours)

A minimum of 12 credit hours are required from this list of courses

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 (3cr.)
 NANO 552-Nanotechnology in Studying Damage and Failure in Structures (3cr.)
 NANO 561-Advanced Solid-State Devices (3cr.)
 NANO 562-Advanced Integrated Circuit Design (3cr.)
 NANO 571-Bionanotechnology (3 cr.)
 NANO 592-Selected Topics in Nanotechnology (3 cr.)

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.

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 Seminar I (2 cr.)

NANO 591-Graduate Thesis Seminar II (1 cr.)
NANO 599-Research Guidance Thesis (3 cr. + 3 cr.)

Nanotechnology Courses (NANO)

NANO 501 Advanced Quantum Mechanics: (3 cr.)

Same as PHYS 521. Prerequisite: PHYS 421.

This course introduces fundamental concepts of quantum mechanics. Applications are made to quantum computing, the harmonic oscillator, the hydrogen atom, electron spin and addition of angular momentum. The course also covers qualitative and approximation methods in quantum mechanics, including time-independent and time-dependent perturbation theory, scattering and semiclassical methods. Applications are made to atomic, molecular and solid matter. Systems of identical particles will be treated including many electron atoms and the Fermi gas.

NANO 502 Simulation and Modeling for Nanoscale Materials and Systems (3 cr.)

Same as MENG 524.

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.

NANO 503 Advanced Testing and Characterization Techniques (3 cr.)

Same as MENG 528.

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.

NANO 504 Fabrication of Nanomaterials For Films And Devices (3cr.)

Same as MENG 531.

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.

NANO 505 Nanochemistry (3 cr.)

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).

570 Graduate

NANO 506 Management and Economics of Nanotechnology (3 cr.)

The course will discuss various aspects of management and economics of nanotechnology. It would include: (1) Nanotechnology's role in society and particularly within a fast changing world. (2) Nanotechnology is the next big driver of wealth creation within corporations and countries. (3) Product and Production Nanotechnologies, (4) Enhancing creativity and managing innovation in the context of nanotechnology. (5) Nanotechnology Life Cycles (The Curves of Technological Progress, Nanotechnology & Market Interactions and Products & Process Life Cycles).

NANO 521 MEMS/NEMS Technology and Devices (3 cr.)

Same as PHYS 556 and RCSS 542.

Prerequisite: NANO 504.

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.

NANO 522 Electronic Transport in Semiconductors (3 cr.)

Same as PHYS 521.

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.

NANO 531 Nanomaterials, Synthesis, Processing and Applications (3 cr.)

Same as MENG 429 and 530.

This course provides a comprehensive introduction to nanomaterials, their synthesis, properties, processing techniques and applications. The coverage ranges from isolated clusters and small particles to nanostructured materials, multilayer and consolidated bulk products, thin film and coatings. Their chemical, mechanical, optical and magnetic properties.

NANO 532 Nanocomposite Science and Technology (3 cr.)

This course is designed to provide fundamental understanding of emerging nanocomposite materials science and technology. The topical areas to discuss include synthesis of various nanoscale reinforcements, such as nanowires, nanotubes, and inorganic nanoparticles; fabrication and processing techniques of nanocomposites; dispersion of nanoreinforcements; interfacial adhesion; mechanical and functional properties of nanocomposites including gas/moisture barrier characteristics, electrical and magnetic properties, thermal properties and flame retardancy; molecular dynamic simulations; design and applications of nanocomposites.

NANO 533 Materials for Energy Conversion and Storage (3 cr.)

Same as MENG 534.

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.

NANO 541 The Chemistry of Nanostructures (3 cr.)

Prerequisite: NANO 505.

This course addresses the synthesis and chemical properties of the different categories of nanostructures such as carbon NANOUbes/nanorods/ etc..., fullerenes, colloids, Self-assembled monolayer structures (SAMs), dendrimers and other macromolecules, oxide and inorganic nanotubes/fibers/rods/etc. For each category examples of applications would be giving to demonstrate the applicability of the properties discussed.

NANO 542 Nanoelectrochemistry (3 cr.)

Prerequisite: NANO 505.

This course addresses the fundamentals of electrochemistry, and their application to the synthesis of nanostructures, together with applications (e.g. sensors, fuel cells, batteries, electrolysis, photovoltaic cells, reduction of carbon dioxide, environmental remediation, water disinfection, ect...). Characterization and analysis techniques would also be addressed.

NANO 551 Nanotechnology Applications in Construction Materials (3 cr.)

This course covers the use of nanotechnology in studying the particle shape, size and composition of conventional and advanced construction materials on a sub micro level. The correlation between the nano level characteristics and the mechanical properties as well as the durability of the materials is studied. Composition and arrangement of crystalline structures and chemical composition of materials are examined to yield materials of superior properties.

NANO 552 Nanotechnology in Studying Damage and Failure in Structures (3 cr.)

The course employs nanotechnology to study submicro cracks, flaws and damage indications in structures through examining the materials used. The course aims at providing early prediction of the life time of structures and nano-based prediction of the damage patters and hence around decision on repair intervention and the technique used.

NANO 561 Advanced Solid-State Devices (3 cr.)

Same as EENG 510.

Prerequisites: Graduate standing in engineering and physics. Electromagnetics, vector algebra, differential equations, and MATLAB programming.

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.

NANO 562 Advanced Integrated Circuit Design (3cr.)

Same as EENG 518

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

572 Graduate

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.

NANO 571 Bionanotechnology (3 cr.)

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.

NANO 590 Graduate Seminars I (2 cr.)

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.

NANO 591 Graduate Seminar II (1 cr.)

Prerequisites: NANO 590

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.

NANO 592 Selected Topics in Nanotechnology (3 cr.)

Prerequisites: consent of the faculty advisor

Topics to be chosen every year according to specific interests. Maybe taken for credit more than once if content changes.

NANO 599 Research Guidance Thesis (3 cr.)

Prerequisites: NANO 590

Consultation on problems related to student thesis.

Must be taken at least twice for credit.

Physics

Department of Physics
School of Sciences and Engineering

Professors: S. Arafa, F. Assabghy, H. Omar, S. El-Sheikh (Associate Chair), S. Sedky (Associate Dean of Graduate Studies and Director of Science & Technology Research Center), A. Shaarawi (Dean of Graduate Studies)

Associate Professors: E. Abdel-Rahman (Chair), A. El Fiqi (Vice President for Student Affairs), E. Soliman, A. Awad

Assistant Professors: K. Addas, A. Ibrahim, M. Swillam, N. Allam, A. Galal

Master of Science in Physics

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 6 credit hours of core courses, 12 credit hours chosen from the concentration courses, and 6 credit hours of physics electives.

Core Courses (6 credit hours)

PHYS 529 - Computational Physics (3 cr.)

PHYS 550 - Advanced Materials and Techniques (3 cr.)

Concentration Courses (12 credit hours)

To be chosen from the following courses, after consultation with advisor:

PHYS 503 - Introduction To Solids (3 cr.)

574 Graduate

PHYS 505 - Mathematical Physics (3 cr.)
 PHYS 511 - Advanced Thermodynamics and Statistical Mechanics (3 cr.)
 PHYS 513 - Theory of Solids (3 cr.)
 PHYS 521 - Advanced Quantum Mechanics (3 cr.)
 PHYS 522 - Classical Electrodynamics (3 cr.)

Physics electives (6 credit hours)

To be chosen from the following courses:

PHYS 526 - Electronic Transport in Semiconductor (3 cr.)
 PHYS 547 - Classical Mechanics (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.)

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.)

Graduate Diploma in Physics

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.

Physics Courses (PHYS)

PHYS 503 Introduction To Solids (3 cr.)

Prerequisites: PHYS 325 or equivalent. Offered in fall.

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.

PHYS 505 Mathematical Physics (3 cr.)

Prerequisites: MACT 305 or equivalent. Offered in fall.

Vector analysis; coordinate systems; tensor analysis; determinants, matrices and group theory; infinite series, functions of a complex variable: conformal mapping and calculus of residues; partial differential equations of theoretical physics, non homogeneous equations-Green's function; Fourier and Laplace transforms; Gamma, Bessel and Legendre functions; integral equations; calculus of variations; numerical methods for data treatment. Linear and metric spaces. Hilbert spaces.

PHYS 511 Advanced Thermodynamics and Statistical Mechanics (3 cr.)

Prerequisites: PHYS 311 or CHEM 400 or equivalent. Offered in spring.

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; cluster expansions; phase transitions and critical phenomena.

PHYS 513 Theory of Solids (3 cr.)

Prerequisites: PHYS 325 or equivalent. Offered in spring.

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, nonlinear optics, luminescence.

PHYS 521 Advanced Quantum Mechanics (3 cr.)

Same as NANO 501. Prerequisites: PHYS 421 or equivalent. Offered in fall and spring.

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.

PHYS 522 Classical Electrodynamics (3 cr.)

Prerequisites: PHYS 316 and PHYS 505. Offered in spring.

Boundary value problems in electrostatics: Poisson and Laplace equations; Formal solution of electrostatic boundary value problem with Green function; applications in rectangular,

576 Graduate

spherical and cylindrical coordinates. Multipoles, Electrostatics of macroscopic media, dielectrics and Magnetostatics. Time-varying fields, Maxwell equations, Conservation laws for macroscopic media. Magnetohydrodynamics and Plasma Physics. Relativistic formulation of electrodynamics. Lagrangian and Hamiltonian of a relativistic charged particle in external EM fields. Radiation by moving charges and radiation scattering. Lagrangian for the EM field. Invariant Green functions.

PHYS 526 Electronic Transport in Semiconductor (3 cr.)

Prerequisites: PHYS 215 and 325 or equivalent. Offered in fall.

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.

PHYS 529 Computational Physics (3 cr.)

Prerequisites: MACT 233, MACT 304 or consent of instructor. Offered in fall.

Numerical methods for quadrature solution of integral and differential equations, and linear algebra. Use of computation and computer graphics to simulate the behavior of complex physical systems. Monte Carlo simulations.

PHYS 547 Classical Mechanics (3 cr.)

Prerequisites: PHYS 312 or equivalent. Offered in fall.

This course provides a formal introduction to classical mechanics. The course covers several topics such as: Survey of the elementary principles, variational principles, conservation theorems and symmetry properties, the central force problem, rigid body motion and rotation, small oscillations, Hamiltonian formalism of classical mechanics, canonical transformation.

PHYS 549 Passive Microwave Circuits (3 cr.)

Prerequisites: PHYS 316 or equivalent. Offered in spring.

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 directional couplers, Microstrip antenna elements and arrays, Electromagnetic simulation of different microwave circuits, Optimization of microwave circuits.

PHYS 550 Advanced Materials and Techniques (3 cr.)

Prerequisites: PHYS 322L and PHYS 323L. Offered in spring.

An integrated laboratory course teaching students modern preparative solid state techniques (e.g. Sol-Gel method, Bridgman technique) and how to tailor the properties and performance of a material by modifications of its stoichiometry, the amount of doping, and the structural aspects. Students will prepare samples of materials with current interest (e.g.

glasses, complex oxides, sinter ceramics, certain important single crystals, electronic materials, etc.). The structure, possible phase transitions, and their influence on materials properties are examined by advanced techniques (e.g. optical and electron microscopy, X-ray diffraction, TGA, DSC). The applicability of the materials for magnetic, electronic, and optical purposes will also be investigated. Emphasis is laid on studying new materials and on materials design for the environment.

PHYS 556 MEMS/NEMS Technology and Devices (3 cr.)

Same as NANO 521 and RCSS 542. Prerequisites: PHYS 215 and consent of instructor. Offered in spring.

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.

PHYS 561 Independent Studies (1-3 cr.)

Prerequisites: Consent of supervisor, graduate standing.

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.

Maximum of 3 credit of independent studies can be used towards the M. Sc. degree in physics.

PHYS 590 Graduate Seminar I (1 cr.)

Prerequisites: Seminars of research topics given by invited speakers. The student must register for this course prior to submitting a thesis topic. Offered in fall.

PHYS 591 Graduate Seminar II (1 cr.)

Prerequisites: PHYS 590. Offered in spring.

Presentations and discussions of results obtained by the graduate students during research work.

PHYS 599 Research Guidance and Thesis (3 cr. + 3 cr.)

Thesis consultation for qualified students. Two semesters are required, with credit being given each time.

578 Graduate

Political Science

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: I. El Nur, S. El-Musa, M. Kassem, J. Maswood, E. Fishere

Assistant Professors: C. Davidson, R. El Mahdi, S. Soliman, H. Albrecht, S. Mc-Mahon, R. Bahi, N. Sika, R. Parfitt

Master of Arts in Political Science

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; 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.

Professional Development

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. 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. 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*

580 Graduate

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.)

Political Science 581

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 Professional Development

A specialization in 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.

LL.M. in International and Comparative Law

See Law

582 Graduate

Graduate Diploma in Political Science

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.

Political Science Courses (POLS)

POLS 501 Comparative Theory (3 cr.)

Prerequisites: graduate standing.

An examination of the field of Comparative Politics and major relevant theories, approaches to research, and analysis. Required of all students in the Comparative Politics Specialization.

POLS 502 Scope and Method of Developmental Analysis (3 cr.)

Offered in fall and spring.

A critical review of the theories, models, and methodologies relevant to the study of political development, especially in the Third World.

POLS 503 International Relations Theory (3 cr.)

Offered in fall and spring.

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.

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

Same as POLS 404.

This course seeks to provide students with a critical understanding of political science methods, the ability to read statistical materials, and to use some 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.

POLS 505 Identity, Culture and Norms in World Politics (3 cr.)

Offered in Spring.

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.

POLS 510 Global Governance and World Order(s) (3 cr.)

Offered in Fall.

This course explores the ideas, institutions and practices of global governance, multilateralism and world order. A range of theoretical frameworks and case studies examine the role of social forces, state and non-state actors, issues such as cooperation and regulation, discourses of imperialism and institutional mechanisms in the current world order.

POLS 520 Protracted Social Conflicts (3 cr.)

Protracted social conflicts (PSCs) are endemic conflicts based on horizontal inequalities such as ethnicity, religion, race and gender. This course will examine how PSCs affect development priorities, the distribution of income and services, etc; which exacerbates unequal access to economic resources and benefits, which in turn intensifies hatred and conflict on non-class demarcation lines.

POLS 526 The Political Economy of Regionalism (3 cr.)

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.

POLS 525 International Political Economy (3 cr.)

Offered in fall.

Patterns of the evolution, organization and functioning of the global political economy including the role of states and other international actors; theory and practice of international regimes and global issues of the third millennium.

POLS 530 Regime Change and Democratization (3 cr.)

Prerequisites: POLS 501.

The course addresses the academic debate on authoritarianism, regime change, and democratization in theoretical and empirical perspective. Conceptual approaches include regime type analysis, theories of democratic transition and consolidation, and hybrid regimes. Empirical cases compare developments in different world regimes.

POLS 534 Middle East Conflicts (3 cr.)

Offered in Fall

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.

POLS 535 Middle East Politics (3 cr.)

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

584 Graduate

system. The course will focus on state formation, national identities, leadership, elites and the impact of the west.

POLS 536 Contemporary Issues in Political Islam (3 cr.)

This course is designed to examine current intellectual, economic, political, and foreign policy issues in political Islam. Among the topics that will be analyzed are political Islam and the challenges modernity,; secularism; the Islamic state; democracy and pluralism; human rights; women; Islamic economic system; and globalization.

POLS 540 Politics of Modern Egypt (3 cr.)

This course offers an in-depth analysis of the nature and dynamics of modern Egyptian politics. Assessments of the Nasser, Sadat and Mubarak presidencies are followed by a treatment of the major issues and themes confronting and shaping Egypt's contemporary political arena.

POLS 544 European Politics (3 cr.)

Considers the governance structures, processes, and patterns of politics in major states, institutions of the EU, and international organizations.

POLS 545 Politics and Development (3 cr.)

Offered occasionally.

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.

POLS 550 Politics In Asia (3 cr.)

Offered occasionally.

The general aim of this course is to acquaint the student with an overall historic view of contemporary Asian politics, in an evolving international political and economic environment. The course is divided into two parts: (I) an introduction to the continent, and to Comparative Politics; and (II) five case studies, most of them covering more than one country, which will be thought alternatively, according to the availability of lecturers, 2-3 cases studies per semester.

POLS 551 African International Relations (3 cr.)

Offered occasionally.

Political and economic dimensions of African international relations, particularly as they relate to development. Analysis of state actors, regional and international organizations, multinationals, and liberation movements and their relationships. Intra-African and foreign relations of African states.

POLS 552 Arab-American Relations (3 cr.)

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.

Political Science 585

POLS 554 Comparative Foreign Policy: Theories and Applications (3 cr.)

Offered in spring.

Patterns of the international system are greatly shaped by the strategies, objectives, and decisions of states, i.e. their foreign policies. Consequently, this course deals with the sources, processes and outcomes of these policies and how far they shape the global arena.

POLS 555 Strategic Theory (3 cr.)

Offered in fall.

This course will focus on theories of statecraft especially those in which force and/or the threat of force is an important element; special attention will be given to such classical theorists as Sun Tzu and Clausewitz as well as contemporary writers.

POLS 558 Comparative Politics and the Middle East (3 cr.)

Prerequisites: POLS 501 or 502 and 535 or 540.

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.

POLS 561 Public Policy and Development (3 cr.)

Prerequisites: ECON 201 and POLS 535 or 502.

Public policymaking considered within contexts of current policy debates. Historical perspectives emphasized, as well as the effects of the globalization of trade, rise of multinationals, and the parameters of effective policy making at national and sub-national levels.

POLS 562 International Development Organizations (3 cr.)

Prerequisites: POLS 502.

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.

POLS 570 Special Topics in Political Science (3 cr.)

Offered in fall and spring.

Alternating selected Topics to be investigated and reported. May be taken more than once if content changes.

POLS 571 Seminar: Special Topics in International Relations (3 cr.)

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. May be taken more than once if content changes.

POLS 580 Independent Study and Readings (3 cr.)

Prerequisites: Department approval. Offered in fall and spring.

Guided individual readings and/or research on a subject of mutual interest to student and faculty member. May be taken only once.

586 Graduate

POLS 584 Practicum: Internship or Research (3 cr.)

Prerequisites: At least eighteen of master's degree work, or adviser's permission.

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.

POLS 585 Project Seminar (3 cr.)

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.

POLS 586 Skills in Development Practice (3 cr.)

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.

POLS 599 Research Guidance and Thesis (no cr.)

Psychology

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

Professor Emeritus: O. Farrag

Assistant Professors: M. Amer, H. Henry, A. Justus, K. Moore, B. Settlage

Core Curriculum Teaching Fellow: A. Carrillo

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.

Master 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:

588 Graduate

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.)

Master 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

Psychology 589

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.)

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

590 Graduate

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. Practicum

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.)

Graduate Diploma in Family Counseling

A Diploma offers students who desire practitioner training within one year an essential opportunity for higher education.

Psychology 591

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.)

592 Graduate

Psychology Courses (PSYC)

PSYC 500 Fundamentals of Counseling (3 cr.)

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.

PSYC 502 Community Psychology and Systems Theory (3 cr.)

This course examines the core theories, values, and methodologies of community psychology and systems theory.

PSYC 503 International and Multicultural Psychology (3 cr.)

This course is an overview of the mainstream as well as alternative theoretical, methodological, and applied approaches that are relevant to the study and practice of psychology. Specifically, the course will provide students with knowledge, awareness, and skills in international and cultural issues related to the field of psychology.

PSYC 504 Advanced Human Growth and Development (3 cr.)

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.

PSYC 505 Ethics and Professional Issues (3 cr.)

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

PSYC 506 Psychopathology and Resilience across Cultures (3 cr.)

This course is an overview of contemporary views on psychopathology and resilience from a multicultural perspective. The course will cover key processes influencing mental health across cultures such as belief systems and communication interaction as well as ways to cultivate resilience.

PSYC 508 Applied Research Design and Statistical Analysis (3 cr.)

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.

PSYC 510 Counseling: Models and Methods (3 cr.)

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.

PSYC 515 Counseling Assessment: International Perspectives (3 cr.)

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.

PSYC 520 Psychology in the Schools (3 cr.)

This course will focus on prevention-oriented community and environmental interventions in school settings. General topics areas addressed are: assessment, consultation, intervention, special education, research, reform movement in education, multiculturalism, and diversity, and the future of education and school psychology.

PSYC 525 Consultation to non-Profit Organizations (3 cr.)

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 nonprofit settings, such as nongovernmental organizations (NGOs).

PSYC 530 Community Assessment and Program Evaluation (3 cr.)

This course will cover readings explicating concepts in, and providing examples of, ecological needs assessments and program evaluation.

PSYC 535 Prevention and Intervention in Communities (3 cr.)

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.

PSYC 540 Community and Group Interventions (3 cr.)

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.

PSYC 545 Seminar in Cross-Cultural Family Studies (3 cr.)

This course will expose students to contemporary issues affecting families in a global context from a systemic/ecological perspective. Issues of diversity and cross-cultural interactions will be integrated throughout the course, with an emphasis on the Arab/Middle Eastern experience.

PSYC 550 Couples Counseling and Human Sexuality (3 cr.)

The course will focus on theories and methods of effective counseling with couples. The course will also cover the influence of socio-cultural factors on couples' relationships. The human sexuality portion of the course will address issues such as sexual development across life span, sexual attitudes, sexual dysfunction, sexual assault, commercial sex and sex therapy.

PSYC 551 Arabic for Mental Health Professionals (0 cr.)

This course is an overview of basic Arabic phrases that can help mental health professionals in their clinical interventions with Arab-speaking clients.

PSYC 552 Professional Development Seminar (0 cr.)

This course is an overview of topics that can enhance professional success of graduate students.

PSYC 570 Special Topics in Psychology (3 cr.)

Prerequisites: Approval of advisor. Offered Occasionally.

594 Graduate

In-depth examination of a specific topic in psychology of current theoretical, research, or clinical interest. Topics will vary depending on instructor. May be repeated for credit if content changes.

PSYC 575 Independent Study and Guided Readings (1-3 cr.)

Prerequisites: Minimum 3.0 GPA, consent of instructor, and approval of graduate advisor. Offered occasionally

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.

PSYC 580 Practicum I in Counseling Psychology (3 cr.)

Prerequisites: PSYC 500, 502, 504, 505, 510, 515 and approval of advisor.

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.

PSYC 581 Practicum II in Counseling Psychology (3 cr.)

Prerequisites: PSYC 500, 502, 504, 505, 510, 515 and approval of advisor.

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.

PSYC 586 Practicum I in Community Psychology (3 cr.)

Prerequisites: Approval of Advisor.

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.

PSYC 587 Practicum II in Community Psychology (3 cr.)

Prerequisite: Approval of Advisor.

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.

PSYC 589 Professional Portfolio (1 cr.)

Prerequisite: Approval of Advisor.

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,

Psychology 595

and HIV prevention. The portfolio includes a written paper and may be based on case studies, clinical work, or research.

PSYC 590 Internship in Counseling Psychology (3 cr. + 3 cr.)

Prerequisite: Completion of PSYC 506, 508, 540, 550, 580 and 581.

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.

PSYC 596 Internship in Community Psychology (1-4 cr.)

Prerequisite: Approval of Advisor.

This course provides students with applied fieldwork experience in community psychology during an academic year-long field internship. Students are placed at NGOs, community agencies, or private or public institutions as interns with an approved external supervisor at the site. In addition, students meet regularly with a psychology faculty member for individual and group supervision.

PSYC 599 Research Guidance and Thesis (3 cr.)

Prerequisites: Approval of advisor.

Supervision in the preparation and writing of the Masters thesis. May be repeated for credit.

596 Graduate

Public Policy and Administration

Department of Public Policy and Administration School of Global Affairs and Public Policy

Professors: L. El-Baradei (Associate Dean of School of Global Affairs and Public Policy), A. Hamzawy, T. Dolan

Associate Professor: J. Bremer (Chair)

Visiting Associate Professor: Kh. Amin

Assistant Professors: H. Ali, G. Barsoum, W. Bowman

Professors of the Practice: I. Awad, M. Shahin

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.

Master of Public Administration (MPA)

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

Public Policy & Administration 597

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.)

598 Graduate

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.)

Public Policy & Administration 599

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.

600 Graduate

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)

Public Policy & Administration 601

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

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.

602 Graduate

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.)
 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 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

Public Policy & Administration 603

Group 3 concentration course, if not taken as a core course (i.e., a course may be counted toward only one requirement). Students are encouraged to identify a technical specialization at the same time they declare their concentration.

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

604 Graduate

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.)

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

Public Policy & Administration 605

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.

Master of Global Affairs (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.

606 Graduate

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:

- PPAD 500 - Research Methods for Public Policy and Administration (3 cr.)
- LAW 509 - International Law (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.)

Public Policy & Administration 607

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.

Graduate Diploma in Public Administration

Program Requirements

The Diploma Program requires the completion of the MPA core requirement (18 credit hours), as described in the MPA program.

608 Graduate

Graduate Diploma in Public Policy

Program Requirements

The Diploma Program requires the completion of the MPP core requirement (18 credit hours), as described in the MPP program.

Public Policy and Administration Courses (PPAD)

PPAD 500 Research Methods for Public Policy and Administration (3 cr.)

Offered in spring.

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.

PPAD 501 Strategic Management for Government and Nonprofit Organizations (3 cr.)

Offered in spring.

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.

PPAD 502 Economics for Public Policy Analysis (3 cr.)

Offered in fall.

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.

PPAD 503 Role of Government in a Market-Oriented Economy (3 cr.)

Prerequisites: PPAD 502 or equivalent economic preparation. Offered in spring.

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.

Public Policy & Administration 609

PPAD 504 Essentials of Financial Planning and Management for Government and Nonprofit Organizations (3 cr.)

Offered in alternate years.

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.

PPAD 505 Institutions, Democratization, and Public Policy (3 cr.)

Offered in spring.

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.

PPAD 506 Essentials of Public Policy and Administration (3 cr.)

Offered in fall.

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).

PPAD 507 Government Finance for Policy Analysis (3 cr.)

Prerequisites: Completion of economics core or equivalent economics preparation. Offered in alternate years.

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.

PPAD 508 Qualitative Analysis for Policy and Administration (3 cr.)

Offered in fall.

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.

610 Graduate

PPAD 509 Applied Quantitative Analysis (3 cr.)

Offered in fall.

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.

PPAD 510 Organizational Behavior for Government and Nonprofit Management (3 cr.)

Offered in alternate years.

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.

PPAD 511 Administrative Environment and Public Policy in Egypt and the Middle East (3 cr.)

Offered in alternate years.

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.

PPAD 512 Management of Development Programs (3 cr.)

Offered in fall.

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.

PPAD 513 Comparative Public Governance (3 cr.)

Offered in alternate years.

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.

PPAD 514 Human Resource Management for Government and Nonprofit Organizations (3 cr.)

Offered in spring.

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

Public Policy & Administration 611

conditions of work.

PPAD 515 Public Policy Analysis and Program Evaluation (3 cr.)

Offered in spring.

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.

PPAD 516 Core Concepts and Applications for Social and Environmental Policy (3 cr.)

Offered in spring.

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.

PPAD 517 Non-profit Management (3 cr.)

Offered in spring.

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.

PPAD 518 Governance, Accountability, and Stakeholder Negotiations (3 cr.)

Offered in fall.

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.

PPAD 519 Leadership and Communication for Public Affairs (3 cr.)

Offered in alternate years.

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.

612 Graduate

PPAD 520 Global Health Issues and Policies (3 cr.)

Offered in alternate years.

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.

PPAD 521 Core Concepts and Applications for Government Regulation (3 cr.)

Offered in fall.

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.

PPAD 522 Core Concepts and Applications for Government Promotion of the Private Sector (3 cr.)

Offered in spring.

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.

PPAD 523 Citizen-centered government (3 cr.)

Offered in alternate years.

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.

PPAD 524 Globalization and Development (3 cr.)

Offered in alternate years.

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.

PPAD 525 Reforming Delivery of Social Services (3 cr.)

Offered in alternate years.

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.

PPAD 526 Corporate Social Responsibility and NGO Partnerships (3 cr.)

Offered in alternate years.

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.

PPAD 527 International Organization in Global Governance (3 cr.)

Offered spring.

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.

PPAD 528 International Negotiation: Theory and Practice (3 cr.)

Offered spring.

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.

PPAD 529 Issues in International Security (3 cr.)

Offered spring.

Exploration of strategies and techniques for managing potential and active conflicts at the national and international levels, including such traditional and new threats 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.

614 Graduate

PPAD 530 Conflict Management and Resolution (3 cr.)

Offered spring.

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.

PPAD 531 Armament, Arms Control and Disarmament (3 cr.)

Offered in alternate years.

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.

PPAD 532 Issues in regional security in the Middle East and Africa (3 cr.)

Offered in alternate years.

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.

PPAD 533 Cooperation for Development in the Multilateral System (3 cr.)

Offered in alternate years.

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.

PPAD 534 Comparative Bilateral Cooperation Policies for Development (3 cr.)

Offered in alternate years.

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.

PPAD 535 Multilateral Cooperation for Development at the Country Level: Issues and Practice (3 cr.)

Offered in alternate years.

This course is about the programs at the country level put in place by multilateral

Public Policy & Administration 615

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.

PPAD 570 Special Topics in Public Policy and Administration (1-3 cr.)

Prerequisites: Consent of the instructor and advisor. Offered occasionally.

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.

PPAD 575 Independent Study in Public Policy and Administration (1-3 cr.)

Guided readings, research, and discussions on specific selected topics in Public Policy and Administration

PPAD 590 Practicum (3 cr.)

Same as PPAD 490.

Prerequisite: Completion of at least 3 courses or approval of department and instructor. Offered in fall and spring.

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.

PPAD 598 Thesis Research Seminar (0 cr.)

Offered in fall and spring.

Prerequisites: Supervisor approval of a thesis proposal or permission of the supervisor and instructor.

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.

PPAD 599 Research Guidance and Thesis (no cr.)

Offered in fall and spring.

616 Graduate

Robotics, Control and Smart Systems

School of Science and Engineering

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 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.

Robotics, Control and Smart Systems 617

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,

618 Graduate

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.)

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

Robotics, Control and Smart Systems 619

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

620 Graduate

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.

Robotics, Control and Smart Systems Courses (RCSS)

RCSS 501 Robotics: Kinematics, Dynamics and Control (3 cr.)

Same as MENG 561.

Robot mechanisms, End-effector mechanisms, Actuators and drives, Sensors. Robot forward and inverse kinematics. Differential motion and Jacobian (Velocities and forces). Simulation software and analysis. Acceleration and Inertia, Robot dynamics. Trajectory generation and control of robot manipulators. Robot planning and control. Task oriented control, Force compliance control. Robot programming, Robot work cell design and work cycle analysis. Robot vision, Teleoperation and Interactive haptics. Closed-Loop Kinematic chains, Parallel-link robot kinematics. Non-holonomic systems, Legged robots.

RCSS 502 Embedded Real Time Systems (3 cr.)

Same as MENG 562.

Fundamentals of embedded control system design, embedded processor architecture and operation. General overview of existing families of micro-controllers, DSPs, FPGAs, ASICs. Selected embedded 8/16/32 processor architectures, and programming. Real-time, resources and management, I/O, Virtual memory and memory management. Concurrency, resource sharing and deadlocks. Scheduling theory. Real-time programming and embedded software. Real-time kernels and operating systems. Bus structure and Interfacing. Programming pervasive and ubiquitous embedded system. Designing embedded system. Discretization and implementation of continuous-time control systems. Networked embedded systems and integrated control.

RCSS 503 Modern Control Design (3 cr.)

Same as MENG 563.

Basic linear system response: Analysis in time domain, stability analysis, Routh-Horwitz stability criteria of LTI. Feedback analysis and design continuous-time systems on the basis of root locus: analysis, design, lead/lag compensators, and Control synthesis in frequency domain: (Bode response, Nyquist stability criteria, sensitivity and design). Control design concepts for linear multivariable systems using state variable techniques. State space representation and transition matrices. Control system design in state space: controllability, pole method and pole placement design, observer/observability and compensators design. Optimal observer based feedback. Lyapunov Stability. The solutions to LQR problem, Kalman filtering problem. LQG and LTR based design methods. Discrete-time systems and computer control.

RCSS 504 Applied Estimation (3 cr.)

Introduction to Probability, Probability theory, Bayes theorem, Bayesian Inference. Introduction to estimation. Linear Optimal Filters, Predictors, Smoothers, Nonlinear Filters. Kalman and Information filter, Continuous and Discrete Time Kalman Filter. Extended Kalman filter and implementation, Unscented Kalman Filter (UKF). Distributed Kalman filter over network. Particle filter, Rao-Blackwellized Particle Filter (RBPF). Particle filter Fast SLAM. Case Studies.

Robotics, Control and Smart Systems 621

RCSS 521 Intelligent and Autonomous Robotic Systems (3 cr.)

Same as MENG 564.

Autonomous and Mobile robots, Locomotion concepts and mechanisms, Degrees of mobility and steering. Non holonomic concept and constraint. Wheeled mobile robots: Kinematic and dynamic models. Trajectory generation and Control methods. Sensors, sensor models and perception. Mapping and knowledge representations. Control architectures and Navigation: Planning, Subsumption, Potential field, Motor Schemas, Probabilistic, Learning from observations and Reinforcement learning. Relative and absolute localization. Navigation and localization techniques. SLAM (Simultaneous Localization and Mapping). Multi robotic system: navigation, cooperation and autonomy.

RCSS 522 Mechatronics Innovations and Experimental Robotics (3 cr.)

Mechatronics innovations: Concepts and innovative ideas, design and hands-on experimentation. Sensors and intelligent sensor systems. Interfacing techniques. Controllers. Electrical motors: selection and control, encoders, and drivers. Power systems and control: pneumatic, electro-pneumatic, hydraulic and electro-hydraulic. Technologies and techniques associated with industrial and mobile robots. Joint space and operational space control. Velocity saturation, trajectory generation and tracking. Project work supporting design, simulation and experimentation.

RCSS 523 Bioinspired Robotics and Multi Robotic Systems (3 cr.)

Traditional and Biomimetic robots. Bioinspired robot design: actuators, sensors, and material. Bioinspired algorithms for robot control. Social Networks. Multi robotic systems (MRS): concept, homogeneous and heterogeneous architectures. MRS control architecture: MRS planning, Motor schema based MRS, Behavior based MRS. MRS and machine learning. Inter-robot communication and coordination. Auction-based task negotiation for MRS. Autonomy and cooperation. Task definition, decomposition and knowledge representation. Resource management and deadlocks. Collaborative Observation and Localization. Multi-Robot Navigation. Human-Robot Interaction. Biological inspired solutions: Ant colony and social insect behavior, Swarm intelligence and self organization.

RCSS 524 Robotics and Intelligent Automated Manufacturing (3 cr.)

Manufacturing systems: organization, facility layout, performance indicators. Robotics in Manufacturing. AGVs in Manufacturing. Robot work cells. Sensors in Manufacturing. Communication protocols. Agile manufacturing. Models and Metrics. Automation, NC/CNC. Design for Manufacturability. Manufacturing systems design: single cell, assembly line, group technology, cellular and flexible systems. Material transport and storage systems. Analysis of flow lines, assembly systems and line balancing. Quality measurement and reliability. Manufacturing support systems: CAD/CAM/CIM tools and product cycle, process and production planning, shop floor control, inventory control. Modern manufacturing systems: Push/pull systems, pull systems (KANBAN and CONWIP), Just-In-Time, TQM.

RCSS 531 Teleoperation, Haptic Systems and Collaborative Control (3 cr.)

Technical specifications: teleoperation and haptics systems. Haptics: Human, Machine, and Computer haptics, and their interrelation. Haptic systems: sensors, actuators and interfaces. Haptic device modeling and control. Event-based haptics. Rendering of stiff walls and friction, rigid-body and deformable body interaction. Haptic teleoperation. Bilateral teleoperation. Teleoperation and haptic systems architecture control approaches. Force

622 Graduate

control, impedance control, stiffness control Feed-forward control, Adaptive motion/force control. Performance specifications and stability issues, Stability and Transparency, stability against passive human and environment impedances. Design for time-delayed teleoperation. Robustness issues. Collaborative control and collaborated virtual environment.

RCSS 532 Robust and Optimal Control (3 cr.)

Linear system theory and robust control. System analysis: stability and performance, sensitivity function, integral quadratic constraints, small-gain argument, H_2 and H_∞ space and performance. NORMs. Robustness and Uncertainty. Robust stability, quadratic stability, and stability margin. Robust performance, controller parameterization, design constraints. Balanced Model Reduction, Modeling uncertainty. Linear fractional transform (LFT). Structured singular values, μ –Analysis, LMI analysis. μ synthesis. H_2 optimal control, H_∞ control and controller order reduction, H_∞ shaping. Optimal control theory: optimization of static functions, calculus of variations, optimal linear regulators, dynamic programming.

RCSS 533 Nonlinear and Adaptive Control (3 cr.)

Same as MENG 620.

Prerequisites: Consent of instructor.

Introduction to the analysis and design of nonlinear control systems. Linearization of nonlinear systems. Phase-plane analysis, Lyapunov stability analysis. Design of stabilizing controllers. Properties of adaptive systems, Adaptive control and real-time parameter estimation, Deterministic self-tuning regulators, model reference control, Adaptive observers, model reference adaptive control, gain scheduling controller modeling. Stability of adaptive control systems.

RCSS 534 Networked Control Systems: Design and Applications (3 cr.)

Same as EENG 556.

Prerequisites: EENG 321 and EENG 432.

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.

RCSS 541 Smart Systems and Computational Intelligence (3 cr.)

Intelligent systems and evolutionary algorithms. Computational methods, intelligent behaviors and algorithms observed in nature and humans. Neural networks: Supervised and unsupervised Neural Networks (NNs), Single and Multi layer feed-forward NNs, Feedback NNs, Hopfield NNs, Associative memories (Kohonen networks), Learning vector quantizer (LVQ) Radial base function (RBF) NNs. Evolutionary algorithms, genetic algorithms. Fuzzy logic: memberships. reasoning, Fuzzy controllers, Neuro-Fuzzy networks, Fuzzy ARMAP. Swarm Intelligence and Colony optimization. Feature selection. Computational intelligence: imprecise and uncertain knowledge, learning, adaptive behavior and real time problems. Case studies.

RCSS 542 MEMS/NEMS Technology and Devices (3 cr.)

Same as PHYS 556 and NANO 521.

Prerequisites: PHYS 215 and consent of instructor.

This course will cover basic MEMS/NEMS fabrication technologies, various transduction

Robotics, Control and Smart Systems 623

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.

RCSS 543 Image Analysis and Computer Vision (3 cr.)

Perception and image systems. Pinhole Camera Model. Auto-calibration. Digital image processing fundamentals. Image normalization, gray and binary image processing, RGB and IHS color space representations. Image enhancement: contrast stretching and digital filtering in the spatial and frequency domains. Image restoration. Coding and compression. Image segmentation. Image Convolution / Correlation Matching / De-convolution. Object classification and classifiers. Object recognition and interpretation. Estimating image field and image motion, Optical flow and motion. Stereo vision. Multi-view and motion-based 3-D object reconstruction. Dynamic vision: object tracking, recursive state estimation, autonomous navigation, discrete self-localization. Robotic Control via visual servoing.

RCSS 544 Sensors, Perception and Smart Systems (3 cr.)

Sensors and perception. Physical principles of sensing. Static and dynamic characteristics of sensors. Sensor classifications and selection. Interfacing techniques. Calibration and self-calibration of smart sensors. Sensors and intelligent systems: design trends in the field of smart sensors systems. Sensors for: intelligent and autonomous robots, smart systems, automotive and manufacturing industries, smart structures, and other modern industries and smart products. Sensor integration and data fusion. Sensors in remote control and real time systems. Wireless sensor networks, features, architecture and technology, topology, energy, communication protocols and security, distributed & collaborative signal processing, and applications.

RCSS 545 Advanced Artificial Intelligence (3 cr.)

Same as CSCE 565.

Knowledge and Reasoning: Logical Agents, First-Order Logic, Inference in First-Order Logic, Classical Planning, and Knowledge Representation. Uncertain Knowledge and Reasoning: Quantifying Uncertainty, and Probabilistic Reasoning. Machine Learning: Learning from Examples, Knowledge in Learning, Learning Probabilistic Models, and Reinforcement Learning.

RCSS 590 Graduate Thesis Seminar I (2 cr.)

Same as ENGR 590.

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.

RCSS 591 Graduate Thesis Seminar II (1 cr.)

Same as ENGR 591.

Prerequisites: RCSS 590.

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.

624 Graduate

RCSS 592 Selected Topics in RCSS (3 cr.)

Prerequisites: Consent of the faculty advisor.

Topics to be chosen according to specific interests. Maybe taken for credit more than once if content changes.

RCSS 593 Capstone Project (3 cr.)

Students are required attend the library and the writing modules of RCSS 590 and , to undertake an engineering project approved by student's advisor and the director of the program. A final report of the project should be submitted and orally defended in the presence of a supervisory committee consist of student's advisor and two faculty members.

RCSS 599 Research Guidance Thesis (3 cr.)

Prerequisites: RCSS 590

Consultation on problems related to student thesis. Must be taken at least twice for credit.

Sociology-Anthropology

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

Professor Emeriti: A. Cole, N. Hopkins

Professors: S. Altorki, M. Abaza

Associate Professors: N. Nosseir, H. Rizzo

Assistant Professors: H. Sabea, M. Westmoreland, M. Tabishat, J. Schaefer, A. Czajka, A. Holmes, M. Rouchdy, J. Curiel, K. Fahmi, S. Perdigon

Master of Arts

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 are normally admitted to the program in the fall only.

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

626 Graduate

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.

Sociology – Anthropology Courses (SOC/ANTH)

SOC/ANTH 500 Classical Social Thought (3 cr.)

Offered in fall.

An in-depth examination of classical sociological and anthropological theories of culture and society.

SOC/ANTH 501 Contemporary Social Thought

Prerequisites: SOC/ANTH 500. Offered in spring.

An in-depth examination of contemporary sociological and anthropological theories of culture and society.

SOC/ANTH 502 Structure and Process in Egyptian Society (3 cr.)

Offered occasionally.

Emphasis on those forces which have given Egyptian society cohesion and continuity in a rapidly changing world. Crucial issues confronting social scientists and planners.

SOC/ANTH 503 Middle Eastern Societies and Cultures (3 cr.)

Offered in spring.

A survey of the present state of knowledge concerning Middle Eastern societies, with an emphasis on the disciplinary approaches of sociology and anthropology.

Sociology-Anthropology 627

SOC/ANTH 505 Ethnographic Fieldwork (3 cr.)

Offered in spring.

Techniques of participant observation, nonparticipant observation, and in-depth interviewing used in anthropology and ethno-methodology. Issues include problems of access, grounded theory and ethical issues. Students will normally carry out a fieldwork project for the course.

SOC/ANTH 506 Survey Research (3 cr.)

Offered in spring.

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.

SOC/ANTH 507 Introduction to Forced Migration and Refugee Studies (3 cr.)

Same as MRS 507. Prerequisites: Graduate standing or advanced undergraduate standing and permission of instructor. Offered in fall.

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.

SOC/ANTH 508 Special Topics in Migration and Refugee Issues (3 cr.)

Same as MRS 508.

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.

SOC/ANTH 510 Problems in Sociology-Anthropology (3 cr.)

Offered occasionally.

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.

SOC/ANTH 515 Kin, Friends and Neighbors (3 cr.)

Offered in alternate years.

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.

SOC/ANTH 520 Sex Roles, Gender and Society (3 cr.)

Offered in alternate years.

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 (3 cr.)

Offered in alternate years.

The relation of ideology and world religions to social action; special emphasis on the

628 Graduate

integrative aspects on society as well as their potential for change and transformation.

SOC/ANTH 530 Theorizing the State (3 cr.)

Offered in alternate years.

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.

SOC/ANTH 535 World Systems and Development (3 cr.)

Offered in alternate years.

Theories of the growth of the new international division of labor and its relationship to socioeconomic change in both developed and developing societies.

SOC/ANTH 540 Revisiting the Rural (3 cr.)

Offered in alternate years.

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.

SOC/ANTH 545 Cities: Structure and Dynamics (3 cr.)

Offered in alternate years.

The structure of urban forms, patterns of city life, and the relationship of cities to the wider societies of which they are part.

SOC/ANTH 550 Sociology of Knowledge (3 cr.)

Offered in alternate years.

The epistemological foundations and social framework of knowledge; what is involved in "having knowledge" about society.

SOC/ANTH 555 Comparative Health and Healing Systems (3 cr.)

Offered in alternate years.

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.

SOC/ANTH 560 Population Dynamics (3 cr.)

Offered in alternate years.

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.

SOC/ANTH 565 Ethnicity, Identity and Nationalism (3 cr.)

Offered in alternate years.

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.

Sociology-Anthropology 629

SOC/ANTH 570 Environment and Society (3 cr.)

Offered in alternate years.

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.

SOC/ANTH 575 Modern Social Movements (3 cr.)

Offered in alternate years.

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.

SOC/ANTH 580 History and Memory (3 cr.)

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.

SOC/ANTH 591 Guided Research (1-3 cr.)

Fieldwork under the supervision of the Social Research Center or a member of the departmental staff.

SOC/ANTH 598 Thesis Writing Seminar (3 cr.)

Prerequisites: SOC/ANTH 500, SOC/ANTH 501 and either SOC/ANTH 505 or SOC/ANTH 506 or the consent of the instructor.

This course serves as an intermediary phase between the research proposal and the Master's thesis, which is designed to help students transition from fieldwork and data collection to data analysis and writing up. Students will be lead through a process of documenting, analyzing, and presenting their data in ways that emphasize faculty and peer evaluation and feedback.

SOC/ANTH 599 Research Guidance and Thesis (no cr.)

Offered in fall and spring.

Consultation for students in problems related to their theses.

630 Graduate

Teaching Arabic as a Foreign Language

**Arabic Language Institute
School of Humanities and Social Sciences**

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.

Master of Arts

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

Teaching Arabic as a Foreign Language 631

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

- TAFI 501 - Principles of Linguistic Analysis (3 cr.)
- TAFI 503 - Second Language Acquisition (3 cr.)
- TAFI 510 - Methods of Teaching a Foreign Language I (3 cr.)
- TAFI 511 - Methods of Teaching a Foreign Language II (3 cr.)
- TAFI 520 - Research Methods in Applied Linguistics (3 cr.)
- TAFI 553 - Sociolinguistics (3 cr.)
- TAFI 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 TAFI courses, with the adviser's approval, electives may include up to two non-TAFI 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: TAFI 501, 503, 510, 511, and 520. Phase two courses include: TAFI 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.

632 Graduate

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 in TAFL

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.

TAFL Courses

TAFL 501 Principles of Linguistic Analysis (3 cr.)

Same as TEFL 501. Offered in fall.

Concepts fundamental to linguistic analysis in the areas of syntax, semantics, phonology, historical linguistics, sociolinguistics, and language acquisition.

TAFL 502 Assessment in Language Learning (3 cr.)

Same as TEFL 502. Offered in fall.

A practical course that will enable the student to develop valid and reliable assessment procedures, analyze results, and evaluate the procedures.

TAFL 503 Second Language Acquisition (3 cr.)

Same as TEFL 503. Prerequisites: TAFL/TEFL 501 or permission of the department. Recommended TAFL/TEFL 520. Offered in fall and spring.

Relationship between first and second language acquisition. Aspects of acquisition from a psycho-linguistic perspective. Cognitive, linguistic, personality and classroom factors influencing SLA. Applications for teaching.

TAFL 507 Computer Assisted Language Learning (CALL)/Computer Operations Techniques (3 cr.)

Prerequisites: TAFL 510. Offered once a year.

Description, analysis and evaluation of CALL software. Integration of CALL into AFL learning. Guided practical experience in producing AFL software using authoring programs.

Teaching Arabic as a Foreign Language 633

Using the Internet as a resource for learning AFL.

TAFL 510 Methods of Teaching a Foreign Language I (3 cr.)

Same as TEFL 510. Offered consecutively with TAFL 511.

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.

TAFL 511 Methods of Teaching a Foreign Language II (3 cr.)

Prerequisites: TAFL 510. Offered consecutively with TAFL 510.

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.

TAFL 515 The Phonetics of Arabic (3 cr.)

Offered in the fall.

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.

TAFL 516 The Linguistics of Arabic (3 cr.)

Offered in alternate years.

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.

TAFL 520 Research Methods in Applied Linguistics (3 cr.)

Same as TEFL 520.

Provides TEFL/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.

TAFL 525 Language Transfer, Contrastive Analysis, and Error Analysis (3 cr.)

Same as TEFL 525. Prerequisites: TAFL 501. Offered once a year.

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.

TAFL 540 Selected Topics in Applied Linguistics (1, 2, or 3 cr.)

Same as TEFL 540.

634 Graduate

Special topics and current issues in linguistics and language teaching with special reference to Arabic. May be taken more than once if content changes.

TAFL 550 Language Pragmatics (3 cr.)

Same as TEFL 550. Prerequisites: TAFL 501. Offered once a year.

Definition of pragmatics. Relations of pragmatics to semantics, syntax and sociolinguistics. Speech act theory. Directness and indirectness. The cooperative Principle, principles of politeness, Relevance Theory. Cross-linguistics/cultural application. Relevance to language teaching.

TAFL 551 Advanced Arabic Grammar (3 cr.)

Offered in fall and spring.

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.

TAFL 553 Sociolinguistics (3 cr.)

Same as TEFL 553. Offered once a year.

The effect of social phenomena on linguistic form. Languages, dialects, and speech communities. Multilingual societies, diglossia, code choice. Regional, social and linguistic variation. Terms of address. Language attitudes. Language and ethnicity. Language maintenance and shift. Language and gender. Language planning and standardization. Sociolinguistic aspects of education.

TAFL 555 Seminar on Challenges Facing AFL Teachers (3 cr.)

Prerequisites: TAFL 553.

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.

TAFL 560 Supervised Study in TAFL (3 cr.)

Prerequisites: consent of instructor. Offered in fall and spring.

Individual research on specific area of interest to the student. May be taken a second time if content changes.

TAFL 563 Language Variation and Change (3 cr.)

Prerequisites: TAFL 553

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.

TAFL 588 Comprehensives (no cr.)

Offered occasionally.

Individual consultation for students preparing for the comprehensive examination.

Teaching Arabic as a Foreign Language 635

TAFL 599 Research Guidance and Thesis (no cr.)

Offered in fall and spring.

Consultation for students on matters related to their thesis.

636 Graduate

Teaching English as a Foreign Language

English Language Institute
School of Humanities and Social Sciences

Professors Emeriti: S. El Araby, Y. El-Ezabi, E. F. Perry, P. Stevens

Professors: A. Agameya (Director, English Language Institute)

Associate Professor: R. Williams

Assistant Professors: P. Wachob, L. Fredricks, A. Gebril

The graduate programs in Teaching English as a Foreign Language (TEFL) 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 TEFL 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.

Master of Arts

Courses

Required of all students:

TEFL 500 - English Grammar (3 cr.)

TEFL 501 - Principles of Linguistic Analysis (3 cr.)

TEFL 502 - Assessment in Language Learning (3 cr.)

TEFL 503 - Second Language Acquisition (3 cr.)

TEFL 510 - Methods of TESOL I (3 cr.)

TEFL 511 - Methods of TESOL II (3 cr.)

TEFL 520 - Research Methods in Applied Linguistics (3 cr.)

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

Teaching English as a Foreign Language 637

course from two of the groups listed below.

1. Education and research:

- TEFL 507 - Computer Assisted Language Learning (CALL) (3 cr.)
- TEFL 540 - Selected Topics in Applied Linguistics (1, 2, or 3 cr.)
- TEFL 570 - Proposal Writing (3 cr.)

2. Linguistics:

- TEFL 521 - English Syntax (3 cr.)
- TEFL 540 - Selected Topics in Applied Linguistics (1, 2, or 3 cr.)
- TEFL 548 - Corpus Linguistics (3 cr.)
- TEFL 550 - Language Pragmatics (3 cr.)

3. Cross-linguistic, cross-cultural studies:

- TEFL 525 - Language Transfer, Contrastive Analysis, and Error Analysis (3 cr.)
- TEFL 540 - Selected Topics in Applied Linguistics (1, 2, or 3 cr.)
- TEFL 550 - Language Pragmatics (3 cr.)
- TEFL 553 - Sociolinguistics (3 cr.)

Note

In the case of TEFL 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 TEFL/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 in TEFL

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 TEFL courses:

Two three-hour additional courses to be decided upon by the student in consultation with the academic adviser

638 Graduate

TEFL 500 - English Grammar (3 cr.)
 TEFL 501 - Principles of Linguistic Analysis (3 cr.)
 TEFL 503 - Second Language Acquisition (3 cr.)
 TEFL 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:

TEFL 501 - Principles of Linguistic Analysis (3 cr.)
 TEFL 503 - Second Language Acquisition (3 cr.)
 TEFL 510 - Methods of TESOL I (3 cr.)
 TEFL 511 - Methods of TESOL II (3 cr.)

or an acceptable elective.

TEFL Courses

TEFL 500 English Grammar (3 cr.)

A descriptive overview of the structure of English. Detailed analysis of the major grammatical constructions. Implications for language teaching and learning.

TEFL 501 Principles of Linguistic Analysis (3 cr.)

Same as TAFL 501.

Concepts fundamental to linguistic analysis in the areas of syntax, semantics, phonology, historical linguistics, sociolinguistics, and language acquisition.

TEFL 502 Assessment in Language Learning (3 cr.)

Same as TAFL 502.

A practical course that will enable the student to develop valid and reliable assessment procedures, analyze results, and evaluate the procedures.

TEFL 503 Second Language Acquisition (3 cr.)

Relationship between first and second language acquisition. Aspects of acquisition from a psycho-linguistic perspective. Cognitive, linguistic, personality and classroom factors influencing SLA. Implications for teaching.

Same as TAFL 503. Prerequisites: TEFL/TAFL 501 or permission of the department. Recommended TEFL/TAFL 520.

TEFL 507 Computer Assisted Language Learning (CALL) (3 cr.)

Prerequisites: TEFL 510.

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.

TEFL 510 Methods of TESOL I (3 cr.)

Same as TAFL 510.

Survey of learning theories, individual learning styles and strategies as they relate to the

Teaching English as a Foreign Language 639

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.

TEFL 511 Methods of TESOL II (3 cr.)

Prerequisites: TEFL 510.

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.

TEFL 520 Research Methods in Applied Linguistics (3 cr.)

Same as TAFL 520.

Provides TEFL/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.

TEFL 521 English Syntax (3 cr.)

Prerequisites: TEFL 501.

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.

TEFL 525 Language Transfer, Contrastive Analysis, and Error Analysis (3 cr.)

Same as TAFL 525. Prerequisites: TEFL 501.

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.

TEFL 530 Supervised Study in TEFL (3 cr.)

Prerequisites: consent of instructor.

Individual research on a specific area of interest to the student in consultation with the instructor. May be taken a second time if content changes.

TEFL 540 Selected Topics in Applied Linguistics (1, 2, or 3 cr.)

Same as TAFL 540.

Special topics and current issues in linguistics and language teaching. May be taken more than once if content changes.

TEFL 548 Corpus Linguistics (3 cr.)

Prerequisites: TEFL 501.

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.

640 Graduate

TEFL 550 Language Pragmatics (3 cr.)

Same as TAFL 550. Prerequisites: TEFL 501.

Definition of pragmatics. Relation of pragmatics to semantics, syntax and sociolinguistics. Speech act theory. Directness and indirectness. The Cooperative Principle, principles of politeness, Relevance Theory. Cross-linguistic/cultural application. Relevance to language teaching.

TEFL 553 Sociolinguistics (3 cr.)

Same as TAFL 553.

The effect of social phenomena on linguistic form. Languages, dialects, and speech communities. Multilingual societies, diglossia, code choice. Regional, social, and linguistic variation. Terms of address. Language attitudes. Language and ethnicity. Language maintenance and shift. Language and gender. Language planning and standardization. Sociolinguistic aspects of education.

TEFL 570 Proposal Writing (3 cr.)

Prerequisites: TEFL 520.

A seminar specially designed for thesis track candidates and others who wish to pursue research in TEFL. 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.

TEFL 588 Comprehensives (no cr.)

Consultation for students preparing for the comprehensive examination.

TEFL 599 Research Guidance and Thesis (no cr.)

Consultation for individual students on matters related to their theses.

The background image is a monochromatic, sepia-toned photograph of a university campus. In the foreground, a large, circular fountain with several water jets is active. Behind the fountain is a low stone wall. In the mid-ground, there are several trees, including palm trees. In the background, a large, modern university building with a prominent grid-like facade of windows and a covered entrance is visible. The text "Doctorate Degree Programs" is centered over the fountain area.

Doctorate Degree Programs

642 Graduate

Applied Sciences and Engineering

School of Sciences and Engineering

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,
- 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

Applied Sciences and Engineering 643

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 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

644 Graduate

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.

Applied Sciences and Engineering 645

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)

646 Graduate

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 511:	Bioengineering, 3 cr.
BIOT 521:	Fundamentals of Bioinformatics, 3 cr.
BIOT 543:	Microbial Biotechnology, 3 cr.
CSCE 527:	Neural Networks and Genetic Algorithms, 3 cr.
CSCE 565:	Advanced Artificial Intelligence, 3 cr.
CSCE 561:	Knowledge Engineering, 3 cr.
CSCE 664:	Advanced Data Mining, 3 cr.
CENG 611:	Structural Stability, 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.
NANO 505:	Nanochemistry, 3 cr.
MACT 604:	Advanced Numerical Methods, 3 cr.
MENG 543:	Systems Modeling and Optimization, 3 cr.
MENG 615:	Continuum Mechanics, 3 cr.
MENG 681:	Stochastic Simulation, 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

Applied Sciences and Engineering 647

(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 601: Current Topics in Biotechnology, 3 cr.
- BIOT 602: Reading and conference course, 3 cr.
- CSCE 692: Advanced Selected Topics in Computer Science, 3 cr.
- EENG 661: Nanoscale CMOS, 3cr.
- MACT 605: Advanced Probability with Engineering Applications, 3 cr.
- NANO 621: Nanophotonics, 3 cr.
- NANO 630: Biomaterials, 3 cr.
- NANO 641: Surface and Nano-Chemistry, 3 cr.
- NANO 642: Nanocatalysis, 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.
- Graduate Thesis Seminar II, 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.

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
- 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., nanotechnology, biotechnology, computer science, environmental engineering, etc.).
3. Competence to conduct independent, empirical research that extends the knowledge base of the field of interest.

Applied Sciences and Engineering 649

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

650 Graduate

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

Applied Sciences and Engineering 651

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

652 Graduate

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 511: Bioengineering, 3 cr.
 BIOT 521: Fundamentals of Bioinformatics, 3 cr.
 BIOT 543: Microbial Biotechnology, 3 cr.
 CSCE 527: Neural Networks and Genetic Algorithms, 3 cr.
 CSCE 565: Advanced Artificial Intelligence, 3 cr.
 CSCE 561: Knowledge Engineering, 3 cr.
 CSCE 664: Advanced Data Mining, 3 cr.
 CENG 611: Structural Stability, 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.
 NANO 505: Nanochemistry, 3 cr.
 MACT 604: Advanced Numerical Methods, 3 cr.
 MENG 543: Systems Modeling and Optimization, 3 cr.
 MENG 615: Continuum Mechanics, 3 cr.
 MENG 681: Stochastic Simulation, 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. maximum

Applied Sciences and Engineering 653

ENVE 692:	Advanced Selected Topics in Environmental Engineering, 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. maximum
CENG 692:	Advanced Selected Topics in Structural and Material Engineering, 3 cr.
MACT 605:	Advanced Probability with Engineering Applications, 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 641:	Surface and Nano-Chemistry, 3 cr.
NANO 642:	Nanocatalysis, 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.

IV- Dissertation (Minimum of 36 credit hours)

Dissertation work includes completion of:

- Graduate Thesis Seminar I, 2 cr.
- Graduate Thesis Seminar II, 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

654 Graduate

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.

Ph.D. Courses

BIOT 601 Current Topics in Biotechnology (3 cr.)

This course provides a comprehensive and thorough understanding of recent trends in biotechnology research and development. Frontier areas in biotechnological applications as bioremediation, genetically modified organisms, molecular medicine and nano-biotechnology will be addressed.

BIOT 602 Reading and Conference Course (3 cr.)

Contemporary biotechnology topics, addressed from current primary literature will be discussed. Dogmas and disputes in biological, medical and/or agricultural sciences will be addressed to generate student discussions.

BIOT 699: Research Guidance Dissertation (3 cr.)

Consultation on problems related to student thesis. To be taken 11 times for credit.

CENG 611 Structural Stability (3 cr.)

Prerequisite: Consent of instructor.

Fundamental concepts in elastic stability: equilibrium equations, stability criteria and post-buckling behavior. Various aspects of instability: buckling of columns, frames, arches, plates and shells, dynamic buckling, nonlinear problems, torsion and flexural buckling. Approximate methods for stability analysis. Interactive buckling phenomena in light metallic constructions.

CENG 612 Structural Dynamics (3 cr.)

Prerequisite: Consent of instructor.

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.

Applied Sciences and Engineering 655

CENG 613 Earthquake Engineering and Seismic Design (3 cr.)

Prerequisite: Consent of instructor.

Earthquake ground motion and response spectra, dynamic response of buildings and structures to seismic loads, lateral load resisting systems, seismic design considerations, drift and lateral stability, code considerations, design of reinforced concrete, masonry and steel structures, design of nonstructural systems, structures with seismic mitigation systems: active and passive damping and base isolation.

CENG 631 Specialty Materials for Construction (3 cr.)

Prerequisite: Consent of instructor.

Review of applied mechanics of materials. Asphalt concrete; components, conventional and SUPERPAV characterization of asphalts, asphalt concrete conventional and SUPERPAV mix design, mechanistic and environmental performance. Special types of concrete; e.g. high strength, high durability, corrosion resistant, self compact. Non-conventional construction materials.

CENG 632 Highways Pavement Systems and Design (3 cr.)

Prerequisite: Consent of instructor.

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.

CENG 679 Preserving, Repair and Sustainability of Structures (3 cr.)

Prerequisites: CENG 579 or Equivalent Course/Experience

Protection of masonry, wood, concrete and steel and composite structures. Preserving historic structures. Condition assessment using innovative techniques. Equations and formulae for condition assessment with lab field visits. Complex repair of structures subjected to moderate to severe damage. Durability and sustainability of strategic structures. Repair life cycle cost.

CENG 680 Independent Study in Structural and Material Engineering (3 cr. max.)

Independent study in various problem areas of structural and material engineering may be assigned to individual students or to groups. Readings assigned and frequent consultations held.

CENG 692 Advanced Selected Topics in Structural and Material Engineering (3 cr.)

Topics chosen according to special interests of faculty and students. May be repeated for credit more than once if content changes.

CENG 699 Research Guidance Dissertation (3 cr.)

Consultation on problems related to student thesis. To be taken 11 times for credit.

CSCE 664 Advanced Data Mining (3 cr.)

Prerequisite: CSCE 565

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.

656 Graduate

CSCE 692 Advanced Selected Topics in Computer Science (3 cr.)

Topics chosen according to special interests of faculty and students. May be repeated for credit more than once if content changes.

CSCE 699 Research Guidance Dissertation (3 cr.)

Consultation on problems related to student thesis. To be taken 11 times for credit.

EENG 622 Advanced Topics in Wireless Communications (3 cr.)

Pre-requisite: EENG 521

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.

EENG 661 Nanoscale CMOS (3cr.)

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.

EENG 699 Research Guidance Dissertation (3 cr.)

Consultation on problems related to student thesis. To be taken 11 times for credit.

ENVE 662 Advanced Treatment Processes (3 cr.)

Description, design, and applications of advanced technologies for removal of contaminants from environmental media; membrane technologies – nanofiltration, ultrafiltration, reverse osmosis, membrane bioreactors; adsorption; biological activated carbon; biofilters; pulsators; tube settlers; advanced oxidation processes – ozonation, UV radiation, photo-oxidation, chemical oxidation and reduction; cryogenic and thermal processes.

ENVE 680 Independent Study in Environmental Engineering (3 cr. Max.)

Independent study in various problem areas of environmental engineering may be assigned to individual students or to groups. Readings assigned and frequent consultations held.

ENVE 692 Advanced Selected Topics in Environmental Engineering (3 cr.)

Topics chosen according to special interests of faculty and students. May be repeated for credit more than once if content changes.

ENVE 699 Research Guidance Dissertation (3 cr.)

Consultation on problems related to student thesis. To be taken 11 times for credit.

MACT 604 Advanced Numerical Methods (3 cr.)

Prerequisite: Consent of instructor.

Applied Sciences and Engineering 657

Numerical optimization: nonlinear unconstrained optimization, direct methods, simplex method, genetic algorithms, gradient methods, Quasi-Newton methods, constrained optimization, interior point methods, the ellipsoidal technique, trust region and optimization through surrogate models, design centering and tolerance. Solution of partial differential equations: advances in the finite element technique, finite volume, spectral methods, fuzzy approach.

MACT 605 Advanced Probability with Engineering Applications (3 cr.)

Prerequisites: A course in probability and consent of instructor.

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.

MENG 615 Continuum Mechanics (3 cr.)

Prerequisite: MENG 355. Offered in fall.

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.

MENG 620 Nonlinear and Adaptive Control (3 cr.)

Same as RCSS 533.

Prerequisite: Consent of instructor.

Introduction to the analysis and design of nonlinear control systems. Linearization of nonlinear systems. Phase-plane analysis, Lyapunov stability analysis. Design of stabilizing controllers. Properties of adaptive systems, Adaptive control and real-time parameter estimation, Deterministic self-tuning regulators, model reference control, Adaptive observers, model reference adaptive control, gain scheduling controller modeling. Stability of adaptive control systems.

MENG 660 Sustainability of Thermal Systems (3 cr.)

Energy systems; energy demand; energy audit; sustainable development; energy efficiency; energy management.

MENG 670 Advanced Transport Phenomena (3 cr.)

Prerequisites: MENG 362, MENG 466 and CFD course covering numerical solutions of flow equations.

Mass, momentum, and energy transport; kinetic theory of transport properties; analytical and approximate solutions to the equations of change; boundary layer theory; turbulence; simultaneous heat and mass transfer; over-all balances.

MENG 681 Stochastic Simulation (3 cr.)

Prerequisite: Graduate level knowledge of probability, statistics and stochastic processes.

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

658 Graduate

queues, simulation languages.

MENG 699 Research Guidance Dissertation (3 cr.)

Consultation on problems related to student thesis. To be taken 11 times for credit.

NANO 621 Nanophotonics (3 cr.)

The course will cover: Maxwell's equations, light-matter interaction, dispersion, EM properties of nanostructures, etc., Photonic crystals Photonic crystal fibers, Photonic nanocircuits Metal optics, manipulating light with plasmonic nanostructures, plasmonic nano-sensors, near-field optics, metamaterials, negative refractive index and super-resolution.

NANO 630 Biomaterials (3 cr.)

Same as MENG 535

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.

NANO 641 Surface and Nano-Chemistry(3 cr.)

Prerequisite: NANO 505.

This course addresses processes taking place at surfaces and interfaces, including adsorption phenomena; reactions at interfaces; nucleation and micellar formation; electrical double layers, electro kinetics and stability of dispersions and emulsions; adhesion mechanisms; surface analysis.

NANO 642 Nanocatalysis (3 cr.)

This course covers the characterization and reactivity of nanoscale catalysts. Concept of nanocatalysis. Reaction Engineering. Modeling in Nanocatalysis. Nanocatalytic membranes for gas to liquid conversion. Nanocatalysis for dehydrogenation of hydrocarbons. Charge transport in Molecular and Nanoscale systems. Synthesis of Nanoceramic catalysts by chemical and physical routes.

NANO 699 Research Guidance Dissertation (3 cr.)

Consultation on problems related to student thesis. To be taken 11 times for credit.

- 
- The background image shows a large, modern university building with a grid-like facade of windows. In the foreground, there is a circular fountain with several water jets. The entire image has a yellowish tint. The text is overlaid on the fountain area.
- **Language Institutes**
 - **Summer and Winter Sessions**
 - **Incoming Student Abroad, Outgoing Exchange Programs**

Language Institutes

In addition to the degree programs and courses just described, the academic units of the School of Humanities and Social Sciences offer Arabic and English language programs. The Arabic Language Institute provides courses in Arabic for regular degree students and for non-degree students. It also provides intensive Arabic language instruction for non-Arabic speakers. The Intensive English Program and English 100, Academic English for Freshmen, of the English Language Institute provide instruction for students who have been admitted into a degree program but who require further work to achieve the required level of English language proficiency.

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, J. Allam, N. El Assiouti, S. Attalla, K. Al Ekhnawy, El.S. Badawi, S. El-Ezabi, I. Hafez, A.Haidar, N. Harb, M. K. Hassan (Director, Arabic Language), A. Hassanein, N. Korica, S. Massoud, M. S. Moussa, I. Saad, H. Salem, L. Al-Sawi (Director, Arabic Language Intensive Program), S. Serry, I. Soliman (Executive Director, Center for Arabic Study Abroad), A. Waked (Director, Summer Program), 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.

Arabic Language Undergraduate Credit Courses (ALNG)

Director: M. K. Hassan

All Arabic language credit classes at AUC are administered and taught by the Arabic Language Institute. For details of university Arabic language requirements, see the “General Academic Requirements” section.

ALNG 101-102 -103 Elementary Arabic (3 cr. each per semester)

Offered in fall, winter, spring and summer.

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. Noncredit for Thanawiyya Amma holders.

ALNG 109-110 Introduction to Colloquial Arabic (3 cr. each per semester)

Offered in fall, winter, spring and summer.

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. Noncredit for students from Arab countries and Thanawiyya Amma holders.

ALNG 111-112 Accelerated Elementary Modern Standard Arabic (6 cr. each per semester)

Offered in fall and spring.

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. Noncredit for Thanawiyya Amma holders.

ALNG 199 Selected Topics (3 cr. per semester)

Offered fall, spring, summer and winter.

Study of selected topics for elementary students. The course meets five hours per week. Registration requires the permission of ALNG Director. May be repeated for credit if content changes. Noncredit for Thanawiyya Amma holders.

ALNG 201-202-203 Intermediate Arabic (3 cr. each per semester)

Prerequisites: ALNG 103 or placement examination. Offered in fall, spring, summer and winter. 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. Noncredit for Thanawiyya Amma holders

ALNG 204-205 Intermediate Modern Standard Arabic (3 cr. each per semester)

Prerequisites: ALNG 203 or placement examination. Offered in fall, winter, spring and summer. 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. Noncredit for Thanawiyya Amma holders.

ALNG 206 Arabic of the News Media (3 cr. per semester)

Prerequisites: ALNG 201. Offered in fall and spring.

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. Noncredit for Thanawiyya Amma holders

ALNG 210 Intermediate Egyptian Colloquial Arabic (3 cr. per semester)

Prerequisites: ALNG 110. Offered in fall, winter, spring and summer. 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. Non credit for students from the Arab countries and Thanawiyya Amma holders.

ALNG 211-212 Accelerated Intermediate Modern Standard Arabic (6 cr. each per semester)

Prerequisites: ALNG 201 or placement examination. Offered in fall and spring.

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. Noncredit for Thanawiyya Amma holders.

ALNG 299 Selected Topics (3 cr. per semester)

Offered in fall, winter, spring and summer.

Study of selected topics for intermediate students. The course meets five per week. Registration requires permission of the ALNG Director. The course meets 5 hours per week. May be repeated for credit if content changes. Noncredit for Thanawiyya Amma holders.

ALNG 301-302 Advanced Modern Standard Arabic I (3 cr. each per semester)

Prerequisites: ALNG 205. Offered in fall and spring.

Further develops reading, writing, listening and speaking of Modern Standard Arabic. Prepares advanced nonnative 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. Noncredit for Thanawiyya Amma holders.

ALNG 303-304 Advanced Modern Standard Arabic II (3 cr. each per semester)

Prerequisites: ALNG 302 or ALNG 311. Offered in fall and spring.

Further develops reading, writing, listening and speaking of Modern Standard Arabic. Prepares advanced nonnative speakers for upper-division or graduate-level work in the Arabic language. Two-semester sequence. Each course meets five per week. Registration requires permission of the ALNG Director. Noncredit for Thanawiyya Amma holders.

ALNG 305 Independent Study (3 cr. per semester)

Prerequisites: Any 200 level Arabic language course. Offered upon request.

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 per week. Registration requires permission of the ALNG Director. Noncredit for Thanawiyya Amma holders.

ALNG 306 Advanced Arabic of the News Media (3 cr. per semester)

Prerequisites: ALNG 206. Offered in fall and spring.

Introduces more complex and analytical articles and editorials from the Arabic press and trains students to take while listening to broadcasts. Expands students' range of vocabulary and develops their ability to listen to lengthier passages. The course meets three per week. Registration requires permission of the ALNG Director. Noncredit for Thanawiyya Amma holders.

ALNG 311-312 Accelerated Advanced Modern Standard Arabic (6 cr. each per semester)

Offered in fall and spring.

The courses aim at preparing advanced, nonnative 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 per week. Registration requires permission of the ALNG Director. Noncredit for Thanawiyya Amma holders.

ALNG 399 Selected Topics (3 cr. per semester)

Offered in fall, winter, spring and summer.

Study of selected topics for advanced students. The course meets five per week. Registration requires the permission of ALNG Director. May be repeated for credit if content changes. Noncredit for Thanawiyya Amma holders.

ALNG 413-414 Arabic Syntax (Nahw) (3 cr. per semester)

Same as ARIC 413-414. 413-Offered in fall, 414-Offered in spring.

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.

ALNG 415 Arabic Morphology (Sarf) and Prosody ('Arud) (3 cr.)

Same as ARIC 415. Offered occasionally.

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. The language of instruction is Arabic.

ALNG 425 Linguistics of Arabic (3 cr.)

Same as ARIC 425. Offered in alternate years.

Development of the linguistic structure of Arabic and the Arabic of the early Islamic era as described by the early Arab philologists.

ALNG 426 The Phonetics of Arabic (3 cr.)

Same as ARIC 426. Offered in fall.

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.

Arabic Writing Courses (ALWT)

ALWT 221 From Reading to Writing: Intermediate Level (3 cr.)

Offered in the fall and spring.

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.

ALWT 321 From Reading to Writing: High Intermediate Level (3 cr.)

Offered in the fall and spring.

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. 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 (3 cr.)

Prerequisites: Score 85 or more in the Arabic Writing Placement Exam or have taken either 221 or 321. Offered in the fall and spring.

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.

ALWT 421 Professional Media Writing (3 cr.)

Prerequisites: Score 85 or more in the Arabic Writing Placement Exam or have taken either 221 or 321. Offered in the fall.

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.

ALWT 422 Professional Business Writing (3 cr.)

Prerequisites: Score 85 or more in the Arabic Writing Placement Exam or have taken either 221 or 321. Offered in the fall and spring.

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.

ALWT 423 Professional Diplomatic Writing (3 cr.)

Prerequisites: Score 85 or more in the Arabic Writing Placement Exam or have taken either 221 or 321. Offered in the fall and spring.

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.

ALWT 462 Professional Translation in Business (3 cr.)

Prerequisites: Prerequisite ALWT 420 or consent of instructor. Offered in the fall and spring. 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.

ALWT 463 Diplomatic Professional Translation (3 cr.)

Prerequisites: Prerequisite ALWT 420 or consent of instructor. Offered in the fall and spring. 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.

Arabic Language Intensive Program (ALIN)

Director: L. Al-Sawi

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

Arabic Language Intensive Program (ALIN) is part of the Arabic Language Institute's program. Students must register for a minimum of twelve credit hours per semester, while the normal course load is twenty contact hours per week. All courses are taken for grades, and credit is granted as indicated at the beginning of each course listing. Qualified undergraduate students may receive up to 15 undergraduate credits in the fall and in the spring semesters from AUC. In the Summer Program (ALIS) students can receive up to eight credit hours. (see "Non-degree Academic Regulations" for transfers of credit to other universities under "Undergraduate Academic Requirements").

Elementary Level

The course for beginners runs from the first week of September through May. The main emphasis is on modern standard Arabic, but Egyptian colloquial Arabic is simultaneously offered (about thirty percent of class time is devoted to colloquial). Arabic is used as the main medium of instruction in the second half of the program. The course comprises up to twenty hours per week of classroom instruction, including language laboratory work, and up to twenty hours of home assignments.

A student who successfully completes the first year of intensive study with the Arabic Language Institute can expect to possess a working competence in reading and writing modern standard Arabic and understanding and speaking Egyptian colloquial or modern standard Arabic.

Intermediate Level

Courses at this level are designed for those who have completed a year of intensive study at the elementary level of the Arabic Language Institute or who have studied two or more years elsewhere and can demonstrate a similar level of competence. The program runs from the first week of September through May in the following year.

Arabic is the chief medium of instruction. Students continue work in modern standard Arabic and Egyptian colloquial Arabic. Interested students may, at this level, begin to acquire familiarity with classical Arabic. Attention is given to the Arabic of print and broadcast media, while special lecture courses in Arabic are offered in response to the special interests of the students, such as Middle Eastern economics and politics, business correspondence, medieval and modern Arabic literature.

Students who complete this second year of study should be able to read and write modern standard Arabic with some fluency, to pursue study in topics that specially interest them in Arabic, and to converse freely in Arabic. Intermediate-level students will also have had an opportunity to acquire vocabulary and terminology related to such special fields of interest as business and diplomacy.

Advanced Level

Exceptional students may wish to take a third year. These courses are arranged according to demand, but they typically include advanced work in reading and writing and lecture courses in special topics. At the end of such a course a student should be able to compete with Arab students at the university level. Alternatively, the student should be able to employ Arabic with competence and confidence in the fields of business and/or diplomacy.

Certificate and Program Requirements

ALIN fulltime students must take twenty contact hours per week for which they are awarded twelve to fifteen program credits per semester.

At the end of students' enrollment in the Arabic Language Intensive Program, certificates of achievement will be awarded from the Arabic Language Institute (specifying their level, i.e. elementary, intermediate or advanced) (See the Intensive Arabic Language Course listing and the number of program credits awarded for each course).

Arabic Language Intensive Courses (ALIN)

ALIN courses are listed sequentially by area. In this three digit system, the first digit represents the level of the course: 1 for elementary, 2 for intermediate, and 3 for advanced.

Prerequisites are not listed for every course. However, entry into all intermediate and advanced courses presupposes that the student is of intermediate or advanced standing. The instructor's permission may also be required. Standing will be determined by written and/or oral placement tests for incoming students and sometimes for continuing students.

Courses in Modern Standard Arabic

ALIN 101-102-103-104 Elementary Modern Standard Arabic (3 cr. each)

Offered in fall and spring.

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. Each course meets five hours per week.

ALIN 105-106 Elementary Listening (2-3 cr. each)

Offered in fall and spring. Develops students' ability to listen and understand Modern Standard Arabic. Each course meets three or five hours per week.

ALIN 201-202-203-204 Intermediate Modern Standard Arabic (3 cr. each)

Any two consecutive can be taken simultaneously. Offered in fall and spring.

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. Each course meets five hours per week.

ALIN 205-206 Intermediate Grammar (2-3 cr. each)

Offered in fall and spring.

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. Each course meets three or five hours per week.

ALIN 207-208 Intermediate Spoken Modern Standard Arabic (MSA) (2-3 cr. each)

Offered in fall and spring.

Uses selected written material to prepare students to engage in discussions in Modern Standard Arabic. Each course meets three or five hours per week.

ALIN 209-210 Intermediate Listening and Speaking (2-3 cr. each)

Offered in fall and spring.

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. Each course meets three or five hours per week.

ALIN 301-302 Advanced Modern Standard Arabic (3 cr. each)

Offered in fall and spring. 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 five hours per week.

ALIN 305-306 Advanced Arabic Grammar (2-3 cr. each)

Offered in fall and spring.

Examines the complexities of Arabic grammar through textual analysis. Each course meets three or five hours per week.

ALIN 307-308 Advanced Spoken Modern Standard Arabic (MSA) (2-3 cr. each)

Offered in fall and spring.

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. Each course meets three or five hours per week.

ALIN 309-310 Advanced Listening and Speaking (2-3 cr. each)

Prerequisites: ALIN 209210 or consent of instructor. Offered in fall and spring.

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. Each course meets three or five hours per week.

Courses in Colloquial Arabic

ALIN 111-112-113 Elementary Colloquial Arabic (3-4 cr. each)

Offered in fall and spring.

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 five or seven hours per week.

ALIN 211-212 Intermediate Colloquial Arabic (3-4 cr. each)

Offered in fall and spring.

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.

ALIN 311-312 Advanced Colloquial Arabic (3-4 cr. each)

Offered in fall and spring.

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.

Courses in Writing Arabic

ALIN 121-122 Elementary Writing (2-3 cr. each)

Offered in fall and spring.

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. Each course meets three or five hours per week.

ALIN 221-222 Intermediate Writing (2-3 cr. each)

Offered in fall and spring.

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.

ALIN 223-224 Intermediate Business Writing (2 cr. each)

Offered occasionally.

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,

Language Institutes 669

recruitment and product advertisement, complaints, etc. Each course meets three hours per week.

ALIN 225-226 Intermediate Reading and Writing (3 cr. each)

Offered in Fall and Spring.

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. Each course meets five hours per week

ALIN 321-322 Advanced Writing (2-3 cr. each)

Offered in fall and spring.

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.

ALIN 323-324 Advanced Business Writing (2 cr. each)

Prerequisites: ALIN 224. Offered occasionally

Explores writing for sophisticated business and commercial situations. Includes agenda and minutes, tax declarations, contracts, bylaws, etc. Each course meets three hours per week.

ALIN 325-326 Advanced Reading and Writing (3 cr. each)

Prerequisites: ALIN 225-226 or consent of instructor. Offered in fall and spring.

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. Each course meets five hours per week.

Courses in Media Arabic

ALIN 131-132 Elementary Printed Media (2-3 cr. each)

Offered in fall and spring.

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

ALIN 133-134 Elementary Aural Media (2-3 cr. each)

Prerequisites: ALIN 131.

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. Offered in fall and spring. Each course meets three or five hours per week.

ALIN 231-232 Intermediate Printed Media (2-3 cr. each)

Offered in fall and spring.

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.

ALIN 233-234 Intermediate Aural Media (2-3 cr. each)

Offered in fall and spring.

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.

ALIN 331-332 Advanced Printed Media (2-3 cr. each)

Offered in fall and spring.

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.

ALIN 333-334 Advanced Aural Media (2-3 cr. each)

Offered in fall and spring.

Trains students to take 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.

Courses in Translation**ALIN 241-242 Intermediate Translation (2-3 cr. each)**

Offered in fall and spring.

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.

ALIN 341-342 Advanced Translation (2-3 cr. each)

Offered in fall and spring.

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.

Courses in Literature**ALIN 251 Readings in the Modern Arabic Short Story (2-3 cr.)**

Offered in fall and spring.

Introduces students to the genre through the reading of some representative works. Course meets three or five hours per week.

ALIN 252 Readings in Modern Arabic Literature (2-3 cr.)

Offered in spring.

Selections from a variety of prose writings. Course meets three or five hours per week.

ALIN 351 Readings in the Modern Arabic Short Story (3 cr.)

Offered in fall and spring.

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. Course meets three hours per week.

ALIN 352 Readings in Modern Arabic Literature (3 cr.)

Offered in spring.

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

ALIN 353-354 Readings in the Modern Arabic Novel (3 cr. each)

Offered occasionally.

Introduces students to the genre through the reading of some representative novels or plays written by well known Arab writers. Each course meets three hours per week.

Courses in Textual Readings**ALIN 361-362 Modern Arabic Texts (3 cr. each)**

Offered occasionally.

Exposes students to a wide selection of modern nonfiction, increasing their range of vocabulary and acquainting them with the style of the essay. Each course meets three hours per week.

ALIN 365-366 Classical and/or Medieval Texts (3 cr. each)

Offered occasionally.

Introduces students to the vocabulary and style of classical and/or medieval Arabic. Each course meets three hours per week.

Courses in Reading the Qur'an**ALIN 171-172 Readings in the Qur'an (2-4 cr. each)**

Offered in fall and spring.

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 to seven hours per week.

ALIN 271-272 Readings in the Qur'an (2-3 cr. each)

Offered in fall and spring.

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.

ALIN 371-372 Qur'anic Studies (3 cr. each)

Offered occasionally.

Hours 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. Each course meets three hours per week.

Courses in Reading in the Social Science**ALIN 281-282 Political Texts (2-3 cr. each)**

Offered in fall and spring.

Acquaints students with the terminology and style of selected political texts. Covers elections, the party system, public policy, etc. Each course meets three or five hours per week.

ALIN 283 Readings in Economics (2 cr. each)

Offered in spring. Acquaints students with the terminology and style of economic texts through the reading and discussion of selected articles on Egyptian and international economic issues. Course meets three hours per week.

ALIN 381-382 Political Texts (3 cr. each)

Offered in fall and spring.

An issue-oriented course which explores the writings of modern political scientists. Each course meets three hours per week.

ALIN 383 Readings in Economics (3 cr. each)

Offered in spring.

Exposes students to a wider variety of texts. Focuses on discussion and analysis of the readings. Course meets three hours per week.

ALIN 386-387 Modern Egyptian History (3 cr. each)

Offered occasionally.

An introduction to Egyptian history, from Muhammad Ali, the founder of modern Egypt, until the present time. Each course meets three hours per week.

Supervised Readings**ALIN 191-192 Supervised Studies (1-4 cr. each)**

Offered in fall and spring.

Study of a selected topic according to the students' level and interests. May be repeated for credit when content changes. Each course meets two to seven hours per week.

ALIN 291-292 Supervised Studies (1-4 cr. each)

Offered in fall and spring.

Study of a selected topic according to the students' level and interests. May be repeated for credit when content changes. Each course meets two to seven hours per week.

ALIN 391-392 Supervised Studies (1-4 cr. each)

Offered in fall and spring.

Study of a selected topic according to the students' level and interests. May be repeated for credit when content changes. Each course meets two to seven hours per week.

Courses in Egyptian Culture**ALIN 284 Introduction to Egyptian Culture Intermediate (2-3 cr.)**

Prerequisites: Intermediate level in Arabic or consent of program director. Offered in fall and spring. 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. Class meets 3 or 5 hours per week.

ALIN 384 Introduction to Egyptian Culture Advanced (2-3 cr.)

Prerequisites: Advanced level in Arabic or consent of program director. Offered in fall and spring. 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. Class meets 3 or 5 hours per week.

Arabic Language Intensive Summer Program (ALIS)

Director: A. Waked

The Arabic Language Institute offers an intensive summer program from the second week of June until the last week of July. Students must take twenty hours of class per week to be considered full-time. The summer curriculum includes either Modern Standard Arabic (MSA) and Egyptian Colloquial Arabic (ECA) at all levels, or Modern Standard Arabic only, both options as a full load.

In addition, a number of electives is also offered depending on the students' level.

Students in summer receive from six to eight credit hours depending on their level. A certificate of achievement from the Arabic Language Institute is then offered upon successful completion of the program.

Extra Curricular Activities/Student Cultural Activity Program

An integral part of the intensive language program, both full year & summer, is an extensive series of tours of Cairo and trips to the easily visited sites of interest all over Egypt. These tours and trips are supplemented by a lecture series. While the institute subsidizes a large portion of the expenses, including transportation (except where air travel is involved) and entrance fees, students are required to pay for their food and lodging.

The Arabic Language Institute cultural program also includes a cultural component featuring activities such as calligraphy, music, folkloric dance and an overview of Egyptian films.

In addition, the program includes an end of semester summer party which is organized with the active participation of the students.

Besides the above activities, in the summer semester, the Arabic Language Institute offers a series of weekly lectures covering the cultural, educational, economic and political aspects of life in Egypt.

Arabic Language Intensive Summer Program Courses (ALIS)**ALIS 101-102-103-104 Elementary Modern Standard Arabic (2-3 cr. each)**

Develops a fundamental working knowledge of the language through interactive exercises and drills within a framework of the essentials of syntax and morphology. Each course meets 7 or 10 hours in summer.

ALIS 111-112-113 Elementary Colloquial Arabic (2-4 cr. each)

Introduces students to the spoken Arabic of Cairo. Concentrates on enabling students to communicate effectively in daily life. Targets high frequency vocabulary and social situations and emphasizes pronunciation. Each course meets seven hours per week.

ALIS 121-122 Elementary Writing (1-3 cr. each)

Develops basic writing skills useful in daily life. Trains students to summarize short informative passages and complete practical tasks such as filling out forms, writing messages, invitations, etc. Each course meets three or five hours per week.

ALIS 131-132 Elementary Printed Media (1-3 cr. each)

Introduces students to the basic format of the Egyptian newspaper and acquaints them with the vocabulary and syntax of the Arabic press through the reading of simple news items. Each course meets three or five hours per week.

ALIS 171-172 Readings in the Qur'an (1 cr. each)

Introduces students to the Qur'an, its structure, and a selection of its simpler verses. Addresses basic grammatical issues, while focusing on comprehension, oral repetition, and correct reading. Each course meets three hours per week.

ALIS 191-192 Supervised Studies (1-4 cr. each)

Offered in summer.

Study of a selected topic according to the students' level and interests. Each course meets two to seven hours per week. May be repeated for credit when content changes.

ALIS 201-202-203-204 Intermediate Modern Standard Arabic (2-3 cr. each)

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 per week.

ALIS 211-212 Intermediate Colloquial Arabic (2-4 cr. each)

Concentrates on increasing student's vocabulary and command of syntax, with a higher level of fluency. Enables students to communicate with native speakers in a wide variety of social situations. Each course meets five or seven hours per week.

ALIS 221-222 Intermediate Writing (1-3 cr. each)

Develops students' ability to meet short practical writing needs. Trains students to summarize informative and narrative passages, gradually introducing more complex structures. Each course meets three or five hours per week.

ALIS 231-232 Intermediate Printed Media (1-3 cr. each)

Exposes students to a wider range of topics selected from the Arabic press. Emphasizes vocabulary and idiom acquisition, and begins to develop students' ability to read for speed. Each course meets three or five hours per week.

ALIS 233-234 Intermediate Aural Media (1-3 cr. each)

Further develops students' listening skills while expanding their vocabulary, especially in the areas of politics and economics. Increases their ability to comprehend details. Each course

meets three or five hours per week.

ALIS 241-242 Intermediate Translation (1 cr. each)

Translation of close reading and analysis of Arabic texts covering a wide range of topics. The course employs translation into English as a means to enhance students' knowledge of Arabic vocabulary, idiomatic expressions and complex structures. Translation from English into Arabic is used to train students to produce coherent and correct Arabic texts. Issues and techniques related to the practice of translation are dealt with, but the primary focus is on Arabic language learning.

ALIS 252 Readings in Modern Arabic Literature (1 cr.)

Selections from a variety of prose writings. Course meets three hours per week.

ALIS 271-272 Readings in the Qur'an (1-3 cr. each)

Introduces a wide selection of verses, thoroughly addressing grammatical and syntactical issues. Trains students to recite with great precision. Each course meets three or five hours per week.

ALIS 291-292 Supervised Studies (1-4 cr. each)

Offered in summer.

Study of a selected topic according to the students' level and interests. Each course meets two to seven hours per week. May be repeated for credit when content changes.

ALIS 301-302 Advanced Modern Standard Arabic (2-3 cr. each)

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 in summer.

ALIS 311-312 Advanced Colloquial Arabic (2-3 cr. each)

Develops students' ability to express themselves more precisely and fluently. Uses authentic material, whether recorded or written, to encourage discussion. Each course meets five or seven hours per week.

ALIS 321-322 Advanced Writing (1-3 cr. each)

Equips students to write at greater length using a variety of techniques, including description, comparison, contrast, argumentation, etc. Refines students' ability to write cohesive summaries. Each course meets three or five hours per week.

ALIS 331-332 Advanced Printed Media (1-3 cr. each)

Introduces more complex and analytical articles and editorials from the Arabic press. Further develops students' ability to skim. Each course meets three or five hours per week.

ALIS 333-334 Advanced Aural Media (1-3 cr. each)

Trains students to take while listening to broadcasts. Expands their range of vocabulary and develops their ability to listen to lengthier passages. Each course meets three or five hours per week.

ALIS 341-342 Advanced Translation (1 cr. each)

Focus in this course is more on problems and issues of translation. Students are expected to produce coherent, culturally sensitive texts in both languages. Graded authentic texts are used.

ALIS 352 Readings in Modern Arabic Literature (1 cr.)

Selections from a variety of prose writings: short stories, novels, plays, and poetry by writers from different Arab countries. Course meets three hours per week.

ALIS 391-392 Supervised Studies (1-4 cr. each)

Offered in summer.

Study of a selected topic according to the students' level and interests. Each course meets two to seven hours per week. May be repeated for credit when content changes.

Center for Arabic Study Abroad (CASA)

Director (U.S.A.): Martha Schulte-Nafeh, University of Texas at Austin, TX

Co-Director (Cairo): Zeinab Taha

Executive Director: Iman Soliman

AUC's Arabic Language Institute also houses the Center for Arabic Study Abroad (CASA), an intensive advanced Arabic program for American graduate and undergraduate students who have had at least two years of instruction in Arabic. CASA is a consortium of twenty-eight American universities, including AUC and it receives funding from the U.S. Department of Education, the Mellon and Ford Foundations with support from the Binational Fulbright Committee in Egypt, in addition to program fees paid by participants. Its objective is to raise the level and broaden the base of Arabic language competence in the American academic community.

AUC's Arabic Language Institute offers a CASA twelve-month program beginning in June. Students in the full-year program develop a facility in the use of the four major language skills: speaking, listening, reading and writing. The CASA II program aims to provide further opportunities for CASA fellows, who have completed the CASA full-year program within the past five years, to continue to enhance their language skills and advance their Arabic-based research in Egypt. The CASA II program offers the opportunity to study for one or two semesters (fall or spring or both). In addition to these programs, CASA provides a program in Arabic for professors in the humanities & social sciences called CASA III. This program is generally offered in the summer, but can also be offered for two months during the fall or the spring.

Students are chosen to participate in the program on the basis of a competitive examination given every February in the United States. They must be American citizens or permanent residents, and be enrolled in a recognized institution of learning in the United States or Europe. During their CASA studies they are enrolled at AUC.

Students enrolled in AUC's academic or intensive Arabic programs are eligible to apply for CASA. The CASA examination is given in Cairo at AUC every February at the same time that it is given in the United States.

Applications and further information on fellowships can be obtained from: Director, Center for Arabic Study Abroad, University of Texas at Austin, WMB 6.102, 1 University Station, F9400, Austin, TX 78712-0527, and from the CASA web page: UTCasa@austin.utexas.edu

Center For Arabic Studies Abroad Courses (CASA)

CASA 401 Egyptian Colloquial Arabic (4 cr.)

Offered in summer.

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.

CASA 411 Modern Standard Arabic (4 cr.)

Offered in summer.

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.

CASA 501 Egyptian Colloquial Arabic (3 cr.)

Offered in fall.

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.

CASA 502 Advanced Egyptian Colloquial Arabic (3 cr.)

Offered in Spring.

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.

CASA 521 Listening and Speaking (3 cr.)

Offered in fall.

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.

CASA 522 Academic Listening and Speaking (3 cr.)

Prerequisites: CASA 411 and CASA 521. Offered in spring.

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.

CASA 531 Reading, Writing and Vocabulary Building (5 cr.)

Offered in fall.

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.

CASA 541 Advanced Writing (3 cr.)

Offered in spring

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.

CASA 551 Advanced Translation (3 cr.)

Offered in spring.

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.

CASA 552 Advanced Media (3 cr.)

Offered in spring.

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.

CASA 553 Selected Topics in Arabic (3 cr.)

Offered in spring.

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.

CASA 555 CASA Students without Borders (2 cr.)

Offered in fall through spring.

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.

English Language Institute

School of Humanities and Social Sciences

Director, English Language Institute: A. Agameya

Intensive English Program Interim Coordinator: S. Farag

ELI Language Assessment Specialist: E. Arrigoni

English 100 Coordinator: M. Hafez

English Language Instructors: N. Aboul Fetouh, E. Arrigoni, M. Ateek, M. Bishara, V. Carpenter, C. Clark, A. Demian, S. Esnawi, S. Farag, S. El Farnawany, H. Garas, C. Good, K. Helmy, M. Iskander, R. Jabr, L. Kamal, F. Kassabgy, N. Kassas, N. Khafagi, S. Abdel Hady Makhoulouf, R. McAuley, A. Mishriki, J. Moos, H. Nashed, M. El Saady, M. Sarofim, H. Shawarbi, A. Shebeenie, E. Yoder, M. Osman, Y. Salah Eldin, M. Hughes

While the English Language Institute offers the master's and diploma programs in TEFL as described under "Fields of Study," 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

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 fifty two 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.

Undergraduates

Intensive English Program

The intensive program for undergraduates offers English 98 (Intermediate English), and English 99 (Advanced English). Students are placed in one of the two levels according to their scores on TOEFL with TWE.

Undergraduate students in the Intensive English Program (IEP) are allowed to take up to a full calendar year to reach the freshman English level (ENGL 100 or RHET 101 or 102). For example, students entering the IEP in the spring who do not reach the freshman English level by the end of

that semester may attend the summer session and the following fall semester. If at the end of one calendar year a student still has not attained the required freshman level, he/she will be suspended.

Content of Courses

Students are placed in sections normally comprised of up to seventeen students, according to levels of proficiency. Students are given a grammar review, extensive reading and writing practice, advanced vocabulary review, instruction in study skills, and practice in speaking and listening comprehension. Integration among these skill areas is stressed at all levels. Grading in this course is on a Pass/Fail system.

Attendance

Attendance and participation are considered so important to this intensive language program that a student who for any reason misses the equivalent of seven days of class (thirty-five hours) in any one semester will be asked to withdraw. Students who withdraw from the IEP may not sit for the TOEFL until six months have elapsed from the date of their last examination. Applicants for readmission may not submit a TOEFL (plus TWE) score. If their score is IEP level, they will be allowed to return to the IEP. Students who are asked to withdraw but fail to do so will be suspended.

Suspension

Students who are suspended may apply for readmission with an ELPET score; TOEFL scores are not accepted for readmission.

Academic English for Freshmen (ENGL 100)

English 100 is a concurrent course in which classes meet five days a week for a total of fifteen. A student who for any reason misses thirty-six (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 (3 cr.)

Course addressing broad intellectual concerns and accessible to all first-year students as part of the Primary Level Core. May be taken concurrently with ENGL 100.

Graduate Programs

Graduate students who are otherwise qualified to enter the university but whose English does not meet the necessary level of proficiency, based on the applicant's performance on the TOEFL with

TWE, will be admitted to ELIN 120 or 121, or placed in the appropriate modules of ENGL 123-125.

Graduate students in the intensive ELIN 120 and 121 courses are allowed a maximum of two semesters and a summer (or three semesters if no summer session is offered) to reach the level of Academic English for Graduates (see Academic English for Graduates in this section).

Intensive English for Graduates

The intensive program for graduate students offers ELIN 120 (intermediate) and ELIN 121 (advanced). Students are placed in one of the two levels according to their scores on the TOEFL with TWE. Students in these courses are not allowed to concurrently enroll in other AUC courses.

Content of Courses

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

Attendance

Attendance and participation are considered so important to this intensive language program that a student who for any reason misses the equivalent of more than 21 class hours in any one semester will be asked to withdraw. Applicants for readmission may submit a TOEFL (plus TWE) score. If their score is the intensive level, they will be allowed to return to ELIN 120 or 121. Students who are asked to withdraw but fail to do so will be suspended.

Suspension and Readmission

Graduate students suspended from ELIN 120 or 121 must petition for readmission and must meet all the admission requirements prevailing at the time of readmission. Readmission is not granted automatically. Students suspended from ELIN 120 or 121 who are readmitted to the university must score high enough on the TOEFL (plus TWE) for direct admission to Academic English for Graduates or higher, as they will not be allowed to return to ELIN 120 or 121.

Academic English for Graduates

Academic English for graduate students consists of three non-credit modules covering effective writing (ENGL 123), academic reading (ENGL 124), listening and speaking (ENGL 125). Students who are taking all their required modules may take other courses at the same time, thus enabling them to apply what they are learning in these modules to what they will be expected to do in other graduate courses. Grading in these modules is on a Pass/Fail system.

ENGL 123 meets for two hours two times a week, while the other two modules (ENGL 124 and 125) meet for two hours one time per week. Students who have part-time or full-time jobs are strongly advised not to attempt other undergraduate or graduate courses until they have completed their academic English requirements. Students enrolled in any of the modules are expected to spend at least three hours per week outside of class in preparation for each weekly class meeting of each module in which they are enrolled (e.g., a student enrolled in three modules should expect to spend at least 9 hours per week outside class plus eight hours per week in class).

Generally students taking the modules are limited to taking courses according to the

formula below:

Required Academic English modules

3 modules

2 modules

1 module

Students may take

One undergraduate course

One undergraduate or one graduate course

Two undergraduate or graduate courses

Any student who withdraws from a module must first withdraw from any non-ENGL courses. Students who fail any given module(s) may repeat the module(s) twice. Students who are repeating a given module will not be allowed to take concurrent courses without the written approval of the coordinator of Academic English for graduates. Students who fail the same module three times will be disqualified but may apply for readmission. Applicants for readmission must score high enough on the TOEFL (plus TWE) to be exempt from English courses as they will not be allowed to return to ENGL 123-125.

Incoming Student Abroad, Outgoing Exchange Programs

Associate Provost for International Programs: A. Lesch

The American University in Cairo welcomes international students for a full academic year, semester, summer session or winter term, on a visiting basis in its undergraduate and graduate programs. Study abroad students attend the same classes and are accorded the same student life participation opportunities as regular, degree-seeking students. AUC is recognized as an approved overseas study site by numerous institutions worldwide. As AUC is US-accredited students can transfer credits earned at AUC to their home institutions. As many as a hundred colleges and universities are represented on campus at any given time, including Duke, Northwestern, Notre Dame, and Tufts universities and the universities of Bergen and Oslo in Norway. Most international students attend AUC on a study abroad basis, under which they pay regular AUC tuition and fees in US dollars. Students enrolled at public universities in the US pay the out-of-state-tuition rate at 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.

AUC provides study abroad and exchange opportunities for regular, degree-seeking students to study in the United States, Canada, Europe, Asia, and the Middle East at the undergraduate and graduate levels. Most AUC students study overseas on an exchange basis, under which they pay tuition and fees to AUC. Students from the partner universities pay the tuition and fees of their home university. AUC currently has 42 exchange partners, which include Pennsylvania State University, the University of California system, University of Washington (Seattle), Reed College, Wellesley College, Virginia Tech, University of Virginia, Georgetown, Marquette, University of Arizona, and Drexel University in the United States; Kansai Gaidai and Akita universities in Japan; Concordia and Simon Fraser universities in Canada; St. Andrew's University and the University of East London in Great Britain; Sciences Po, Lund University, Bocconi University, and the Free University of Berlin in continental Europe; and Bogazici University (Istanbul), The American University of Beirut, and Carnegie Mellon/Qatar in the Middle East.

The International Programs Office handles special academic programs organized by overseas universities on a short-term basis, such as two- to three- week study programs in the winter term or four- to seven- week programs in the summer semester led by overseas university faculty and held on AUC premises. These special academic programs often utilize AUC faculty and house their students in AUC dormitories. Universities with which AUC has cooperated include Seton Hall Law School, Grand Valley State University, Lafayette College, St. Olaf's College, University of Delaware, and John Jay College.

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.

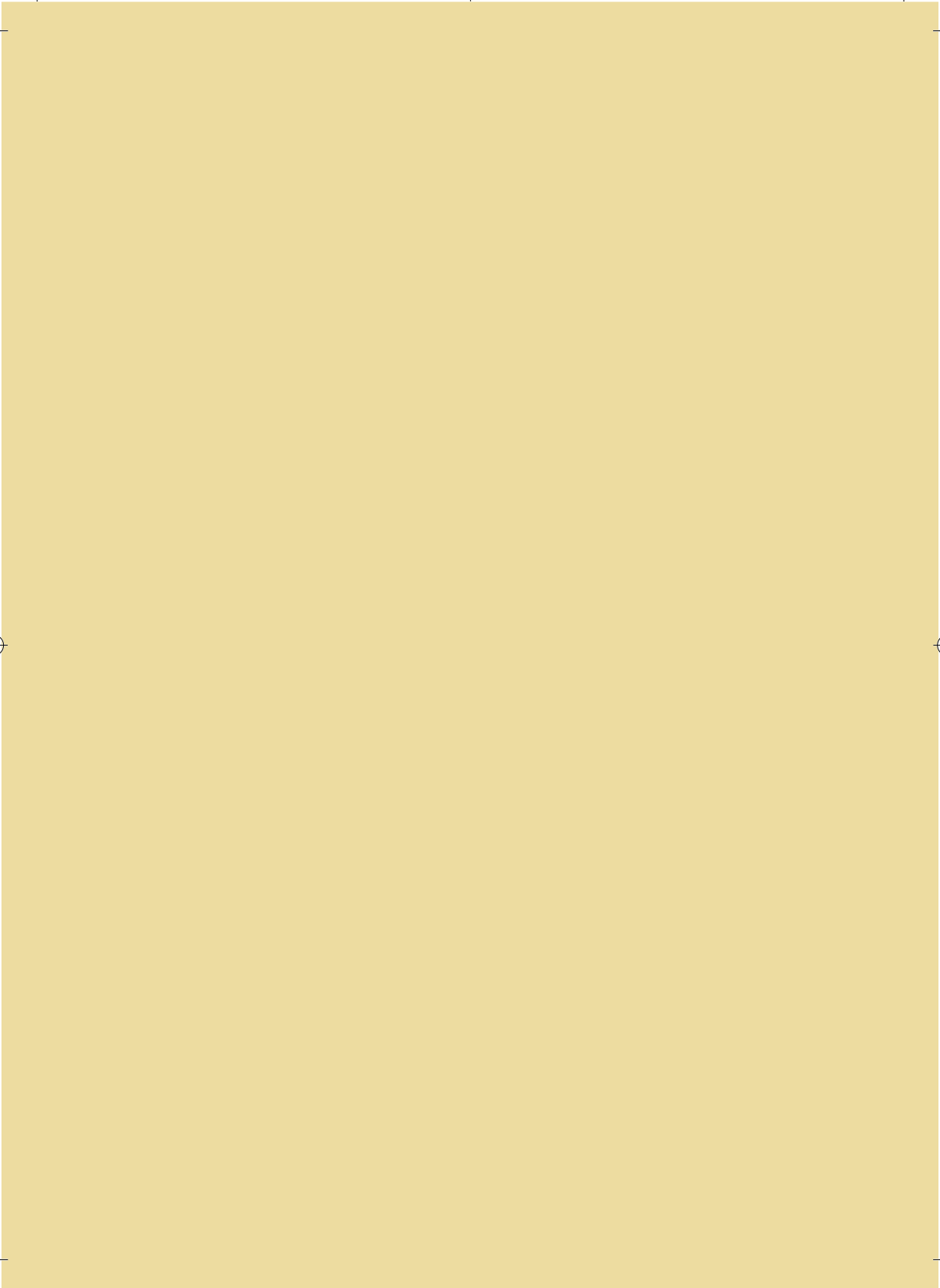
Students can choose from a wide range of courses which are usually offered during the AUC summer session. Besides those courses that are usually oversubscribed during the academic year, every effort is made to offer courses of special interest to international students, such as Islamic art and architecture, 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.





Research

Research

Research represents an important commitment of the American University in Cairo, whether as the fruit of individual faculty effort, or part of an externally funded project. One of the objectives of the undergraduate program is to equip students with the attitudes, skills, and knowledge needed to undertake independent scholarly investigation. In most Master's programs a thesis is required, providing opportunities for students to explore research topics in depth under the close guidance of faculty advisers. The Doctoral program in Applied Sciences and Engineering requires that the candidates complete a dissertation, which results from a concerted research effort by each candidate under the supervision of a faculty advising committee.

Faculty research is heavily encouraged, and is recognized by the university as an important factor in promotion and tenure decisions. For many years the university has offered research and conference grants to full-time faculty to enable them to attend scholarly and professional conferences and to carry out research either in Egypt or abroad. Faculty of professorial rank may apply for a full-year or a one-semester sabbatical leave every seven years to undertake research and writing, and to participate in the intellectual life of other institutions. Administrative support for research is provided by the Office of the Associate Provost for Research Administration as well as the Office of Sponsored Programs.

In addition, several units of the university are devoted exclusively to research, including the Social Research Center, the Desert Development Center, the Cynthia Nelson Institute for Gender and Women's Studies, the Prince Alwaleed Bin Talal Bin Abdulaziz Alsaud Center for American Studies and Research and the Youssef Jameel Science and Technology Research Center.

Please consult the AUC website for more information about faculty research interests and projects.

Research Support Offices

Office of the Associate Provost for Research Administration

Director: Associate Provost G. Harman

The Office of the Associate Provost for Research Administration is committed to promoting and strengthening research across the University.

The Office acts as a catalyst in initiating research activities in addition to providing administrative support to AUC faculty. Interdisciplinary activities such as environmental and developmental studies are encouraged. In consultation with the Research Advisory Council, the Office recommends policy and interfaces with the Senate Faculty Affairs Committee on issues related to faculty research.

The Associate Provost for Research Administration handles all University-funded conference, research, research development, mini and teaching enhancement grants. In 2009-2010, 219 faculty members received support amounting to about \$624,298. One hundred and twenty nine faculty members received conference grants, fifty-one received research grants, twenty-six

received mini grants, three received research development grants, twelve received teaching enhancement grants, and one received a coordination of conference/workshop grant.

The Office publishes lists of faculty research interests and graduate theses in order to raise the profile of research within the AUC community and to encourage networking and collaborative research, in addition to disseminating AUC's research activities to other educational entities in Egypt and abroad. The Office sponsors the annual AUC Research Conference, which provides a forum for faculty and graduate students to discuss research issues of common interest. The Office provides administrative support for scholarly seminars and conferences held at AUC. The Office of the Associate Provost for Research Administration collaborates with the Office of Sponsored Programs and the Office of Development in promoting externally funded research and soliciting sponsored projects.

The Office of the Associate Provost for Research Administration also coordinates and administers the activities of honorary degrees, Wisner awards, distinguished visiting professors, and merit awards in research, service, and teaching.

Office of the Dean of Graduate Studies

Director: Dean A. Shaarawi

The Office of the Dean of Graduate Studies is dedicated to promoting and strengthening graduate studies and research across the University.

In graduate studies, the Office coordinates graduate student recruitment and admissions, registration, non-academic advising, counseling, orientation and services; administers and monitors fellowships, assistantships, and work-study programs; collaborates with the Office of Student Financial Affairs in developing financial aid programs for graduate students; and coordinates and monitors graduate programs in the University. In consultation with the University Graduate Council, which is composed of the coordinators/directors of the graduate programs in addition to student representatives and chaired by the Dean of Graduate Studies, the Office recommends policy and interfaces with the Senate Student Affairs Committee on issues related to graduate students, and with the Senate Academic Affairs Committee on issues related to graduate programs. The Office works together with the Office of Development and the Office of Sponsored Programs on soliciting external funding for graduate fellowships.

Office of Sponsored Programs

Director: D. Adly

The Office of Sponsored Programs (OSP) represents the University in matters related to external funding for research, training, and public service projects. It reviews agreements, monitors performance and ensures that both university and sponsor terms and conditions are met during implementation of externally funded programs.

The Office assists faculty in the preparation of proposals, including editing, and budget

development in accordance with sponsor guidelines and AUC policy. It also keeps the University community updated on grant opportunities, research funding competitions and other relevant information. Proposal writing workshops are offered by the office to faculty and staff to strengthen proposal writing skills.

OSP provides access to searchable databases of information on potential funding sources, such as the Community of Sciences (COS). COS Funding Opportunities is the largest, most comprehensive database of available funding that provides a full range of Internet-based services for researchers in all disciplines. In addition, proposal writing materials, and aids are available at the office for lending to faculty who require some assistance in proposal writing techniques.

OSP also has a web page on the AUC web site with information on OSP services, upcoming grant opportunities, budgetary information and AUC policies regarding external project approval, administration and implementation.

Research Centers

Access to Knowledge for Development Center (A2K4D)

Director: N. Rizk

Access to Knowledge for Development Center (A2K4D) was established in 2010. It is a center for academic scholarship, research and policy analysis on access to knowledge for development in Egypt and the Arab world. A2K4D promotes multi disciplinary research meant to further conceptualize and investigate the economic, legal, political and social issues confronting access to knowledge in Egypt and the region. Based on solid theoretical foundations, A2K4D research offers rigorous empirical analysis of public policy in areas as diverse as ICTs, software, health, trade, education, culture and agriculture. A2K4D research will provide policy makers, negotiators and international representatives with well-researched intellectual property alternatives, recognizing the relationship between knowledge and human development. Research would also help devise well thought of business models that address the tension between the interests of knowledge users and producers.

A2K4D will serve as a regional research hub for A2K scholars, working towards developing a strong network of academic researchers with partners from civil society, industry, policy bodies and other stakeholders. A2K4D works in close collaboration with the overall global A2K movement and partners within the Access to Knowledge Global Academy (A2KGA)

AUC Forum

Director: B. Korany

To counter the widespread perception of academia as an ivory tower, the AUC Forum was established in 2006 as a unique initiative to increase the interaction and dialogue between members of the community and the university's scholars on important social and political issues,

national and international. The AUC Forum applies respected academic standards to the analysis of policy-oriented issues. In addition, it highlights questions that act as a bridge between the Middle East and the wider world. To this end, the Forum, alone or in collaboration with national, regional and international institutions holds conferences, international workshops and panels on timely topics crucial to the region and the world in the 21st century.

Its work includes, at one end, collaboration with United Nations agencies to discuss global issues and send AUC students for internships in New York. At another end, the Forum invites distinguished Arab speakers to answer questions about their intensely debated published autobiographies to reveal issues of the individual in society across time. Through its activities, the Forum goes beyond conventional wisdom and stereotypes about the region to attract attention to deeper currents of thought and behavior in Arab societies in relation to the rest of the world.

The Forum has already published two books under its name:

1. Bahgat Korany & Ali E. Hillal Dessouki (eds.): *The Foreign Policies of Arab States; The Challenge of Globalization*. Cairo & New York, American University in Cairo Press, 2008 (3rd edition).
2. Bahgat Korany (ed.) *The Changing Middle East; A New Look at Regional Dynamics*. Cairo & New York, American University in Cairo Press, 2010.

The possibility of translation for an Arabic edition is already in progress.

Activities

- Panels
- Workshops
- Conferences
- Book publishing
- Networking
- Research collaboration

For more information about the Forum, please visit
<http://www.aucegypt.edu/ResearchatAUC/rc/aucforum>

Desert Development Center

Professor Emeritus: A. Bishay

Director and Research Professor: R. N. Tutwiler

The AUC Desert Development Center (DDC) was established in 1979 as a center of excellence in applied research and training. As an integral part of AUC, the DDC shares the University's educational mission and, in particular, the goal of carrying out applied research to address development challenges facing Egypt and the Middle East and North Africa Region. In addition, the DDC serves as a bridge linking together scientists and researchers in the Egyptian national institutions and civil society with their colleagues at AUC, in the Region, and in the global community. The focus of the DDC is on the environmental, social, and economic sustainability of desert communities through increased productivity and economic benefits, enhanced diversity of outputs, and improved conservation of natural resources. The DDC maintains an extensive program of research, training, and informational activities to meet its objectives.

The DDC operates two field research stations. The smaller (11 hectares) is in the urban desert development complex of Sadat City some 90 kilometers northwest of Cairo, where the research emphasis is on small-scale, labor intensive, high value agricultural activities suitable for household enterprises in urban and peri-urban desert situations. The larger research station (240 hectares) is located about 140 kilometers northwest of Cairo in the South Tahrir section of newly reclaimed desert land in Buheira Governorate. At South Tahrir, the research focus is on the needs and problems of new rural settlements in the desert, and especially the adaptation and integration of traditional farm enterprises, together with modern technologies, in sustainable farming systems for new desert settlers. The DDC operates a residential training facility with a capacity of 150 men and women trainees on the grounds of the South Tahrir Research Station. Since 1993, thousands desert farmers have received practical, hands-on training at the DDC Research Stations, where a wide range of operational demonstrations are maintained for instructional purposes. The DDC currently maintains a full time professional staff of over 55 researchers, trainers, and support personnel, in addition to 24 part-time faculty seconded from Egypt's national universities and research institutes.

As a key institute within the American University in Cairo, the DDC is a non-profit organization obtaining the majority of its operating funds from charitable grants and donations.

Research Program

Within the strategic goals of research and training for sustainable desert development, the DDC research program can be characterized under four categories:

Externally-funded Research Projects:

These are research activities based on formal proposals with specified outputs and limited duration supported financially from grants by donor organizations. A sample of recently completed and currently operational externally-funded projects include:

- Adaptation and propagation techniques of Australian pine trees (*Casuarina* species) inoculated with *Frankia* bacteria strains to promote fast growing, nitrogen fixing shelter belts with low water utilization in new desert farms and communities.
- Local Institutional Frameworks for Poverty Alleviation and Reducing Environmental Degradation in Rural Egypt.
- Assessing the Performance of Water User Associations in Egypt.
- Optimizing water use by annual and perennial crops under different desert farming systems.
- Improved architecture for desert farms and communities utilizing local materials and renewable energy.
- Utilizing renewable energy and recycling agricultural waste in desert farms and communities.

Collaborative Research and Development Programs:

The DDC has established collaborative research and development activities with other research institutions, private sector bodies, universities, and other institutions that have similar interests in desert development. Examples of current collaborative activities are:

- Socio-economic Baseline Survey and Pre-Project Characterization of the New Lands of the East Delta Development Region.

- Collaboration with the Agha Khan Foundation to develop a working model nursery at the DDC South Tahrir Station for the propagation and adaptation of ornamental trees, shrubs, climbers, and ground cover plants in South-Tahrir for establishing a National Park in the old city of Cairo.
- Cooperation with the Sixth of October Company for Agricultural Projects to establish a research and development program for the Shabab Area, West Suez Canal region.
- Cooperation with the East Delta Desert Settlement and Development Project to establish a Socio-economic Baseline and Pre-project Characterization of the settlers and new lands in the East Delta area.
- Cooperation with the Ministry of Agriculture and the GTZ in the National Project for Improvement of Citrus Production in Egypt.
- Cooperation with the Central Laboratory for Agricultural Climate, Agricultural Research Center, Ministry of Agriculture and Land Reclamation to collect and analyze micro-climatic data at the DDC South Tahrir Station for use in modelling crop growth and pest and disease incidence due to climatic factors.
- Cooperation with Cairo university, Fayyoun Campus on screening for resistance to nematodes in tomatoes, adaptation of improved varieties, and establishment of economically sound organic production systems for small holders.

Individual Research Programs:

The DDC hosts individual post-graduate and undergraduate students, as well as non-degree researchers, provided that the individual research topics contribute to the goals and mission of the DDC. Students may be affiliated with AUC, national, or international universities or institutions.

Operational Experimentation and Assessment:

In-house applied research activities are directed to solving production and sustainability problems on the research stations of the DDC. These activities include conducting experiments and trials, testing new techniques or methods, and establishing demonstrations for training purposes. In addition to addressing immediate problems, operational experimentation and assessment of performance often provides essential information for preparing proposals for externally-funded research projects.

Training Program

DDC has established a training center unique in Egypt for its excellent residential and educational facilities located on site within an exemplary newly developed desert farm. The DDC training facility has been utilized by international and national training and development agencies; governmental and non-governmental as well as universities, research centers, and individuals.

National Training Programs on Desert Development for University Graduates

Egypt's success in expanding desert development programs while accelerating their effectiveness depends, in large part, on its ability to produce substantial numbers of people who command basic desert farming skills, and who are well grounded in desert agricultural technology. Competent, action-oriented desert agriculture workers and leaders can be produced

through appropriately and purposefully designed training programs.

The DDC has been training new desert settlers since 1993 through grants provided by the Ministry of Agriculture and Land Reclamation under the United States Department of Agriculture 416B Program. The residential training at the DDC facilities is tailored to the specific needs of new settlers on small farms, many of whom have no prior experience in agriculture or farm management. The training exposes them to the major issues in developing sustainable farms and farming systems on their newly reclaimed land. In addition, they are given demonstrations and knowledge about renewable energy use and environmentally appropriate house construction and maintenance. Altogether, the DDC has trained thousands of new settlers since the inception of this program in a wide diversity of subjects in sustainable desert agriculture and resource management.

Continuing Education and Short Evening Courses

This program caters for the needs of desert farm managers and owners needing specific technical and managerial expertise. The Program consists of a series of four-week modules with three-hour class instruction twice a week at AUC in the evenings and a full working day at the DDC sites each weekend. The courses and field visits emphasize hands-on experience and deal mainly with practical problems faced by the participants. A total of almost one thousand men and women have participated in this program.

Training Programs with National Universities

The DDC provides national universities in Egypt with a variety of summer and winter session opportunities for training their students in the applied aspects of desert agriculture and development. These arrangements include the Open Education Program with Cairo University and Summer Session Practicum activities with Alexandria University, Cairo University, and Tanta University. These group-training sessions are in addition to individual student research programs conducted at the DDC research sites.

Individual Special Training

DDC offers tailored training programs for both Egyptians and non-Egyptians upon the request of individuals or their sponsors.

Internship Programs

The DDC offers two different types of internships: academic internships and residential internships. Both of these categories are open to students within and outside of the AUC community.

Academic internships are set up in consultation with interested students' academic departments. Working with DDC staff, graduates and undergraduates establish terms for their internships, including a project schedule and provisions for evaluation. If the conditions of the internship are met, students gain academic credit.

Residential internships are designed for students who wish to further their knowledge of desert economic activity by living on site. Such internships may be tailored to individual needs by

focusing on specific areas of interest, such as irrigation design, banana cultivation, etc.

The DDC also sponsors one intern through AUC's Presidential Intern program each year.

Direct Services to Desert Communities

In recent years, DDC interaction with desert communities has extended to virtually all the major desert development areas in Egypt. In addition to the areas west of the Delta where the DDC facilities are located, the DDC has been active in the East Delta zone, Port Said reclamation area, Fayyoun settlement area, East Oweinat area and Tushka in the far south. Services provided to desert communities include:

- Land survey and soil, water and plant chemical and physical analysis,
- Soil, water and plant microbiological analysis (nematode, insects, mold, rot, pathogens, etc.),
- Clinical services for diseased plants,
- Improved, higher value crops and varieties, which the DDC has tested and adapted to desert conditions. Tissue culture products and selected citrus fruit and wood-trees species are representative examples,
- Consultancies and advisory services for farm land use planning and management,
- Extension and outreach services are provided to farmers and investors through on-and off-farm demonstrations, meetings and pamphlets,
- DDC, in cooperation with the National Illiteracy Education Program, has offered evening literacy classes for both men and women in villages neighboring DDC research stations.

El-Khazindar Business Research and Case Center

Director: A. Tolba

KCC is the first case center in Egypt. It was established in 2007 to publish case studies and other educational services, which provide students with participant-centered learning tools. The center aims at serving its various stakeholders including students, Faculty, industry, and training companies, through providing them with high-quality cases and business research on the Middle East and North Africa (MENA) region. Its services are dedicated to improving the quality of business education, connecting businesses and students in the region, and ultimately contributing.

Prince Alwaleed Bin Talal Bin Abdulaziz Alsaud Center for American Studies and Research

Director: M. Shahin

The Alwaleed Center for American Studies and Research promotes a scholarly multidisciplinary approach to the study of the United States of America addressing the concerns and needs of Egypt and the Arab world. To this end, the Center's programs facilitate, encourage, and disseminate objective, in-depth research on American subjects. It seeks to enhance the collection of library materials necessary to support students and scholars from AUC and beyond in serious research on American subjects and to facilitate access to those resources. It organizes

conferences, seminars, lectures, short courses and publications designed to contribute to a more sophisticated analysis of America's varied societies and cultures among academics, professional groups and interested publics in Egypt and the Middle East.

Located at AUC, the Center reaches out to Arab scholars promoting collaborative scholarly activities with research institutions across the Arab world and throughout the globe.

Social Research Center

Director and Research Professor: H. Rashad (Demography)
 Habib Ayeb (Geography), R. Hamed (Statistics), Z. Khadr (Demography), R. Langsten (Sociology), S. Mehanna (Political Science), R. Saad (Anthropology), S. El-Saadani (Demography), M. Al-Sharmani (Anthropology), S. Shawky (Public Health), S. El Sheneity (Statistics), H. Sholkamy (Anthropology), H. Zaky (Statistics)

The Social Research Center was established in 1953 to conduct and encourage social science research in Egypt and the Middle East. The program aims to train researchers, and to guide and assist graduate students, scholars, and organizations engaged in social science research in the area. The SRC cooperates with agencies of the Egyptian Government as well as with universities and research institutes in Egypt and abroad.

The Center's Program

The Center's research program is multidisciplinary and combines qualitative and quantitative approaches to inquiry. It strives to inform policy formulation and implementation while contributing to knowledge in the social science disciplines.

Emphasis in the Center's substantive program is on health and gender and their social structure, social problems, social change, and development.

In the past, SRC has conducted studies of the Nubian communities, before and after relocation; the resettlement of reclaimed land; the historical and ecological development of Cairo; evaluation of urban neighborhood services; social and economic security in Egypt; agricultural marketing; farm mechanization and agricultural labor; patterns of cooperation among farmers; population and fertility, a broad spectrum of development issues, the role of women, urbanization, poverty, social epidemiology, maternal and child health, water and sanitation and the environment.

The recently introduced thematic directions of the Social Research Center include five programs. They are: "Gender and Women's Empowerment", "Health Inequities and their Policy Implications", "Investment Climate Assessment and Economic Development", "Social Policies and Poverty Alleviation" and "Population Challenges in the Arab Region".

In addition to its research activities, the SRC organizes training programs in various aspects of research methods and analytical techniques for the benefit of social scientists from the Middle East and North Africa. It convenes conferences, symposia, and workshops on topics included in its research agenda. The Center aims to contribute to developing skills and building institutional

capabilities in the region as well as to advancing public debate about priority social issues.

For more information please refer to SRC website at: www.aucegypt.edu/src

The Cynthia Nelson Institute for Gender & Women's Studies

Director: M. Rieker

The Institute for Gender and Women's Studies [IGWS] is a multi-purpose and interdisciplinary center that serves scholars, activists and policy makers interested in gender and women's studies in the Arab world, Southern Mediterranean, Turkey, the Caucasus, Iran and Africa. The primary function of the Institute is to serve as resource nexus within and through which research projects, educational programs, conferences, workshops, seminars and policy debates on gender and women's issues are engaged.

The John D. Gerhart Center for Philanthropy and Civic Engagement

Director: B. Ibrahim

The Gerhart center is a resource for the promotion of philanthropy and civic engagement in the Arab world. Established in 2006, the center aims to further the university's mission to advance social responsibility and active citizenship. Our mission is to promote social change in the Arab region through building a culture of effective giving and civic responsibility.

The Gerhart center's work on civic engagement includes interfacing with Arab universities to become more engaged with their surrounding communities and promoting cross-cultural understanding and diversity through international programs with a focus on local community service. Moreover, the center encourages and facilitates the practice of community based learning as a fundamental approach to effective teaching and fosters social innovation through student leadership programs, seminars for young professionals, and programs to link government institutions with civil society organizations.

On philanthropy the Gerhart center acts as a catalyst providing technical consulting services to start-up and expanding philanthropic institutions in the Arab region. It also collaborates with the private sector to deepen the understanding of the principles of Corporate Social Responsibility (CSR). Among the key areas of the center's work is documenting the status of Arab philanthropy while highlighting best practices, and promoting networking opportunities and strategic alliances for enhanced philanthropy in the Arab region and internationally.

The Gerhart center also engages in research and documentation on subjects ranging from motivations of youth activism to mapping of Arab philanthropy and disseminates information widely through a quarterly newsletter, a series of scholarly working papers and website www.aucegypt.edu/research/gerhart/Pages/default.aspx

For information, please send e-mail to gerhartcenter@aucegypt.edu

The Yousef Jameel Science and Technology Research Center

Director: Sh. Sedky

Co-Director: M. Welland

The Yousef Jameel Science and Technology Research Center (YJ-STRC) was established as a result of the generous support of 1968 AUC graduate Yousef Jameel. The center is interdisciplinary and draws on the expertise of the university's engineering and science departments. The center supports a variety of nanoscience and technology-oriented projects, which make use of the center's state-of-the-art equipment.

Research activities are centered around generic imaging, analysis and fabrication equipment and focus on nanostructured materials, surface chemistry, biotechnology and design and fabrication of micro-electromechanical systems. People are the center's key asset and, therefore, the center aims at attracting high caliber researchers from around the world who, together with the current members, contribute to its research themes and help steer its futures research activities.

The mission and main objectives of The Yousef Jameel Science and Technology Research Center are:

- To establish an internationally competitive research activity at AUC resourced and supported to the highest standards.
- To serve the research interests of the faculty and students in the departments of the School of Sciences and Engineering within the current and projected scope of activities in the Center.
- To interact through cooperative research projects with local regional and international institutions of higher learning and research.
- To forge links with industry.
- To become a recognized Center of Excellence locally, regionally and internationally.

The Center has five main research themes:

- Microfabrication
- Nanostructured Materials
- Surface Chemistry
- Biotechnology
- Environmental

The Center offers a limited number of Research Assistantships Graduate Fellowships and Doctoral Fellowships. Research Associates are Co-Principal Investigators who contribute to the Center's research projects from national or international organizations.

The Center's laboratories are equipped with state of the art facilities, and include a Central Laboratory and satellite laboratories such as the Biotechnology Lab located in the Biology Department, the Photonics Lab, a Clean Room facility located in the Physics Department, and a Materials Lab located in the Mechanical Engineering Department.

For more information, please visit the center's website at:
www.aucegypt.edu/research/jameel/Pages/default.aspx

The image is a full-page background photograph with a warm, golden-yellow color cast. It depicts a large, modern building with a prominent grid-like facade of windows. In the foreground, there is a circular fountain with several water jets spraying upwards. The scene is set outdoors with some trees and a paved area. The text "Continuing Education and Training Programs" is centered over the fountain area.

Continuing Education and Training Programs

Continuing Education and Training Programs

The University provides extensive continuing education and training programs to meet the needs of a wide variety of individuals and organizations in Egypt and the Middle East. This section gives a brief description of the programs offered by the School of Continuing Education, the Executive Education, Engineering and Science Services, and the Kamal Adham Center for Television and Digital Journalism. The training programs offered by the Desert Development Center and Social Research are described under their entries in the section on research. For more information about continuing education and training programs, please consult the publications listed by the respective unit or visit the AUC website.

School of Continuing Education

Dean: C. Norman

Associate Dean for Instructional Affairs: D. Boraie

Associate Dean for Finance and Administration: W. Galal

Established in 1924, as AUC Division of Extension, the School of Continuing Education (SCE) plays a vital role in community outreach and educational programming in Egypt and the Middle East. SCE originally served as an information center, supporting lectures, films and seminars. From its early beginning, courses, programs and certificates were added, originally in the areas of English language and business and later Arabic language and translation, computers, youth programs, foreign languages, teacher education and logistics management. Today SCE's instructional programs are divided into five divisions: Arabic and Translation Studies, Business Studies, Computer and Information Technology Studies, English Studies and Youth and Special Studies. Instruction is offered through regular and customized course offerings. Instruction takes place at AUC's Tahrir, Zamalek and Heliopolis locations and at the newly established John D. Gerhart Field Station in El Gouna. SCE's programs confer professional certificates as well as grant achievement certificates.

SCE Mission Statement

The mission of the School of Continuing Education (SCE) is to extend the resources of the American University in Cairo to Egypt and the region.

In carrying out this mission, the School of Continuing Education

- develops a variety of standardized and customized non-credit education and training programs for individuals as well as for the businesses and companies in which they may be employed;
- designs programs for personal enrichment across the lifespan;
- works with faculty throughout the university to assist and facilitate the design and delivery

Continuing Education & Training Programs 701

- of programs to nontraditional audiences often beyond campus boundaries;
- serves as an incubator for the development and testing of new program ideas and projects at the university.

SCE Instructional Divisions

The Arabic and Translation Studies Division offers classes in translation and simultaneous interpreting designed to provide a professional foundation in the interdisciplinary nature and practice of translation and interpretation. An intensive program in the training of Modern Standard Arabic and Spoken Arabic of Cairo Teachers and courses in colloquial Egyptian Arabic and Modern Standard Arabic are also offered.

The Business Studies Division meets the diverse needs of today's Egyptian and Middle Eastern business markets by offering mini-certificates, professional certificates, advanced professional certificates and certificates of attendance. The certificates provide students and clients with the necessary abilities to succeed in positions in the areas of sales and marketing, accounting, investment and finance, e-business, supervisory management and travel and tourism.

The Business Studies Division is an authorized training center for international associations such as the Cambridge Career Award. The division also offers review programs in the areas of accounting, investment and management such as the Certified Public Accountant (CPA), Certified Financial Analyst (CFA) and Certified Management Accountant (CMA).

The Computer and Information Technology Studies Division offers the full spectrum of Information Technology courses including programming, computer networking, database management, web designing, multimedia authoring, computer graphics production and e-learning programming.

The Computer and Information Technology Studies Division is a Cisco Regional Academy providing the Cisco Certified Network Associate (CCNA) international certification to those who are trained on the technical advancement of networking. The Division is a member of the Microsoft IT Academy Program.

The Computer and Information Technology Studies Division is an authorized training and testing center for the International Computer Driving License (ICDL) certificate. Training also takes place at several SCE sites and the international certificate is granted under the sponsorship of the UNESCO Office in Cairo.

The English Studies Division provides general English language courses at all levels of proficiency, as well as customized courses for members of various professions and for students preparing for the TOEFL, SAT and the Egyptian preparatory and secondary school certificate examinations and intensive, specialized English language courses for students enrolled in or preparing for SCE professional certificate programs. The English Studies Division is experienced in providing nationally and internationally recognized pre-and in-service English language teacher training through its institutional relationships to governmental agencies with the responsibility for improvement of education in Egypt. An example of this is the Ministry of Education's Language Methodology and Development Program, the first teacher-training

program of its kind in Egypt to be conducted via interactive videoconferencing.

The Division also organizes and hosts the annual international Skills Conference - for language education.

The Youth and Special Studies Division offers German, Spanish and French language courses for adults, German, English and computer courses for young learners, art courses, and an annual Junior Summer Program for youth between the ages of 6-14 years. The Division also offers customized and tutorial courses, seminars and workshops for the benefit of the general public and individual organizations as well as providing comprehensive administrative and logistical management support services for training programs, workshops and conferences.

SCE has also begun a post baccalaureate professional certificate program for teachers and administrators.

Providing assessment and proposals' support to the instructional divisions are the Educational Assessment and Quality Assurance and the Proposals Units. Other SCE organizational offices that provide services to the entire school are Educational Support Services, the Finance and Administration, the Communications and Marketing, and Smart Village offices.

AUC Smart Village

SCE operates an office at the Smart Village, which serves as a portal to the University for all AUC activities.

For More Information

Information on SCE's courses, programs and Catalog may be obtained from:
School of Continuing Education
The American University in Cairo
28 Falaki Street, Bab El-Louk, P.O. Box 2511
11511 Cairo, Egypt
Telephone: (20-2) 797-6853
Fax: (20-2) 792- 2643
Email: sce@aucegypt.edu
Website: www.aucegypt.edu/sce/Pages/default.aspx

Executive Education

School of Business (BUS)

Executive Education (EE) within the School of Business (BUS) started in the late 1970s. Since then, the programs have been successful in both local and regional markets and have attracted participants from private and public sector organizations, government entities, multinationals as well as individuals seeking personal development. Today, the portfolio of EE programs offered is considered one of the most diverse and comprehensive programs in Egypt. The programs are delivered through various channels; two main channels which include the

Continuing Education & Training Programs 703

Management Center (MC), established in 1977, targeting middle management and recent university graduates and the International Executive Education Institute (IEEI), established in 2008, offering high-end EE programs to address the needs of current and potential CEOs and senior management executives. In addition to the Citadel Capital Financial Services Center, established in 2006 and The Goldman Sachs Women's Entrepreneurship and Leadership Center (WEL), established in 2008, which serve as a blended channel to both students and executives.

International Executive Education Institute (IEEI)

Director: G. Howaidy
www.aucegypt.edu/business/ieei

The School of Business launched the International Executive Education Institute, IEEI, in 2008 to meet the demand of industry in the region for qualified world class executives. IEEI partners with the business community to serve industry at large through formulating strategic partnerships with the world's top business schools. IEEI provides a unique learning experience that captures intellectual stimulation together with valuable networking among business leaders in the region. With an expanding roster of international academic partnerships with the world's best business schools such as Kellogg School of Management, Marshall School of Business, National University of Singapore, Rotterdam School of Management IEEI designs and delivers both open enrolment and company specific programs for senior executives. In delivering company specific programs, IEEI combines cutting-edge academic knowledge with professional best practice suited to the context.

Vision: To be the leading regional platform for world class executive development and networking.

Mission: To enable current and emerging business leaders to master the necessary tools to grow their businesses in a challenging global environment.

Solutions Provided:

- Executive Development Programs: residential two to three week programs based in Egypt and the US are offered. In addition, modular non-residential programs are offered in Egypt.
- Executive Seminars: 2 to 3-day seminars are offered on topics such as corporate finance, innovation, leadership, competitiveness, asset and liability management, family business, IT-enabled strategy, global supply chain..
- CEO Forum Series: leading international experts share their latest insights and analysis with the business community.
- Company specific programs: designed specially to meet the unique training needs of executives in a company.
- Global Business Leader Series: designed to expose executives in Egypt and the region to cultural diversity and the challenges of growing a business globally.
- The Real Estate Academy: offers training programs for senior executives and professionals in Egypt and Singapore.
- Corporate Sustainability Capacity Building Program: in Partnership with Gerhart Center for Civic Engagement and Philanthropy.

Management Center (MC)

Director: A. Hamdy

www.aucegypt.edu/execed/mcenter

The School of Business (BUS), at the American University in Cairo, is home to one of the region's principal professional development training institutions. In 1977, the Management Center (MC) was established as a center of excellence to serve Egypt and the region, introducing professional development programs using a modern perspective of delivery and incorporating the latest management concepts and techniques. In 2009, the MC moved to its current location at the Falaki Academic Center, Down Town Campus.

The MC provides management education to more than 10,000 trainees annually in its different programs and projects. The MC alumni number, to date, is more than 100,000 managers and trainees from Egypt and the region dedicated to continued networking, professional development and educational activities. The management development programs presented by the MC cover a wide variety of offerings including; postgraduate diplomas, professional certificates, short courses and workshops in addition to tailor-made programs totaling over 300 different topics and titles.

Vision: To be the partner of choice for professional development in Egypt and the region.

Mission: To develop leaders capable of creating a positive impact on business results of their organizations in a growing and changing global marketplace.

Solutions and Services Provided:

- A comprehensive portfolio of professional training and educational programs
- Programs that both deliver classical management theories as well as current and emerging practices and techniques
- The MC provides the wide and diversified array of professional educational solutions in the following areas:
 - Professional Postgraduate Diplomas
 - Professional Certificates
 - Certificate Programs
 - Management Development Short Courses, Seminars and Workshops
 - Tailor made programs and courses

The MC is comprised of three institutes: Institute of Management Development (IMD), Institute of Banking and Finance (IBF) and Institute of Quality Management (IQM).

Institute of Management Development (IMD)

Director: A. Touni

The Institute of Management Development (IMD) was founded in 1977 to provide the professional development seekers with a strong foundation in current theory, and the latest management concepts and techniques. The institute affiliates with reputable international

Continuing Education & Training Programs 705

institutions offering world class learning experience.

the Institute of Management Development is currently offering professional postgraduate diplomas and professional certificates as part of its portfolio of programs, which also includes management development seminars.

Admission Requirements for Professional Postgraduate Diplomas & Professional Certificates:

- a) Bachelor's degree, with a minimum grade of 'Good', Otherwise a recommendation letter is required indicating a minimum of 2 years of related work experience.
- b) Passing the English Placement Exam (SCE-EWPT) or TOEFL exam in any local licensed TOEFL center with a minimum score of 500

1. Professional Postgraduate Diplomas (Accredited by the supreme Council of Universities in Egypt subject to renewal every 3 years)

Crisis Management (CMGT) This diploma is offered in collaboration with the Postgraduate College of the Police Academy. The program is aimed at developing the scientific and practical experience of staff and managerial and technical leaders working in security and service organizations in coping and dealing with crises and disasters. The diploma encompasses eight courses as follow:

- Planning for Crisis and Disaster Contingency
- Crisis and Disaster Prevention
- Crisis and Disaster Management
- Information Communications and Decision Support Systems
- Psychological, Social and Mass Communication Prospective
- International Cooperation in Confronting Crisis and Disaster
- Case Studies for Crisis and Disaster Management
- Research Methodology

Executive Management (EMGT). This three-semester program offers a comprehensive overview of management issues. The diploma encompasses nine courses as follow:

- Strategic Management
- Leadership
- Organizational Development
- Operations Management
- Management Information Technology
- Sales and Marketing
- Accounting
- Finance
- Entrepreneurship

Human Resource Management (HRMD) The diploma offers the necessary knowledge and skills needed by a human resource manager to enhance the performance of the employees through training, incentives, proper work environment and fringe benefits. The diploma includes six courses and a project as follows;

- Strategic Management
- Recruitment and Placement
- Training and Development

Compensation and Benefits
Employee & Labor Relations
Human Resource Information Systems

Project Healthcare and Hospital Management (HHMG) The diploma consists of six required courses, in addition to a graduation project, as follows:

Management One (Management Functions in Hospitals)
Management Two (Human Resource Strategies)
Marketing Healthcare Centers & Hospitals
Information Systems in Healthcare and Hospital Management
Finance & Accounting in Healthcare and Hospital Management
Improving Medical Performance (Total Quality Management)
Graduation Project

Sales Management (SMGT). The program is designed to prepare sales professionals with the essential management skills to enable them to compete and grow in today's professional environment. The diploma encompasses four courses and a graduation project as follows:

Selling Process
Setting the Sales Plan
Implementing the Sales Plan
Marketing Principles & its relation to the Selling process
Graduation Project

Electronic Business (ELBS) The diploma aims to provide participants with the critical managerial knowledge, skills, and attitudes that complement their technical expertise and render the use of the new technologies related to E-Business effective and profitable in the current global competition. This diploma is awarded to the participant who successfully completes both the professional and the advanced certificates in addition to submitting a graduation project, which reflects an in-depth analysis and presentation of findings of a real life application case of what he has learned in the two certificates. The diploma includes:

E-Business Foundations
E-Business Marketing
E-Business Environment Development
E-Business Start-Up
Online Banking and Investment
E-Business and E-Applications
E-Business Models
E-Business Strategy
Graduation Project

Air Travel Marketing Air Travel Marketing (ATMK): The program is designed to prepare participants to: Identify the role and function of principal organizations involved in regulating, operating, representing and organizing international air transport, identify the air transport key principles, and basic terminology, create the vision and values needed to achieve world-class standards of performance within their companies, develop multiple strategies can best focus their companies to produce higher profits while at the same time lower costs., apply the concepts behind strategic management and business policy, identify the project management tools and techniques, develop their skills to negotiate positively through most difficult situations with

Continuing Education & Training Programs 707

confidence, develop their skills to negotiate positively through most difficult situations with confidence, identify the knowledge and skills needed to deal with their staff , and organize activities involved within the station environment. The diploma consists of the following courses

+ One Final Project:

Mandatory Courses: Principles of Marketing of services
 Airline Marketing and Sales
 Customer Loyalty Air Transport Management for Executives course

Developing your managerial mindset Elective Courses (choose only 4 courses from the following list):

Leadership and Decision making
 Customer Service in Service Organizations
 Strategic Planning Course
 Human Resource for Non Human Resource Managers Negotiation Skills Customer Service and VIP Handling Business Crisis Management Sales Promotion Techniques
 Advanced Sales Strategies
 Air Law & Air Transport Agreements Course
 NLP & Human Resources Managerial Skills

Aviation Management (AVMG): The program is designed to prepare participants to: Identify the role and function of principal organizations involved in regulating, operating, representing and organizing international air transport., apply concepts & principles of service marketing as well as several Ps of providing services, identify and Analyze customers' needs, identify effectively the segment of their targeted market, develop customers' needs with product innovation, product quality and effective distribution, develop creative marketing strategies that will help in increasing market share and produce higher profits with lower costs, improve the essential skills needed to influence and motivate their staff to achieve exceptional performance, improve their communication techniques to make good impression and to present a positive self image, identify, analyze and solve problems and difficulties that they encounter most frequently, develop their skills to negotiate positively through most difficult situations with confidence, and develop competency profiles The diploma consists of the following courses + One Final Project:

Mandatory Courses: Strategic Management Air Transport Management for Executives Course
 Introduction to International Aviation & Air Law
 Project Management Elective Courses (Choose 2 courses from the following list): Business Crisis Management Leadership and Decision Making Human Resources for Non Human Resources Managers Negotiation Skills
 Developing your Managerial Mindset (Executive & Leadership Skills)
 Managing an Airline Stations
 Airline Marketing and Sales
 Managing Distribution Channels & Costs
 Aviation Security Management
 Financial Management for Airports & Airlines

Passenger Handling Management (PMGH); The program is designed to prepare participants to: Identify technical skills related to Airport Handling, such as cargo, safety procedures, Emergency Plans....etc., identify the knowledge, skills and attitude needed to manage a Customer Service Team, develop their communication techniques, make good

impression and present a positive self image, apply suitable steps for dealing effectively with passengers, deliver excellence passengers care and VIP treatment, identify Causes of passengers' disruptive behavior and differentiate between the behavioral styles, apply recommended policies and procedures in dealing with disruptive passenger(s) and actively communicate in crucial transactions, recognize the symptoms that indicate they are under chronic stress overload, create an action plan for work, reduce and manage stress, recognize employees' strengths and give them the feedback they need to succeed, identify employees' strengths and problems and ways solve them, identify different types of teams, develop strategies for dealing with team conflict and common situations, and demonstrate a complete over all view of managing an airline station from the Macro prospective. The diploma consists of the following courses + One Final Project:

Mandatory Courses: Managing an Airline Station Managing a Customer Service Organization
Customer Service and VIP Handling Handling Unruly
Passengers Stress Management and Life Style Awareness Coaching and Mentoring
Elective Courses (Choose one course from the following list): Team Building Managing
People Through Change Managing People Performance

2. Professional Certificates:

2.1) Office Management (OMGT) This certificate assists participants to upgrade their level of understanding and to improve their contribution to the company through the skills that convey a professional image. The certificate focuses on issues of business etiquette and protocol, communication, and effective planning. The certificate encompasses four courses in addition to a graduation project as follow:

Office Management – Principles
Office Management – Skills

2.2) Electronic Business (ELBS) This certificate aims to provide participants with skills, and attitudes that complement their technical expertise and render the use of the new technologies related to E-Business effective and profitable in the current global competition. It encompasses four courses as follow:

E-Business Foundations
E-Business Marketing
E-Business Environment Development
E-Business Start-Up

2.3) Electronic Business (ELBS Advanced) This is an advanced certificate to provide participants with the critical managerial knowledge, skills, and attitudes that complement their technical expertise and render the use of the new technologies related to E-Business effective and profitable in the current global competition. It is awarded to participants who successfully complete the certificate, or an experienced professional, in addition to the following four courses:

Online Banking and Investment
E-Business and E-Applications
E-Business Models
E-Business Strategy

2.4) Project Management for Non-Engineers (PMNE) The certificate teaches the steps managers have to follow to ensure that their projects will be successfully completed on time and

Continuing Education & Training Programs 709

on budget, as per agreed quality. It signifies that the participant has acquired the essential skills to successfully address today's project management challenges. He/she will learn how to successfully plan, manage and deliver projects.

Participants will also learn how to implement project management processes, develop leadership skills and respond to real-world scenarios. It encompasses six courses as follow:

- Principles of Management
- Finance and Accounting for Non Financials
- Project Management Foundations
- Project Management Process
- Leadership and Change Management
- Project Management Applications & Graduation Project Preparation + Presentations

3. Certificate Programs

3.1 Occupational Safety and Health Training: Using authorized trainers, the IMD provides; 30 Hour courses in Construction and/or General Industry Safety and Health hazard recognition and prevention based on the Occupational Safety and Health Administration guidelines (OSHA 30).

3.2 Essential Business Skills: The main purpose of this program is to introduce and familiarize diploma candidates with the essential business skills. By the end of this course, the participants should have acquired adequate linguistic skills in a business-related context. It encompasses two modules, i.e.: Business Writing, Executive Summary and Report.

3.3 Attendance Certificate of Train-The-Trainer (TTT): mixing theoretical, practical and interactive approach, participants will be having an integrated experience to be able to successfully apply what they have learnt in real life, It is a 6 week program with 60 hrs instructional delivery.

3.4 Attendance Certificate of Occupational Health and Safety Assessment Series (OHSAS 18001): The (OHSAS) specification gives requirements for an occupational health and safety (OH&S) management system, to enable an organization to control its OH&S risks and improve its performance. A company in compliance with the requirements should be eligible to receive a valid certification. This certificate is targeting developing the export capacities of companies within the industrial sector. It was designed in cooperation with the Industrial Modernization Center, and is currently being developed and tested. This program covers: Management systems and occupational health and safety concepts, OHSAS 18001 requirements, Establishing an occupational health and safety management system, Issue an occupational health and safety policy, targets, objectives and programs, Methods for performance measurement and control, Issue and control system documents, case study and workshop.

4. Management Development Short Courses, Seminars and Workshop Series

The Institute of Management Development offers a number of seminars, workshops, and short courses in different management concepts, theories and applications. These programs can be made available based on the needs and requirements of potential clients.

5. The Institute of Management Development offers short courses in English in the following fields:

Administration Core, Call Center, Career Development Core, Career Development Advanced, Core Essentials for Business Professionals, Human Resources Core, Human Resources Advanced, Personal Development, Project Management, Sales and Marketing Core, Sales and Marketing Advanced , Supervisors and Managers Advanced, Train the Trainers, Workplace Essentials , Safety and Security, Law Courses.

Current offerings include: Leadership, Communication & Interpersonal Skills, Interviewing & Selecting Outstanding People, Business Skills, Strategic Planning & Goal Setting, Time Management, presentation Skills, Logistics, Human Resources, Event Management, Performance & Productivity Management, Corporate Creativity & Innovation Skills, The Power of Branding & Corporate Identity, Advertising Campaign, Making Process Improvement & Manage Change, Retail Management, Cost Analysis & Performance Measurement. The Institute of Management Development offers short courses in Arabic, i.e.: Management Skills, Business Etiquette, Computer Skills, Business Writing, Strategic Planning, Communication Skills, Project Management, Team Building, Training of Trainers , Essential Skills for HR, Email Techniques, Public Relations, Meeting Minutes, Team Building for Leaders, Information Technology Infrastructure Library, Archiving, Developing Methods for Measuring Economic Performance.

The Institute of Management Development offers a wide range of tailor-made programs on contractual basis.

Alliance Programs in parallel to the Center's Programs and Certificates the IMD allies and /or collaborates with renowned international educational, professional and /or developmental institutions to offer their programs and /or jointly approved Curricula to MC participants.

1) University of London International Programs: The University of London consists of 19 self governing Colleges and 10 other smaller specialist research Institutes.

1.1 International Management Post Graduate Diploma. (IMGD)

Lead College: Royal Holloway, Royal Holloway was founded in 1886. It received its charter from the University of London in 1900 and later merged with Bedford College (est. 1849).

Program Description: Designed to provide participants with specialist knowledge of international business, the program in International Management have been developed by academics within the School of Management at Royal Holloway, University of London. The flexibility of this program allows students to fit their studies around their home and work commitments.

To acquire the post graduate diploma participants must finish 7 core courses and 4 electives. Participants can finish the program from 1-5 years.

There are 9 core courses where participants get to choose only 7:

- International accounting and finance
- International business economics
- Information systems

Continuing Education & Training Programs 711

International human resource management
 Leadership and organizations
 Philosophy of management
 International operations management
 International marketing
 International strategy

There are 14 elective courses where participants get to choose only 4.

International Sustainability Management
 China and the International Economy
 Advertising and promotional Communication
 Cooperative Strategy
 International Business Analysis
 Corporate Social Responsibility
 Management of Japanese Multinational
 Multinational Enterprise and the Global Economy
 Investment Management
 Corporate Finance
 Knowledge Management
 International Business Law
 Global Financial Markets
 International Entrepreneurship

1.2) Diploma for Graduates in Information Systems.(ISGD)

Lead College: London School of Economics and Political Science, Founded in 1895, the London School of Economics and Political Science (LSE) is regarded as an international centre of academic excellence and innovation in the social sciences. The School had the highest percentage of world leading research of any UK university, topping or coming close to the top of a number of rankings of research excellence.

Program Description: The program is suitable for graduates of any discipline who wish to secure a stand-alone qualification in information systems. The program is designed to provide a thorough grounding in the principles of information systems while developing critical skills for a wide range of real world professional situations.

To acquire the diploma participants must finish 3 core units and 1 elective. Participants can finish the program from 1-5 years.

The core units are:

Information Systems Development and Management
 Information and Communication Technologies: Principles and Perspectives
 Research Project in Information Systems

There are 9 elective units which participants get to choose only 1.

Introduction to Information Systems
 Information Systems and Organizations
 Software Engineering: Theory and Application

Information Systems Evaluation (Half Unit)
 Sociology of Information Systems (Half Unit)
 The Ethics and Politics of Information Systems (Half Unit)
 Introduction to Programming (Half Unit)
 Statistics (Half Unit)
 Information and Communication Technology Policy (Half Unit)

2) Marketing Communications Professional Diploma of the International Advertising Association (IAA) - USA. The internationally recognized diploma is considered among the highest professional qualifications in the growing fields of marketing, communication and advertising. The International Advertising Association, in collaboration with the Institute of Management Development, offers a diploma that requires the following eight courses, a campaign and a minimum of a four-week-Internship:

Bases of Marketing
 Principles of Advertising
 Marketing Research
 Consumer Behavior
 Media Fundamentals
 Advertising Strategies and Management (Cases)
 Desktop Publishing
 Integrated Marketing Communications + Campaign

3) Public Relations Diploma of the (Chartered Institute of Public Relations “CIPR”). Industry-recognized and a unique professional qualification awarded by a Chartered body PR is fast becoming one of the most valuable management tools in the region. Effective PR is a vital ingredient for many businesses, reflected in the growing investment in this activity .PR has a whole range of titles and functions: public affairs, corporate communications and investors’ relations among others. Whether it realizes it or not, any business is already engaged in PR activities one way or another, with a concrete contribution to its competitive edge and market growth. By raising the profile of PR, a business is simply acknowledging and taking charge of an activity that is already happening around.

The Diploma encompasses three courses:PR Theory and Practice
 Planning and Management
 Self-directed Research Investigation into an aspect of PR Practice and Theory

4) Marketing Qualifications of the Chartered Institute of Marketing - UK (CIM) The CIM is the leading international body for marketing and business development. It provides internationally recognized qualifications that meet industry needs.

4.1) The Professional Certificate in Marketing (CIM)

This certificate gives you the practical skills and knowledge to devise and execute marketing activities and gain marketing credibility. It also aims at providing a practical insight into the principles and applications of marketing at a tactical level. The syllabus has been updated recently to reflect the changing issues and practices within the market and to reflect employers’ views of marketing in today’s business environment. The qualification is ideal for junior marketers, those working in marketing support roles (like personal assistants); or if marketing plays some part in your current job description. The certificate encompasses the below four courses:

Marketing Essentials

Continuing Education & Training Programs 713

Assessing the Marketing Environment
Marketing Information and Research
Stakeholder Marketing

4.2 The Professional Diploma in Marketing (CIM).

This qualification is ideal for marketers concerned with managing the marketing process at an operational level, as well as those who aim to build on knowledge gained at the certificate level with a future marketing management role in mind. The certificate encompasses the below four courses:

Marketing Planning Process
Delivering Customer Value through Marketing
Managing Marketing
Project Management in Marketing

4.3 The Chartered Postgraduate Diploma in Marketing (CIM) is a challenging, high-level marketing qualification that demonstrates specialist professional knowledge across many areas. It is ideal for marketers working at a strategic level or aspiring to do so. The certificate encompasses the below five courses:

Emerging Themes
Analysis and Decision Marketing Leadership and Planning
Marketing Leadership & Planning
Managing Corporate Reputation
Leading Marketing

5) Construction Project Manager Certified Program of the American Society of Civil Engineers (ASCE), in collaboration with Institute of Business Development (IBD). An essential tool for maintaining high professional standards- the certification shows that you have demonstrated mastery of the construction project structure and have accepted the professional challenge to stay abreast new development in the engineering field on the managerial level. The certificate consists of the following:

Management and Leadership Skills for Engineers
Planning, Using, and Analyzing the Project Schedule
Construction Project Administration and Claims Avoidance
Preparing Engineers to Work Effectively
Key Financial, Marketing, and Human Relations
How to Write a Business Plan
Finance and Accounting for Non-Financial Managers

Institute of Banking and Finance (IBF)

Acting Director: A. Farouk

The Institute of Banking and Finance was founded in 1987 to meet the increasing need for specialized programs in the areas of banking, finance and investment. Due to the introduction of new economic systems and the expansion of international banking and the promotion of foreign investments in Egypt and the Middle East, the institute caters to the needs of professionals and managers by introducing them to the latest trends and applications in the areas of international business, foreign investment, corporate finance, and investment banking.

The Institute of Banking and Finance offers a number of diplomas, professional certificates and short courses on regular bases addressing local and regional needs and requirements, the following professional Diplomas & Certificates are among its portfolio:

Admission Requirements for professional Diplomas and Certificates:

- a) Bachelor degree with a minimum grade of 'Good'. Otherwise a recommendation letter is required indicating a minimum of 2 years work experience.
- b) Passing the English Placement Exam or TOEFL exam in any local licensed TOEFL center with a minimum score of 500
- c) Passing an Accounting placement exam with a minimum score of 70%

1. Professional Postgraduate Diplomas (Accredited by the supreme Council of Universities in Egypt subject to renewal every 3 years)

1.1) Banking Credit and Risk Management:(BCRM) The diploma is designed to meet the increasing sophistication of all finance areas & the Development of credit & risk. Due to the Emergence of Mega projects in the Egyptian Market, Related expertise & Knowledge are crucial to the success of the organizations. Credit & Risk professionals need to consistently acquire, develop & polish their skills to confidently undertake their tasks & respond to change.

The program is divided into two parts; Professional Certificate and Professional Diploma with an aim of expanding the participant level from basic and essential credit knowledge required for junior credit officers to advanced courses serving middle level Management and executives working in the Banking Credit department of a bank.

The Program is taught by top professionals from the Market who delivers both Breadth & Depth of current Credit & Risk developments, & provides the essential skills to accommodate related challenges & changes. Participants should fulfill:

- a. Requirements for Professional Certificate; 8 Courses as well as graduation project are required:

Introduction to Finance & Accounting
 Economic/ Industry Analysis
 Lending Rationales " Asset Conversion/ Asset Protection"
 Financial Statements & Ratio Analysis
 Cash Flow Mechanics/ Projections Assumptions
 Trade Finance
 Credit Structuring & Problem Loans
 Legal Aspects of Credit
 Graduation Project

- b. Requirements for Professional Diploma, 3 courses are required:

Project Finance & Syndication
 Risk Management
 Financing and Evaluating SME's

Continuing Education & Training Programs 715

1.2) Corporate Finance & Investment: (CFIS) In the increasingly competitive Egyptian Environment, firms need to ensure they are properly developing a practical approach to their Corporate and Project Finance Strategies. In this program, participants will acquire both a technical and theoretical approach to a variety of finance techniques. They will also be introduced to different projects, including awareness of opportunities and risks associated with each type of project as well as the analysis and techniques for trading securities and brokerage. It covers valuation of assets, portfolio management and technical analysis.

The program is divided into two parts; Professional Certificate and Professional Diploma with an aim of expanding the participant level from basic and essential corporate knowledge required for junior corporate officers to advanced courses serving middle level Management and executives working in Investment and Corporate Institutions. Participants should fulfill:

- a. Requirements for Professional Certificate; 8 Courses as well as graduation project are required:
 - Introduction to Finance & Accounting
 - Economic/ Industry Analysis
 - Lending Rationales “ Asset Conversion/ Asset Protection”
 - Financial Statements & Ratio Analysis
 - Cash Flow Mechanics
 - Securities Industry & Capital Markets
 - Valuation Of assets
 - Portfolio Management
 - Graduation Project
- b. Requirements for Professional Diploma, Five additional courses are required:
 - Project Finance
 - Mergers & Acquisitions Technical Analysis
 - Introduction to Financial Derivatives
 - Bond Valuation

2. Professional Certificates:

2.1) Banking Credit and Risk Management (described above within postgraduate diploma) PCRM,

2.2) Corporate Finance & Investment (described above within postgraduate diploma) CFIS

2.3) Retail Banking & Consumer Lending Techniques:(RTBK)Personal, retail and consumer banking is an important trend for major worldwide banks and financial institutions. It is critical in combating today’s fierce competition and globalization, hence meeting and satisfying the needs of the most important segment in the market. This program emphasizes the retail banking concepts, theories, products, services as well as the main distribution channels. Participants will develop their marketing and selling skills to meet the Retail Banking needs. The program encompasses five courses as follows:

- Retail Strategies and Corporate Leadership
- Marketing, Sales and Coaching

Distribution Management
 Back Office Management Retail Credit Management

2.4) Business Advisors Program (BAP) in collaboration with the BDSSP; Business Development Services Support Project; BDSSP is funded by the Canadian International Development Agency (CIDA) and executed by the Association of Canadian Community Colleges (ACCC). The project's mission is to enhance the Facilitation and Provision of Business Development Services (BDS) in Egypt. The establishment of the delivery of the BAP in Egypt is a key to build a cadre of young business advisors who would support the growth and development of Egyptian Small and Medium Enterprises (SMEs). The program compasses two modules:

- In module 1: Business Planning, participants will learn how to advise clients on how to identify business opportunities, screen and select the most suitable one and develop a business plan.

- In module 2: Business Improvement Planning, they will develop diagnostic skills in marketing, production, organization and finance for existing enterprises, as well as develop a business improvement plan.

In addition, the program places emphasis on counseling skills that are critical to advising SME clients.

3. Short Courses:

The Institute of Banking and Finance offers set of short courses tackling the main issues in the Egyptian Market. Current offerings include: Finance for Non Financials, Project Finance & Syndications, Mergers & Acquisitions, Financing and Evaluating SME's, Feasibility Studies, Islamic Finance

4. Tailored Programs

Since, IBF's aim is to offer a very special kind of service for its clients, it offers specially designed tailored programs (either in Arabic or English) to meet its clients' needs at the time & place convenient for them. Samples of programs offered tailored to Banks and Financial Institutes:

- Corporate Banking Credit Program tailored to National Bank of Egypt
- Corporate Banking Credit program tailored to Credit Agricole Egypt
- Corporate Banking Credit program tailored to NSGB
- Basic and Advanced Investment program tailored to HSBC

5. Recruitment & Promotional Exams:

IBF also provides Recruitment Services by conducting recruitment exams to different banks in Egypt to support them in selecting the best calibers from the market. Moreover, IBF offers promotional exams to evaluate Bank's staff before being promoted to any managerial levels.

6. International Programs

In parallel to the American University in Cairo's professional postgraduate diplomas and professional certificates, the Institute of Banking and Finance allies and/or collaborates with

Continuing Education & Training Programs 717

international educational and professional institutions, to offer their accredited reputable professional postgraduate diplomas and professional certificates.

6.1 Diploma for Graduates in Banking (LSES): Alliance with London School of Economics and Political Science (LSE)

Founded in 1895, the London School of Economics and Political Science (LSE) is regarded as an international center of academic excellence and innovation in the social sciences. The 2008 HEFCE Research Assessment Exercise confirmed LSE as a world leading Research University. The School had the highest percentage of world leading research of any UK university, topping or coming close to the top of a number of rankings of research excellence.

LSE graduates are found in senior positions in organizations and government worldwide. Alumni and former staff include 15 Nobel Prize winners in Economics, Peace or Literature and 37 past or present Heads of State.

Program Description: The program is suitable for graduates of any discipline who wish to secure a stand-alone qualification in banking. The program is designed to provide a thorough grounding in the principles of banking while developing critical skills for a wide range of real world professional situations.

The program is developed by academics at The London School of Economics and Political Science (LSE), regarded as an international centre of academic excellence and innovation in the social sciences.

To acquire the diploma students must finish 1 core unit and 3 electives. Students can finish the program from 1-5 years.

The core unit is: Principles of Banking and Finance

There are 8 elective units from which students get to choose only 3:

- Investment Management
- Financial Intermediation
- Corporate Finance
- Valuation and Securities Analysis
- Quantitative Finance
- Auditing and Assurance
- Financial Reporting
- Financial Management

6.2 Alliance with Morgan International: Morgan International is a leading regional provider of educational and training services. With a global approach to service delivery, Morgan International responds to students' complex challenges with services that span national boundaries. Morgan International offers a broad portfolio of services tailored to the needs of partners, corporate accounts and end users. Staffed by highly skilled international team, Morgan International can meet its customer support service requirements. The Institute of Banking and Finance allies with Morgan International to provide the listed below designations:

CPA Designation: One of the world's leading licensing examinations, the CPA Examination

serves to protect the public interest by helping to ensure that only qualified individuals become licensed as CPA's. CPA's typically begin their careers in public accounting because it provides the fastest and broadest exposure to a variety of businesses. However, the traditional role of a CPA continues to expand and includes all aspects of business from performance to growth strategy. Moreover, today's CPA's are leaders, as well as close collaborators in high-profile organizational initiatives that require skills far beyond number-crunching.

CFA Designation: The Chartered Financial Analyst (CFA) designation is one of the fastest professional credentials in the world and is a globally recognized standard for measuring the competence and integrity of Investment Professionals. Achieving your CFA can place you among the elite in the investment management profession. It's the most respected and valued credential in the global finance community and your passport to advancement within the investment management profession.

CMA Designation: The CMA program tests and validates expertise in areas essential to analyzing, managing and evaluating business solutions that contribute to the success of an organization. Those who have earned the CMA credential have demonstrated both technical competencies and an understanding of the linkage between strategy and financial performance, grounded in a firm commitment to upholding strict professional ethical standards.

CIA Designation: The CIA designation is the only globally accepted certification for internal auditors and remains the standard by which individuals demonstrate their competency and professionalism in the internal auditing field. Attaining the CIA designation outwardly indicates your achievement and commitment to the profession. Furthermore, it offers your additional expertise and thorough knowledge of operations. The CIA is a valuable resource to executive management and boards in accomplishing overall goals and objectives. The CIA designation makes a world of difference, no matter where you choose to practice internal auditing.

Institute of Quality Management (IQM)

Acting Director: T. Wahdan

Established in 1994, the Institute of Quality Management became one of the pioneering institutions in total quality management in Egypt and the Middle East. The institute promotes quality disciplines and systems in the business and healthcare sectors. It offers a wide range of educational, training and technical assistance programs for organizations and individuals in the area of quality management. The Institute of Quality Management is supported by a team of experienced, qualified practitioners with substantial hands-on experience to turn quality management principles and concepts into practice. The institute's programs and activities are divided into segments namely, education and training for the business sector and education and training for healthcare providers.

Admission Requirements for Professional Postgraduate Diplomas & Professional Certificates:

- a) Bachelor's degree with a minimum grade of 'Good', Otherwise a recommendation letter is required indicating a minimum of 2 years work experience.
- b) Passing the English Placement Exam or TOEFL exam in any local licensed TOEFL center with a minimum score of 500

1. Professional Postgraduate Diplomas (Accredited by the Supreme Council of Universities in Egypt subject to renewal every 3 years)

1.1) Total Quality Management & Quality Management Systems (TQMG). The program is designed to qualify participants to be successful quality managers and provide them with the necessary skills to lead their companies when establishing quality, Six Sigma, or environmental management systems that satisfy the requirements of international standards such as ISO 9000 and ISO 14000. The program also provides participants with about 70% of the body of knowledge of the “Manager of Quality/Organizational Excellence” certificate from the American Society for Quality (ASQ) in the United States of America. The program encompasses six courses as follow:

- The Basic Six Sigma Breakthrough Improvement Process
- Statistical Quality Control
- Standards for Quality and Environmental Management Systems
- Planning for Top Quality
- Managing the Quality Functions
- Project Management

1.2) Total Quality Management for Healthcare Reform (TQMH) It is a three-semester-postgraduate diploma. the diploma is designed to provide the participants with the necessary background, together with hands-on-experience, to implement what is learned in real practice context. The participants receive about 70% of the Body Knowledge required for the exam of the Health Care Quality Certification Board in the United States of America. The program encompasses six courses as follow:

- The Basic Six Sigma Breakthrough Improvement Process
- Managing Information in Healthcare
- Planning for Top Quality in Healthcare Services
- Quality / Environment System Standards in Healthcare
- People Management
- Improving Organizational Performance

2. Certificate Programs

2.1) Certified Quality Inspector. The certificate is designed for quality technicians to enhance their skills in analyzing quality problems, preparing inspection plans and work instructions, measuring process performance, and preparing formal reports using fundamental statistical methods. The certificate duration is two semesters. It covers several topics, i.e.: Quality Definition and Tools, System Structures and Quality, Quality Audit and Standards, Statistical Methods, Auditing and Inspection, Process of Quality Development

2.2) Programs offered in the area of Six Sigma: The Institute of Quality Management offers, in collaboration with Quality of America, the following Sigma training certification:

a) Lean Six Sigma Green Belt certificate. (LSSGB) A Green Belt is an employee of the organization who will participate in a Six Sigma project team. Green Belts are employees trained in Basic Six Sigma concepts, including project management, team building, general problem solving and statistical analysis. They work on part-time basis, as part of a team assigned to a given project while maintaining their operational roles in the organization.

b) **Lean Six Sigma Black Belt certificate. (LSSBB)** The internationally recognized Lean Black Belt certificate is considered among the highest professional qualification in the field of Six Sigma. A Black Belt is an employee at a managerial level or a technical specialist who is assigned the full responsibility to implement Six Sigma throughout the business unit. Black Belts are on site Six Sigma implementation experts, with the ability to develop, coach and lead cross-functional process improvement teams. The program consists of four modules; each module is about 50 training hours. Practical application of training is performed through each participant's project and reviewed throughout the program. Additionally the application of Six Sigma methodology to the different business types: Manufacturing, Development, and Transactional processes are emphasized.

2.3) Professional Certificate in Infection Prevention and Control: Upon completion of this course, the participant will be able to describe Nosocomial infection definitions terms and concepts; assess the ongoing status and design a correction plan for infection control practices; supervise and evaluate the infection control programs; develop an educational program for infection control practitioners; and communicate easily with infection control customers. The course encompasses three modules; each module will require 32 hrs. Those are:

- Identification of infectious process and practice of infection prevention and control
- Surveillance and epidemiological investigation
- Supportive services and program management, quality improvement relevant and accreditation

2.4) Attendance Certificate of Manager of Quality/Organizational Excellence (CQOE). The program prepares participants for the exam of "Manager of Quality/Organizational Excellence" held by the American Society for Quality (ASQ). This exam was held for the first time in Egypt in October 2000 at the Institute of Quality Management, which is one of ASQ's international centers. The Institute of Quality Management has developed the training material required to cover the knowledge for the certified quality manager exam, and continuously works to make the program competitive and unique in the marketplace. Participants shall be granted a certificate of attendance from the American University in Cairo. Program covers several topics, i.e. Leadership, Strategic Plan Development and Deployment, Management Elements and Methods, Quality Management Tools, Focused Organizations, Supply Chain Management, Training and Development

2.5) Attendance Certificate Certified Professional in Healthcare Quality (CPHQ) Examination Review Program. The program prepares participants to set for the CPHQ examination, administered by the Healthcare Quality Certification Board of the National Association for Healthcare Quality (NAHQ), and obtain the Certified Professional in Healthcare Quality (CPHQ) status. Participants shall be granted a certificate of attendance from the American University in Cairo. Our program covers the Body of Knowledge which Contains 125 items. The following list is merely the titles of each part of the Body of Knowledge: Management and Leadership, Information Management, Performance Measurement and Improvement, and Patient Safety.

2.6) Attendance Certificate for the "Certified Supply Chain Professional (CSCP) APICS; the association for operations management is the global leader and premier source of the body of knowledge in the operations management area>This program helps prepare participants to successfully pass the CSCP exam by APICS and provides essential concepts related to customer and supplier relationships, continuous improvement, distribution requirement planning, global

Continuing Education & Training Programs 721

logistics and international business as well as e-business vision and strategy.

2.7) Attendance Certificate for the “Certification in Production and Inventory Management (CPIM)” “This Program helps prepare participants to successfully pass the CPIM exam by APICS and provides the essential concepts and strategies related to demand management, procurement and supplier planning, materials requirement planning, sales and operations planning. It will allow you to master scheduling performance measurements, supplier relationships, quality control and continuous improvement.

3. Short Courses:

The Institute of Quality Management offers short courses, i.e.: Six Sigma Yellow Belt, Basics of Demand Forecasting, Basics of Supply Chain Management, Basics of Purchasing Management, Basics of Warehouse Management, Six Sigma Orange Belt, Six Sigma Champion, Understanding the Six Sigma, Statistical Quality Control, ISO 9006 – 12008, Developing the ISO 9000 – Documentation, Internal Quality Management System Auditing, Establishing an Environmental Management System, Quality Cost How to turn it into Profit, Environmental Management System Audit.

The Institute of Quality Management offers a wide range of tailor-made programs on contractual basis.

The Citadel Capital Financial Services Center

Director: E. Tooma
www.aucegypt.edu/Business/ccfc

Established in 2006, the Citadel Capital Financial Services Center (CCFC) is the first of its kind in the Middle East to offer students, researchers and professionals an exciting, state-of-the-art instructional facility that integrates hands-on financial services practice into classroom financial concepts such as securities trading, risk management and asset allocation.

CCFC’s mission is to enhance financial education and research through the use of high-tech financial information technology, to fulfill the need for real and timely financial data flow and to contribute to the development of new financial products and applications through the array of financial software and tools we offer. In fulfilling this mission, CCFC works on creating a supportive educational and research environment bustling with eager students and keen faculty in search of the latest financial and economic data.

Over the past five years, CCFC has worked on creating strong partnerships with top international information and training providers. CCFC is proud of its established relationship with its main academic sponsors Thomson Reuters, Nooz.com and EGID, which offers AUC students and faculty access to a wide range of databases with comprehensive and timely financial data, news and research reports. CCFC’s relationship with its academic sponsors is a dynamic one which goes beyond access to their products to include other academic services and workshops. The partnership between CCFC and Thomson Reuters has resulted in the ‘Reuters Certification Training Program’ for AUC students, which has become a competitive program offering training workshops by Thomson Reuters certified trainers on their Databases including

Reuters3000 Xtra, Reuters Knowledge and Datastream and giving students a chance to sit for online assessments to become certified users. CCFC also publishes a quarterly newsletter with Thomson Reuters and a weekly newsletter with Nooz.com which cover local, regional and international market performance and allows our students and faculty to follow up on the most recent financial and economic highlights.

CCFC's role has also encompassed designing and delivering innovative activities, mini-classes workshops, guest lectures, competitions and training programs that contribute to developing individuals with strong financial and analytical skills. It is proud to have over 1000 AUC students, faculty, staff, alumni and professionals that have benefited from its resources and services over the past five years. CCFC is also an accredited training provider of the Chartered Institute of Securities and Investments (CISI) and the Microfinance Management Institute (MFMI) and offers a range of customized training programs in Advanced Corporate Financial Modeling, Risk in Financial Services amongst others.

During the coming period, CCFC will continue extending an imperative educational goal of creating an innovative and interactive learning environment to develop future market leaders and enhance financial professionals' know-how.

The Goldman Sachs Women's Entrepreneurship and Leadership Center (WEL)

Director: M. ElShinnawy
www1.aucegypt.edu/welcenter/

Established 2008, 10,000 Women Entrepreneurship and Leadership Program is part of the Goldman Sachs 10,000 Women initiative, a global initiative providing 10,000 underserved women entrepreneurs with a business and management education in developing countries. The AUC program in partnership with the Wharton School of the University of Pennsylvania, is committed to enhancing the growth and development of women entrepreneurs in the Arab Region through a unique blend of certificate programs, research programs, mentoring and networking activities that will lead to the social and economic development of the region. The program has graduated 202 entrepreneurs since its inception in 2008.

El-Khazindar Business Research and Case Center (KCC)

Director: A. Tolba

The Khazindar Business Research and Case Center (KCC) is the first and only case clearinghouse in Egypt. Established in 2007, its mission is to publish business case studies, in addition to offering other educational services aiming at providing participant-centered learning tools to its various stakeholders. The center aims at serving students, faculty, industry, and training companies by providing high-quality cases and business research reports on the Middle East and North Africa (MENA) region. It also helps in training faculty members in case development and classroom integration and guiding students in case analysis and case solving. KCC's services are dedicated to improving the quality of business education, as well as connecting businesses and students in the region”

Access to Knowledge for Development Center (A2K4D)

Director: Nagla Rizk

www.aucegypt.edu/Business/A2K4D

Access to Knowledge for Development Center (A2K4D) was established in 2010 as a center for academic scholarship, research and policy analysis on access to knowledge for development in Egypt and the Arab world. Recognizing the integral relationship between knowledge and human development, A2K4D promotes multi disciplinary research meant to further conceptualize and investigate the economic, legal, political and social issues confronting access to knowledge (A2K) in Egypt and the region. Based on solid theoretical foundations, A2K4D research serves to provide policy makers, negotiators and international representatives with well-researched intellectual property alternatives in areas as diverse as ICTs, software, health, trade, education, culture and agriculture. A2K4D research also helps devise well thought-of business models that address the tension between the interests of knowledge users and producers.

A2K4D serves as a regional research hub for A2K scholars, working towards developing a strong network of academic researchers with partners from civil society, industry, policy bodies and other stakeholders. A2K4D works in close collaboration with the overall global A2K movement and partners within the Access to Knowledge Global Academy (A2KGA), including the Information Society Project at Yale Law School and sister institutions from Brazil, China, India and South Africa.

Engineering and Science Services

Director: M. Farag

Engineering Services was initiated in 1983 with the objective of strengthening the relationship between the School of Sciences and Engineering at AUC and local industry. Since then, Engineering and Science Services activities have steadily grown. More than one hundred forty public- and private-sector companies and governmental agencies use Engineering and Science Services, and more than one hundred of them are now regular clients.

Engineering and Science Services activities are performed by the AUC faculty in addition to professors from the national universities, engineers and scientists from industry and specialists from government agencies. The activities can be grouped into:

1. Engineering and science development programs which consist of intensive short courses and are designed for practicing engineers and scientists in a wide range of specializations.
2. Special training programs are tailor-made courses which are intended for personnel of a given organization on a particular topic. The programs can be given in-house or at AUC.
3. Professional Program in Project Management trains engineers and other individuals to become project managers and equips them with modern techniques in this field. Six semester-long courses (45 contact hours each) are required for the Professional Certificate in Project Management.

4. Professional Program in Computer Aided Engineering enables engineers to effectively apply up-to-date computer-based techniques in their areas of interest. Six semester-long courses (45 contact hours each) are required for the Professional Certificate in Computer-Aided Engineering.
5. Professional Program in Environmental Engineering introduces engineers to different disciplines of environmental quality assessment, management and control. Six-semester-long courses (45 contact hours each) are required for the Professional Certificate in Environmental Engineering.
6. Professional Program in Information Technology trains engineers, managers and other individuals to become IT-professionals and develop techniques in this field. Six semester-long courses (45 contact hours each) are required for the Professional Certificate in IT.
7. Professional Program in Contractual & Legal Aspects in Constructions Industry gives engineers, lawyers and accountants who are involved in the construction industry in-depth knowledge about the competitive use of contracts in modern organizations.
8. Professional Program in Building Protection, Repair and Maintenance informs engineers about the latest developments in this area and trains them to become supervisors of repair and maintenance activities. The program consists of six courses and a capstone project.
9. Professional Program in Welding Engineering introduces engineers to different welding techniques, technologies, metallurgy, consumables and welding design. Six semester-long courses (45 contact hours each) are required for the Professional Certificate in Welding Engineering. This program is also offered online as distance education.
10. Specialization Certificate in Pressure Vessels and Piping is offered in collaboration with the American Society of Mechanical Engineers (ASME) and allows practicing engineers from Egypt and the Middle East to benefit from the ASME training programs. The certificate consists of six courses and a project.
11. Preparation courses for Project Management Certification. Preparation courses are offered in collaboration with PMI MENA Chapter in Egypt for the Project Management Professional (PMP) Certification. In addition, preparation courses for the International Project Management Association (IPMA) Certification are offered in collaboration with RS Management Consulting House.
12. Industrial research involves long-term projects that are conducted according to a mutually acceptable contract.
13. Advisory services are conducted on the basis of case-by-case contracts and cover short-term projects, aimed at solving specific problems or supplying information in a given field to users of this service.

Kamal Adham Center for Journalism Training and Research

Director: H. Al Mirazi

The professional development program offered by the Kamal Adham Center for Television and Digital Journalism involves a set of non-academic courses designed for working professionals interested in expanding their skills in television, print and online journalism. Students include those already working in the field and those interested in becoming journalists or broadcast technicians.

Courses are offered for the duration of five weeks with the total of 30 teaching hours. Programs can be tailored to the specific needs of companies, organizations or groups of individuals. Topics include television script writing and producing, digital camera operations and video editing, documentary production, business reporting, online journalism and a variety of other specialized subjects.

Courses are conducted in English and Arabic.

For more information or to register, please visit the professional development program website.



The background image is a photograph of a large, modern building with a grid of windows, likely a university or government building. In the foreground, there is a large, circular fountain with several water jets. The entire image is overlaid with a semi-transparent orange filter. The text "Appendix: Personnel & Enrollment" is centered over the fountain area.

**Appendix:
Personnel & Enrollment**

Appendix: Personnel & Enrollment

Board of Trustees

OFFICERS

Mr. Richard A. Bartlett, Chair
Mr. Moataz Al-Alfi, Vice Chair
Dr. Barbara Brown, Secretary
Mr. James D. Bond, Treasurer

TRUSTEES

Mr. Mohammad Abughazaleh
Chairman & CEO
Del Monte Fresh Produce Company
United States of America

Mr. Moataz Al-Alfi
Chairman
Americana Group (Egypt)
Arab Republic of Egypt

Professor Sheikha Abdulla Al-Misnad
President
Qatar University
State of Qatar

H.E. Ambassador Yousef Al-Otaiba
Ambassador of the United Arab Emirates to
the United States of America
United Arab Emirates

Ms. Basma Alireza
Vice President of Corporate Affairs
Rezayat Europe Ltd.
United Kingdom

Dr. Lisa Anderson
President
American University in Cairo
Arab Republic of Egypt

Dr. Ziad Ahmed Bahaa-Eldin
Senior Legal Advisor
The Central Bank of Egypt
Arab Republic of Egypt

Mr. Paul H. Bartlett
Partner
Rho Ventures
United States of America

Mr. Richard A. Bartlett
Managing Director
Resource Holdings, Ltd.
United States of America

Dr. Eva Bellin
Myra and Robert Kraft Professor of Arab Politics
Brandeis University
United States of America

Mr. James D. Bond
President
Bond & Associates
United States of America

Dr. Barbara Brown
President
The Louise H. and David S. Ingalls Foundation
United States of America

Mr. Richard M. Cashin
Managing Partner
One Equity Partners
United States of America

Dr. Mohamed ElBaradei
Director General Emeritus
International Atomic Energy Agency
Austria

Mr. C. Stedman Garber
Retired CEO, Global Santa Fe Corporation
United States of America

Personnel & Enrollment 729

Mr. Peter A.D. Giblin

Chairman
The Giblin Company
United Kingdom

Mr. B. Boyd Hight

Retired Partner
O'Melveny & Myers LLP
United States of America

Ms. Katherine Nouri Hughes

Writer
United States of America

Dr. Mohamed Ibrahim

Chairman & Founder
Mo Ibrahim Foundation
United Kingdom

Mr. Abdallah S. Jum'ah

Former President & Chief
Executive Officer
Saudi Aramco Oil Company
The Kingdom of Saudi Arabia

Mr. Robert W. Kasten, Jr.

Kasten & Company
United States of America

Dr. Farhad Kazemi

Professor of Politics & Middle
Eastern Studies
New York University
United States of America

Ambassador Daniel C. Kurtzer

Lecturer and Prof. in Middle East Policy
Studies
Woodrow Wilson School of Public and
International Affairs
Princeton University
United States of America

Mr. Bruce L. Ludwig

Chairman
Ludwig Capital
United States of America

Mr. Mohamed Loutfy Mansour*

President
Mansour Group
Arab Republic of Egypt
**On Leave from the Board*

Mr. Philip Maritz

Managing Director
Broadreach Capital Management
United States of America

Ms. Elizabeth (Lisa) K. Nitze

President and CEO
Social Enterprise Alliance (SEA)
United States of America

Dr. Robert A. Oden, Jr.

President Emeritus
Carleton College
United States of America

Ms. Dina Habib Powell

Global Head of Corporate Engagement
Goldman, Sachs & Co.
United States of America

Dr. William B. Quandt

Edward R. Stettinius Professor of Government
& Foreign Affairs
University of Virginia
United States of America

Ms. Hosna Mohamed Rachid

Chairperson
Unilever Mashreq
Arab Republic of Egypt

Mr. Thomas E. Thomason

Chief Executive Officer
Egyptian Refining Company
Arab Republic of Egypt

Dr. David A. Tirrell

Ross McCollum-William H. Corcoran
Professor of Chemistry and Chemical Engineering
California Institute of Technology
United States of America

Dr. Sadek Wahba
Managing Director
Morgan Stanley
United States of America

Dr. Ahmed H. Zewail
Nobel Laureate, Linus Pauling Chair
Professor of Chemistry
& Professor of Physics
California Institute of Technology
United States of America

ADVISORY TRUSTEES

Dr. Esmat Abdel Meguid
Arab Republic of Egypt

Dr. Alexander Aldrich
United States of America

Mr. Theodore S. Bacon, Jr.
United States of America

Dr. Thomas A. Bartlett
United States of America

Mr. Paul I. Corddry
United States of America

Mrs. Mary Cross
United States of America

Mrs. Elizabeth S. Driscoll
United States of America

Dr. Nabil Elaraby
Arab Republic of Egypt

Mr. Paul B. Hannon
United Kingdom

Mr. John R. Hayes
United States of America

Dr. Elias K. Hebeka
United States of America

Mr. Lawrence H. Hyde
United States of America

Mrs. Suad Al-Husseini Juffali
The Kingdom of Saudi Arabia

Mr. Weldon D. Kruger
United States of America

Mr. Arthur Lindenauer
United States of America

Mr. Troland S. Link
United States of America

Mr. Richard Morrow
United States of America

Dr. William A. Rugh
United States of America

Dr. William K. Simpson
United States of America

Mr. John A. Urquhart
United States of America

Ambassador Frank G. Wisner
United States of America

University Cabinet

Lisa Anderson, *President*

Medhat Haroun, *Provost*

Amr Salama, *University Counselor*

Mary Corrarino, *Vice President and Executive Secretary, Board of Trustees*

Ashraf El Fiqi, *Vice President for Student Affairs*

Brian MacDougall, *Vice President for Planning and Administration*

Fouad Sayess, *Vice President for Finance*

Academic Administration

Office of the Provost

Medhat Haroun, Provost

Graham Harman, Associate Provost for
Research Administration

Nagwa Ibrahim, Associate Provost for
Entrepreneurship and Research Development

Ann Lesch, Associate Provost for
International Programs

Sara Sayess, Associate Provost
for Academic Administration

John Swanson, Associate Provost
for Special Projects

Office of Graduate Studies

Amr Shaarawi, Dean of Graduate Studies

Office of Undergraduate Studies

Robert Switzer, Dean of Undergraduate Studies
and Director of the Core Curriculum

Graduate School of Education

Samiha Peterson, Dean

School of Business

Sherif Kamel, Dean

Nagla Rizk, Associate Dean for Graduate
Studies and Research and Director of Access
to Knowledge for Development Center

AbdelKrim Seghir, Associate Dean for
Undergraduate Studies and Administration

Department of Accounting
Department of Economics
Department of Management

Shawki Farag, Chair
Ahmed Kamaly, Chair
Mohga Badran, Chair

School of Continuing Education

Charles Norman, Dean

Dina Boraie, Associate Dean
for Instructional Affairs

Waguih Galal, Associate Dean for Finance
and Administration

School of Global Affairs and Public Policy Nabil Fahmy, Dean
Laila El Baradei, Associate Dean

Department of Journalism and Mass Communications	Hussein Amin, Chair
Department of Law	Hani Sayed, Chair
Department of Public Policy and Administration	Jennifer Bremer, Chair
Center for Migration & Refugee Studies	Ibrahim Awad, Director
Cynthia Nelson Institute for Gender & Women's Studies	Martina Rieker, Director
Kamal Adham Center for Journalism Training and Research	Hafez Al-Mirazi, Director
Middle East Studies Program	Reem Saad, Director
Prince Alwaleed Bin Talal Bin Abdulaziz Al Saud Center for American Studies and Research	Magda Shahin, Interim Director

School of Humanities and Social Sciences Bruce Ferguson, Dean
Nathaniel Bowditch, Associate Dean

Department of Arab and Islamic Civilizations	Nelly Hanna, Chair
Department of English and Comparative Literature	Ferial Ghazoul, Chair
Department of History	Khaled Fahmy, Chair
Department of Performing and Visual Arts	Malek Khouri, Chair
Department of Philosophy	Steffen Stelzer, Chair
Department of Political Science	Clement Henry, Chair
Department of Rhetoric and Composition	Margaret Shabka, Interim Director
Department of Sociology, Anthropology, Psychology and Egyptology	Salima Ikram, Chair
Arabic Language Institute	El Said Badawi, Acting Director
English Language Institute	Amira Agameya, Director

School of Sciences and Engineering Ezzat Fahmy, Dean
Maher Younan, Associate Dean for
Undergraduate Studies
Sherif Sedky, Associate Dean for Graduate
Studies and Research

Department of Biology	Hamza El-Dorry, Chair
Department of Chemistry	Adham Ramadan, Chair
Department of Computer Science and Engineering	Amr El-Kadi, Chair
Department of Construction and Architectural Engineering	Mohamed Abou-Zeid, Chair

Personnel & Enrollment 733

Department of Electronics Engineering	Ahmed Abou-Auf, Chair
Department of Mathematics and Actuarial Science	Magdi Moustafa, Chair
Department of Mechanical Engineering	Salah El-Haggar, Chair
Department of Petroleum and Energy Engineering	Magdi Nassrallah, Chair
Department of Physics	Ehab Abdel-Rahman, Chair
Libraries & Learning Technologies	Shahira El-Sawy, Dean
Center for Learning & Teaching	Aziza Ellozy, Associate Dean for Learning Technologies & Director of CLT
Main Library	David Nelson, Associate Dean for Main Library
Rare Books & Special Collections Library & Archives	Philip Croom, Associate Dean for RBSCL & Archives

Other Administrators

Cairo:

Abdel Aziz, Hesham AVP Facilities & Operations, Downtown
 Abdel Aziz, Mohamed Director, Facilities & Services Maintenance
 Avierino, Ihab University Registrar
 Abdel Malek, Hany Director, Budget and Financial Planning
 Abdelhamid, Wafaa Director, Office of the Provost
 Abou El Seoud, Mohamed Director of Study Abroad, International Programs
 Adly, Dina Director, Sponsored Programs
 Ali, Osama Director, Environmental Services
 Amer, Maha, Director of University Academic Computing Technologies (UACT)
 Amin, Mohamed, Head, Medical Services Department
 Ansari, Zaid Executive Director, Office of Institutional Research
 Boraei, Deena, Associate Dean for Instructional Affairs, SCE
 Boudinot-Amin, Ann Director of Assessment & Planning, Office of Institutional Research
 Dabbour, Mohamed Associate Dean & Director of Students Development
 Dahawy, Khaled Director, MBA Program, Business School
 El Araby, Aly Director, Supply Chain Management/ Business Support Office
 El Azmerly, Manal Director Marketing and Business Development, SCE
 El Guindi, Maha Director, Career Advising and Placement Services (CAPS)
 El Kosheiry, Mohamed, Director, Computer & IT Studies Division, SCE
 El Shazly, Samia Director, Student Financial Affairs
 Farag, Mahmoud Director, Engineering and Science Services, SSE
 Fares, Hanan Director, Sponsored & Partnerships, SCE
 Feteha, Mohamed Associate Dean & Director of Student Services, Student Services Office
 Hamdy, Abdelaziz Director, Arabic & Translation Studies Division, SCE
 Hamdy, Amr Director, Management Center, Business School
 Hashem, Soha Director, Office of the President
 Hazem, Ghada Director, Admission

Hozayin, Russane Director, Professional Educator Diplomas, GSE
 Howaidy, Ghada Director, International Executive Education Institute, Business School
 Ibrahim, Yasmine, Director, Students Enrollment Services, SCE
 Jackson, Kim AVP for Student Life
 Kamal, Ashraf Director, Security
 Kamel, Randa Director, Enrollment & Student Services Center
 Linz, Mark Director, AUC Press
 Megahed, Iman Director, Student Services Center online, SSC
 Mostafa, Hussein, Director of University Technology Infrastructure (UTI)
 Nada, Atef Director, Zamalek Dormitory
 Nicola, Nagwa Chief Technology Officer
 Norman, Peggy Director, Principal's Academy, GSE
 Precht, Katherine Anna Associate VP for Development, Development Office
 Raafat, Ola Chief Internal Auditor
 Radwan, Rasha Director of Institutional Research, Office of Institutional Research
 Ragab, Abdelaziz Director, Arabic & Translation Studies Division, SCE
 Raif, Raymonda Director, Alumni & Trustees Affairs
 Ramadan, Ala'a Director, University Information Systems (UIS)
 Rashad, Hoda Director, Social Research Center
 Rateb, Dina Director, Business Computer Center, Business School
 Riad, Samir Executive Director, Human Resources
 Rizkalla, Mourad Director, Travel Office
 Saad, Soheir Director, Lead Program
 Said, Ibrahim Director, Educational Testing & Assessment Division, SCE
 Salloum, Ashraf Director, Planning and Design for New Campus Development
 Sedhoum Suzanne, Director, Youth & Special Studies Division, SCE
 Sedky, Sherif Director, Youssef Jameel Science and Technology Research Center, SSE
 Seffain, Wagdi Director, Environmental Health & Safety
 Selim, Samah Director, Equal Opportunity & Affirmative Action
 Shaarawi, Randa, Controller
 El Shinnawy, Maha Director Goldman Sachs Women's Entrepreneurship and Leadership Program, Business School
 Shoeib, Aliaa Director, Business Studies Division, SCE
 Sidhom, Suzanne Director, Youth & Special Studies Division, SCE
 Smith, Ronald N. Associate Vice President for Facilities & Operations
 Tolba, Ahmed Director, El-Khazindar Business Research and Case Center, Business School
 Tooma, Eskandar Director, Citadel Capital Financial Services Center, Business School
 Touba, Nadia Director, English Studies Division, SCE
 Tutwiler, Richard Director, Desert Development Center
 Youssef, Fatma Associate Dean and Director of Residential life
 Zaalouk, Malak Director, Middle East Institute for Higher Education, GSE
 Zayed, Osama Director, Construction Services

New York:

Brandwood, Katherine, Assistant Director of North American Recruitment
 Clark, Wesley, Director of North American Admissions & Financial Aid
 Corrarino, Mary, Vice President and Executive Secretary, Board of Trustees

Personnel & Enrollment 735

Daniels, Michelle, Receptionist; Assistant Office Manager
Davis-Ore, Linda, Administrative Coordinator
Dedeian, Diana, Technical Operations Manager
DeLeon, Dawn, Assistant Director of Major Gifts/North America
Fischer, Kim, Student Financial Counselor
Garber, Dennis, Assistant Director of Annual Giving/North America
Karp, Margaret, Assistant Executive Director
Manotti, Ken, Vice President, Institutional Advancement
Preston, Anneka, Associate Investment Analyst
Qubain, Rami, Director of Strategic Planning and Analysis
Rainey, Elizabeth, Assistant Associate Director, Alumni Affairs
Rejman, Anna, Admissions Counselor
Roth, Morgan, Director of Communications for North America
Sanonz, Natalie, Office Manager and Faculty Affairs Coordinator
Spadaro, Adena, Admissions Counselor (Recruiter)
Stambaugh, Michael, Chief Investment Officer
Tabolt, Emily, Intern
Wright, Lydia, Administrative Coordinator

Washington, D.C.:

Anthony, Cynthia, Director of Government Relations

Faculty Roster

The catalog went to press in September, 2011. This roster lists AUC full-time faculty based on information available at that time. The date in parentheses indicates the first appointment. For more updates, please check the following url: www.aucegypt.edu/fac/Profiles/pages/home.aspx

ABAZA-STAUTH, MONA Professor of Sociology (1998); tenure
B.A. 1982, The American University in Cairo; M.A. 1986, University of Durham; Ph.D. 1990, University of Bielefeld.

ABDEL-BAKI, MONAL Visiting Assistant Professor (1995)
B.A. 1983, M.A. 1988, The American University in Cairo; Ph.D. 2002, Sadat Academy for Management Sciences.

ABDELBAR, ASHRAF Professor of Computer Science and Engineering (1996); tenure
B.Sc. 1991, The American University in Cairo; M.Sc. 1994, Ph.D. 1996, Clemson University.

ABDEL HAMID, AMR Professor of Engineering (1981); tenure
B. Eng. 1964, M.S. 1967, Cairo University; Ph.D. 1969, Syracuse University.

ABD-EL-MALEK, MINA Visiting Professor of Mathematics (2011)
B.Sc. 1972, B.Sc. 1974, Alexandria University; Ph.D. 1981, Windsor University.

ABDEL MEGUID, AHMED, Visiting Assistant Professor of Accounting (2009),
B.COM. 1999, Ain Shams University; CPA 2000, Delaware, USA; MS. 2002, Syracuse University, NY; Ph.D. 2007, Syracuse University, NY

ABDEL-MOOTY, MOHAMED Visiting Professor of Construction and Architectural Engineering (2005)
B.Sc. 1982, M.Sc. 1985, Cairo University; Ph.D. 1992, University of Waterloo.

ABDELNASSER, TAHIA Assistant Professor of English and Comparative Literature (2010)
B.S. 1996, M.A. 1999, The American University in Cairo; Ph.D., 1996 Cairo University.

ABDELRAHMAN, EHAB Associate Professor and Chair of the Physics Department (2006); tenure
B.Sc. 1988, M.Sc. 1993, Helwan University; Ph.D. 2000, University of Utah.

ABDEL WAHAB, HALA Instructor of Arabic Language (2005)
B.A. 1986, M.A. 1991, The American University in Cairo.

ABDEL WAHAB, NORA M. Senior Instructor of Arabic Language (1990)
B.A. 1982, M.A. 1987, American University in Cairo.

ABDULLA, RASHA A . Associate Professor of Journalism and Mass Communication (2004); tenure
B.A. 1992, M.A. 1996, The American University in Cairo; Ph.D. 2003, University of Miami.

Personnel & Enrollment 737

ABO EL SEOUD, DALAL Visiting Senior Instructor of Arabic Language (1997)
B.A. 1978, M.A. 1994, American University in Cairo.

ABOU-AUF, AHMED Associate Professor and Chair of the Department of Electronics Engineering (2006)
B.Sc. 1983, M.Sc. 1986, University of Alexandria; Ph.D. 1993, University of Maryland.

ABOU OAF, MERVAT Visiting Associate Professor of Practice of Journalism and Mass Communication (2005)
B.A. 1988, M.A. 2002, The American University in Cairo.

ABOUL-FETOUH, NAGLA Visiting Instructor of English Language(1998)
B.A. 1978, Cairo University; M.A. 1985, American University in Cairo.

ABOU ZEID, MOHAMED Professor and Chair of the Department of Construction and Architectural Engineering (1997); tenure
B.Sc. 1985, Cairo University; M.Sc. 1991, American University in Cairo; Ph.D. 1994, University of Kansas.

ABUL MAGD, ZEINAB Assistant Professor of History (2011)
B.Sc. 1996, M.A. 2001, Cairo University; M.A. 2003, Ph.D. 2008, Georgetown University.

ADDAS, KARIM Assistant Professor of Physics (2007)
B.Sc. 1996, The American University in Cairo; M.Sc.1998, Ph.D. 2004, Indiana University Bloomington.

AHMAD, SAIYAD Assistant Professor of Arab and Islamic Civilizations (2008)
B.Sc. 1989, Purdue University; M.A. 1992, Indiana University; M.A. 1993, Ph.D. 2000, Princeton University.

AHMED, MOHAMED Assistant Professor of Construction and Architectural Engineering (2010)
B.S. 1994, Cairo University; M.S. 1997, Fontys University; M.S. 2003, Cairo University, Ph.D., 2007, University of Tokushima.

AHMED, NEVEEN Assistant Professor of Finance (2011)
B.Sc. 2000, Cairo University; M.A. 2010, Ph.D. 2011, North Carolina State University.

AGAMEYA, AMIRA Visiting Professor and Director TEFL Program, ELI (2006)
B.A. 1976, Cairo University; M.A. 1981, University College of North Wales; Ph.D. 1988, Cairo University.

AKABAWI, SAMI Professor of Management (1983); tenure
B.S. 1967, Cairo University; M.S. 1973, Ph.D. 1977, City University, London

AL-ATRQCHI, FIRAS Associate Professor of Practice of Journalism and Mass Communication (2010)
B.A. 1994, M.A. 1997, The American University in Cairo.

ALBRECHT, HOLGER. Assistant Professor of Political Science (2008)
M.A. 2001, Ph.D. 2007, University of Tübingen.

ALI, HAMID E . Assistant Professor of Public Policy (2008)
B.S. 1988, The University of Khartoum; M.S. 1995, Economics and Management Science;
M.S. 2000, Ph.D. 2004, The University of Texas.

ALLAM, JEHA NE Senior Instructor and Director of Arabic Language Intensive Unit (1992)
B.A. 1977, M.A. 1987, American University in Cairo.

ALLAM, NAGEH Professor of Nano-Electronics Integrated Systems (2011)
B.Sc. 1998, M.Sc. 2003, Cairo University; Ph.D. 2009, University Park, PA.

ALTORKI, SORAYA . Professor of Anthropology (1977); tenure
B.A. 1965, American University in Cairo; M.A. 1969, Ph.D. 1973, University of California, Berkeley.

ALY, AHMED Associate Professor of Petroleum and Energy Engineering (2008)
B.S. 1986, Cairo University; M.S. 1992, Ph.D. 1995, Texas A&M University.

ALY, MOHAMED Assistant Professor of Mechanical Engineering (2011)
B.S. 1998, M.S. 2001, Cairo University; Ph.D. 2006, McMaster University.

ALY, SHERIF G. Associate Professor of Computer Science and Engineering (2005); tenure
B.Sc. 1996, The American University in Cairo; M.Sc. 1998, D.Sc. 2000, George Washington University.

AMER, HASSANEIN Professor of Electronics Engineering (2001); tenure
B.Sc. 1978, M.Sc. 1981, Cairo University; M.Sc. 1983, Ph.D. 1987, Stanford University.

AMER, MONA Assistant Professor of Psychology (2007)
B.A. 1998, The American University in Cairo; M.A.2002, Ph.D. 2005, The University of Toledo.

AMIN, GALAL . Professor of Economics (1979); tenure
L.L.B. 1955, Cairo University; M.S. 1961, Ph.D. 1964, London School of Economics.

AMIN, HUSSEIN. Professor and Chair of the Department of Journalism and Mass Communication (1992); tenure
B.Sc. 1976, M.Sc. 1982, Helwan University; Ph.D. 1986, Ohio State University.

AMIN, KHALED Visiting Associate Professor of Public Policy and Administration (2011)
B.Sc. 1993, B.Sc. 1999, M.Sc. 1996, Cairo University; M.Phil. 2003, Ph.D. 2005, New York University.

AMIN, ZEINAB Visiting Associate Professor of Mathematics (2005)
B.A. 1986; M.SC.1990; Ph.D.1997, Cairo University.

AMLEH, ASMA Assistant Professor of Biology (2009)

Personnel & Enrollment 739

B.Sc. 1983, The American University of Beirut; Ph.D. 1997, McGill University.

ANDERSON, LISA University president

B.A. 1972, Sarah Lawrence College; M.A.L.D. 1974, Tufts University; Ph.D. 1981, Columbia University.

ANIS, MOHAB H. Associate Professor of Electronics Engineering (2008) ; tenure
B.S. 1997, Cairo University; M.A.Sc. 2000, M.M.SC. 2008, Ph.D. 2003, University of
Waterloo; M.B.A. 2008, Wilfrid Laurier University.

APPELTON, ABIGAIL Instructor and Instruction/Reference Librarian (2010)

B.A. 2007, Valparaiso University; M.A.2009, Indiana University.

EL ARABY, SALAH Professor Emeritus (1990)

B.A. 1947, Cairo University; M.A. 1960, Ed.D. 1963, Columbia University.

ARAFI, MUSTAFA Visiting Associate Professor of Mechanical Engineering (2005)

B.Sc. 1994; M.Sc. 1997, Cairo University; Ph.D. 2002, University of Maryland.

ARAFI, SALAH Professor of Physics (1968); tenure

B.S. 1962, M.S. 1966, Ph.D. 1969, Cairo University.

ARNOLD, JEANNE Associate Professor of Theatre and Director of the Theatre Program
(2001); tenure

B.Sc. 1986, Portland State University; M.F.A. 1989, University of Washington.

ARRIGONI, ELIZABETH Instructor of English Language and Assessment Specialist (2007)

B.A. 1994, Haverford College; M.A. 1998, The American University in Cairo.

ASHMAWI, DALIA Associate Professor of Practice of Journalism and Mass
Communication (2010)

B.A. 2000, M.A. 2002, The American University in Cairo.

ASKALANI, PAKINAM Professor of Chemistry (1964); tenure

B.S. 1962, M.S. 1964, The American University in Cairo; Ph.D. 1968, Rensselaer
Polytechnic Institute.

ASSABGHY, FADEL Professor of Physics (1965); tenure

B.S. 1963, Cairo University; M.S. 1966, American University in Cairo; Ph.D. 1970, University
of Keele.

EL ASYOUTI, NABILA Senior Instructor of Arabic Language (1983); permanent status

B.A. 1972, M.A. 1978, American University in Cairo.

ATTALLAH, SAMER Assistant Professor of Economics (2011)

B.Sc. 1997, The American University in Cairo; M.A. 2006, Ph.D. 2011, McGill University

ATALLAH, SHERIFA Visiting Instructor of Arabic Language Teacher (2004)

B.A. 1984, Cairo University; M.A. 1999, The American University in Cairo.

AITEEK, MONA Instructor of English Language (1987); permanent status
B.A. 1965, American University of Beirut; M.A. 1983, American University in Cairo.

ATTIA, HOSSAM EL DIN Instructor of English Language (2011)
B.A. 1998, Alexandria University; M.A. 2007, The American University in Cairo.

AWAD, ADEL Visiting Associate Professor of Physics (2011)
B.Sc. 1988, M.Sc. 1993, Ain Shams University; Ph.D. 2001, University of Kentucky.

AWAD, IBRAHIM Professor of Practice of Public Policy and Director of Center of Migration and Refugee Studies (2010)
B.A. 1968, Cairo University; M.A. 1982, Graduate Institute of International Studies; Ph.D. 1984, University of Geneva.

AWNI, ALI Associate Professor of Practice of Management (2006)
B.Sc. 1981, Kuwait University; M.S. 1983, University of Ottawa; Ph.D. 1991, North Carolina State University

AYAD, MARIAM Associate Professor of Egyptology (2011)
B.A. 1994, The American University in Cairo; M.A. 1996, University of Toronto; Ph.D. 2003, Brown University.

EL-AYAT, KHALED Professor of Practice of Computer Science and Engineering (2003)
B.Sc. 1968, Cairo University; M.Sc. 1971, University of Toronto; Ph.D. 1977, University of California.

AZZAM, ISLAM Visiting Associate Professor of Management (2005)
B.A. 1993, Cairo University; M.A. 1998, The American University in Cairo; M.A. 2002; Ph.D. 2003, University of California-Irvine.

AZZAZY, HASSAN Professor of Chemistry (2003); tenure
B.Sc. 1984, University of Alexandria; Ph.D. 1994, University of North Texas.

BABOUKIS, JOHN Associate Professor of Music and Director of the Music Program (2005); tenure
B.A. 1977, Haverford College; M.Mus. 1982, State University of New York; D.Mus. 1987, Indiana University.

BADAWI, EL-SAID Professor of Teaching Arabic as a Foreign Language (1970) ; tenure
B.A. 1954, Dar Al Ulum; M.A. 1960, Ph.D. 1965, University of London.

BADAWI, NESREEN Visiting Assistant Professor of Law (2011)
B.A. 2001, LL.M. International & Comparative Law 2006, American University in Cairo; Ph.D. Law anticipated September 2011, University of London.

BADRAN, MOHGA Professor and Chair of the Department of Management (1986); tenure

Personnel & Enrollment 741

B.S. 1964, Cairo University; M.S. 1975, American University in Cairo; Ph.D. 1985, Stockholm University.

BALASA, FLOREN Associate Professor of Computer Science (2011)
M.Sc. 1982, Polytechnic University of Bucharest; M.Sc. 1990, University of Bucharest; Ph.D. 1995, Katholieke Universiteit Leuven.

ELBANNAN, MOHAMED Associate Professor of Accounting (2011)
B.A. 1995, Cairo University; M.Sc. 1998, Eastern Michigan University; Ph.D. 2003, Southern Illinois University.

EL-BARADEI, LAILA Visiting Professor and Associate Dean of the School of Global Affairs and Public Policy (2006)
B.A. 1983, M.B.A. 1988, The American University in Cairo; Ph.D. 1998, Cairo University.

EL-BARADEI, SHERINE Assistant Professor of Construction and Architectural Engineering (2008)
BSc 1997, American University in Cairo; MSc 2000, American University in Cairo, PhD 2005, Cairo University

ELBARKOUKY, MOHAMED Assistant Professor of Construction Engineering and Management (2011)
B.Sc. 1998, Cairo University; M.Sc. 2005, American University in Cairo; Ph.D. 2010, University of Alberta, Canada.

BARSOUM, GHADA Assistant Professor of Public Policy and Administration (2010)
B.A. 1987, Ain Shams University; M.A. 1999, The American University in Cairo; Ph.D. 2005, University of Toronto.

BARSOUM, PETER Instructor of Rhetoric and Composition (2006)
B.A. 1990, Virginia Commonwealth University; M.A. 2006, The American University in Cairo.

BASIOUNY, DALIA Visiting Assistant Professor of Theatre (2011)
B.A. 1990, Cairo University; M.A. 1996, Bristol University; M.Phil., 2002, Ph.D. 2009, City University of New York.

BASSIOUNY, ALIAA Assistant Professor of Management (2011)

BAURIEDEL, CHRISTIAN Assistant Professor of Construction and Architectural Engineering (2010)
B.A., 1992, University of Toronto, Ph.D., 2009, Bauhaus-Universität Weimar.

BECHEIKH, NIZAR Assistant Professor of Management (2011)
B.B.A. 1995, École Supérieure de Commerce; MBA 1997, Ph.D. 2004, Laval University.

BECKETT, JASON Assistant Professor of Law (2011)
LLB 1996, University of Dundee; LLM 1999, Ph.D. 2005, University of Glasgow.

BELHASHAMI, RACHID Assistant Professor of Mathematics (2011)
B.Sc. 1988; M.Sc. 1998; Ph.D. 1995.

BELO, CATARINA Assistant Professor of Philosophy (2006)
B.A. 1997, University of Lisbon; B.A. 2000, University of London; Ph.D. 2004, University of Oxford.

BESHAI, ADEL Professor of Economics (1965); tenure
B.A. 1963, American University in Cairo; M.A. 1964, Stanford University; D.Phil. (Oxon) 1973, Linacre College, Oxford University.

BISHAI, ADLI Professor Emeritus (1994)
B.S. 1949, Cairo University; Ph.D. 1955, D.Sc. 1969, Sheffield University.

BISHARA, MAGDA Visiting Instructor of English Language Teacher(1994)
B.A. 1969, M.A. 1989, The American University in Cairo.

BLANKS, DAVID Associate Professor & Chair of the Department of History (1992); tenure
B.A. 1983, M.A. 1985, Michigan State University; Ph.D. 1991, Ohio State University.

BOUADDI, MOHAMMED Assistant Professor of Economics (2011)
B.A. 1991, Mohamed V University; M.A. 1993, Hassan II University; M.Sc. 2002, UQAM University; Ph.D. 2010, HEC Montreal.

BORKOWSKI, PETER Instructor of Rhetoric and Composition (2004)
B.A. 1992, First College of Cleveland State University; M.A. 1996, Cleveland State University; Ph.D. 2009, Sofia University.

BOS, ARTHUR Assistant Professor of Marine Biology/Ecology (2011)
B.Sc. 1985, M.Sc. 1992, Wageningen University and Research Center, Ph.D. 1999, University of Hamburg.

BOWDITCH, NATHANIEL Assistant Professor of Philosophy and Associate Dean (2006)
B.A. 1994, University of California; Ph.D. 2004, Johns Hopkins University.

BRADLEY, FRANK Associate Professor of Theatre and Theatre Artistic Director (1999); tenure
B.A. 1976, University of North Carolina; M.A. 1979, Indiana University; Ph.D. 1989, Cornell University.

BREMER, JENNIFER Associate Professor and Chair of the Department of Public Policy and Administration (2007)
B.A. 1972, Columbia University, M.A. 1977, Stanford University; M.P.P. 1975, Ph.D. 1982, Harvard University.

BYFORD, RICHARD Instructor of Rhetoric and Composition (2001)
B.A. 1990, University of East Anglia; M.A. 1996, University of Surrey.

CAMPBELL, STANCIL Professor of Theatre (2000); tenure

Personnel & Enrollment 743

B.A. 1969, Wake Forest University; B.F.A. 1971, University of North Carolina; M.A. 1974, Wake Forest University; M.F.A. 1978, University of Oregon.

CARAPICO, SHEILA Visiting Professor of Political Science (2009)

B.A. 1973, Alfred University; M.A. 1976, Ph.D. 1984, SUNY Binghamton.

CARRILLO, AMY Post-Doctoral Teaching Fellow of Psychology (2010) B.A. 2002, University of California; M.A., 2009, Ph.D. 2010, University of Maryland.

CARTER, MELANIE P. Senior Instructor of Rhetoric and Composition (2004)

B.S. 1985, University of Florida; M.A. 1993, University of South Carolina; M.F.A. 1998, University of Alabama.

CHISHTY-MUJAHID, NADYA Assistant Professor of English and Comparative Literature (2009)

B.A. 1992, Bryn Mawr College; M.A. 1998, McGill University; Ph.D., 2002 McGill University.

CHROMEY, MICHAEL Senior Instructor and Reference Instruction Librarian (2007)

B.A. 1998, University of Alaska Fairbanks; M.M. 2001, University of London; MLS 2003, University of Alabama.

CLARK, CAROL Senior Instructor of English Language (1999)

B.A. 1972, Fairhaven College of Western Washington State College; M.A. 1976; The American University in Cairo.

CLARK, VICTORIA Instructor of Rhetoric and Composition (2005)

B.A. 1993, Thomas Valley University; M.A. 1993, University of Provence.

CLOSE, RONNIE Assistant Professor of Mass Communication (2011)

B.A. 2001, University of Ulster; M.Sc. 2002, Trinity College Dublin; Ph.D. 2010, The University of Wales.

COLE, DONALD Professor Emeritus of Anthropology (1971); tenure

B.A. 1963, University of Texas; M.A. 1968, Ph.D. 1971, University of California, Berkeley.

COLETU, EBONY Assistant Professor, RHET

B.A. 1998, Williams College; M.A. 2003, Ph.D. 2008, Stanford University.

COMER, BROOKE Instructor of Rhetoric and Composition (2005)

B.A. 1983, University of Berkeley; M.A. 1985, New York University.

CRIPPEN, MATTHEW Visiting Post-Doctoral Teaching Fellow (2011)

B.A. 2003, M.A. 2005, Ph.D. 2010, York University.

CROOM, PHILIP Senior Instructor and Director of the Rare Books & Special Collections Library (1998)

B.A. 1972, University of North Carolina at Chapel Hill; Licence-es-lettres, 1977, Universite de Nice, France; MBA 1980, American Graduate School of International Management (Oxford University Programme); M.L.S. 1989, University of North Carolina at Chapel Hill.

- CRUZ-RIVERA, EDWIN Assistant Professor of Marine Biology (2009)
B.S. 1990, University of Puerto Rico; Ph.D. 1998, University of North Carolina.
- CURIEL, JAMES Assistant Professor of Sociology (2009)
B.A. 1985, M.A. 1991, San Francisco State University; M.A. 1994, Ph.D. 2000, University of California.
- CZAJKA, AGNES Assistant Professor of Sociology/Migration and Refugee Studies (2009)
B.A. 2002, Queens' University, Canada; M.A. 2004, Carleton University; Ph.D. 2008, York University.
- DAHAWY, KHALED Professor of Accounting and Director of MBA Program (2000); tenure
B.A. 1990, The American University in Cairo; M.B.A. 1994, The Pennsylvania State University; Ph.D. 1998, The University of North Texas.
- DARWISH, ALI Associate Professor of Electronics Engineering (2007)
B.Sc. 1990, M.Sc. 1992, University of Maryland; Ph.D. 1996, Massachusetts Institute of Technology.
- DAVIDSON, CHARLES Assistant Professor of Political Science (2005)
B.A. 1988, University of Maryland; J.D. 1992, George Washington University; M.A. 1997, Ph.D. 2005, Tufts University.
- DEEBI, AISSA Assistant Professor of Digital Media Art (2010)
B.A. 1996, Haifa University; M.A. 1999, University of Liverpool
- DEMIAN, AMANI Senior Instructor of English Language (1989)
B.A. 1979, M.A. 1989, American University in Cairo.
- DEMIR, NECLA Assistant Professor of Food Chemistry (2009)
B.S. 1990, Ankara University; M.Sc. 1993, Ankara University; M.Sc. 1997, Clemson University; Ph.D. 2002, University of Florida
- DE YOUNG, GREGG Associate Professor of Science (1990); tenure
B.A. 1972, Dordt College; M.A. 1975, University of Wisconsin-Madison, M.A. 1980; Ph.D. 1981, Harvard University.
- EL-DORRY, HAMZA Professor and Chair of the Department of Biology (2005)
B.Sc. 1966, Alexandria University; Ph.D. 1972, University of Sao Paulo.
- DOUGLAS, EDMUND Visiting Assistant Professor, Scientific Thinking (2011)
B.Sc. 2003, University of Pittsburgh; M.A. 2005, Ph.D. 2010, Boston University.
- DRAKE, JAMES Instructor of Rhetoric and Composition (2008)
B.A. 1971, California State University; M.R.E. 1978, Nazarene Theological Seminary; M.A. 1994, California State University.
- DWORKIN, IRA Assistant Professor of English and Comparative Literature (2008)

Personnel & Enrollment 745

B.A. 1993, Wesleyan University; M.A. 1998, The City College of New York; M.Phil. 2000, Ph.D. 2003, City University of New York (CUNY).

EL-EDEL, DALIA R. Assistant Professor of Economics (2011)
B.Sc. 1999, M.Sc. 2003, Ain Shams University; Ph.D. 2010, University of Leicester.

EID, LAMIA Instructor and Director of the Center of Excellence for the Middle East and Arab Cultures (2009)
B.A. 1982, M.A. 1992, American University in Cairo

EDWARDS, JILL Professor of History (1989); tenure
B.A. 1973, Ph.D. 1977, University of Reading.

AL EKHNAWY, KAMAL Instructor of Arabic Language (2006)
B.A. 1985, The Higher Institute of Social Work; M.A. 2004, The American University in Cairo.

ELAYAT, HATEM Professor of Industrial Engineering (2007)
B.S. 1965, Ain Shams University; M.S. 1970, Ph.D. 1973, Oklahoma State University.

EL-ESNAWY, SUSAN Senior Instructor of English Language (1989)
B.A. 1984, Cairo University; M.A. 1989, American University in Cairo.

EL-ESSAWI, RAGHDA Visiting Assistant Professor and Director of TAFL Program, ALI (1990)
B.A. 1982, M.A. 1985, The American University in Cairo, Ph.D. 2002, Cairo University.

ELBENDARY, AMINA Assistant Professor of Arab and Islamic Civilizations (2009)
B.A 1996, M.A 1999, American University in Cairo; Ph.D 2007, University of Cambridge.

ELEZABI, AYMAN Associate Professor of Electronics Engineering (2003); tenure
B.Sc. 1989, Cairo University; M.Sc. 1995, Ph.D. 2000, North Carolina State University.

ELEZABI, SHEREEN Senior Instructor of Arabic Language (2004)
B.A. 1990, M.A. 1997, American University in Cairo.

EL EZABI, YEHAIA Professor Emeritus of Teaching English as a Foreign Language (1968)
B.A. 1957, Ain Shams University; Diploma 1959, Trinity College, Dublin University; M.A. 1963, Ed.D. 1967, Columbia University.

ELIMAM, ABDELGHANI Professor of Mechanical Engineering (2004)
B.Sc. 1967, Alexandria University; MSc. 1970, Kansas State University; Ph.D 1978, North Carolina State University.

ELKEWIDY, TAREK Associate Professor of Practice of Petroleum Engineering (2010)
B.Sc. 1983, Cairo University; M.Sc. 1990, Louisiana State University; Ph.D. 1996, University of Oklahoma.

ELLOZY, AZIZA Assistant Professor and Director of the Center for Learning & Teaching (2002)

B.Sc. 1964, M.Sc. 1967, The American University in Cairo; Ph.D. 1973, North Carolina University.

ELMUSA, SHARIF Associate Professor of Political Science (1999)
B.Sc. 1970, Cairo University; Ph.D. 1986, MIT.

ELNUR, IBRAHIM Associate Professor of Political Science (2001)
B.Sc. 1970, Cairo University; B.Sc 1973, University of Khartoum; PhD 1979, KMU, Budapest, Hungary.

ELSHINNAWY, MAHA Professor of Management and Director of Women's Entrepreneurship and Leadership Program (2004); tenure
B.A. 1984, M.B.A 1986, The American University in Cairo; Ph.D. 1993, University of California at Los Angeles.

ESAWI, AMAL Professor of Mechanical Engineering and Associate Director of Yousef Jameel Science and Technology Research Center (2001); tenure
B.Sc. 1989, M.Sc. 1990, The American University in Cairo; Ph.D. 1995, University of Cambridge.

ESSAM, RASHA Instructor of Arabic Language (2011)
B.A. 2002, Ain Shams University; M.A. 2010, The American University in Cairo.

EZELDIN, AHMED Professor of Construction and Architectural Engineering (1998)
B.Sc. 1982, Ain Shams University; M.Sc. 1986, M. Ph. 1987, Ph.D. 1989, Rutgers University.

EZZELARAB, ABDEL AZIZ Professor of Political Economy and Director of the Economic and Business History Research Center (1997); tenure
B.A. 1975, The American University in Cairo; M.A. 1977, University of Toronto; Ph.D. 2000, McGill University.

FADL, SAYED Visiting Professor of Arabic Literature (2011)
B.A. 1971, M.A. 1977, Ph.D. 1982, Cairo University.

FAHMY, EZZAT Dean of the School of Sciences and Engineering, Professor of Construction Engineering
B.S. 1971, Cairo University; M.Eng. 1975, Ph.D. 1979, McMaster University.

FAHMY, KHALED Professor and Chair of the Department of History (2010)
B.S. 1985, M.A. 1988, the American University in Cairo; Ph.D., 1993 Oxford University.

FAHMY, LATIFA ALY Instructor, School of Continuing Education (1978); Permanent Status
B.A. 1962, Cairo University; M.A. 1978, American University in Cairo.

FAHMY, NABIL Dean of the School of Global Affairs and Public Policy (2009)
B.S. 1977; M.A. 1980, The American University in Cairo

FAHMY, SHERINE Associate Professor of Practice of Journalism and Mass Communication (2007)

Personnel & Enrollment 747

B.A. 1980, Kuwait University; M.A. 1984, The American University in Cairo.

FAIRLEY, MARIAH Instructor of English Language (2011)

B.A. 1999, Lewis & Clark College; M.A. 2010, The American University in Cairo.

FARAG, MAHMOUD Professor of Materials Engineering and Director of the Engineering and Science Services (1971); tenure

B.S. 1959, Cairo University; M.S. 1962, Ph.D. 1965, Sheffield University.

FARAG, SHAWKI Professor of Accounting and Chair of the Department (1981); tenure

B.Com. 1960, Ain Shams University; M.S. 1963, University of Illinois; M.A. 1964, Yale University; Ph.D. 1967, University of Illinois.

FARAG, SOPHIE Senior Instructor of English Language(1993)

B.A. 1990, M.A. 1993, American University in Cairo.

FARAH, NADIA Visiting Professor of Political Science (2002)

B.Sc. 1968, Cairo University; Ph.D. 1977, Clark University.

EL-FARNAWANY, SHARON English Language Teacher (2003)

B.A. 1968, Western College of Women; M.A. 1973, The American University in Cairo.

FARRAG, OSMAN Professor Emeritus of Psychology (1989)

B.A. 1941, Cairo University; M.A. 1957, Columbia University; Ph.D. 1960, Indiana University.

FATHALLAH, FADI Associate Professor and Director of the California Study Center in Cairo (2008)

B.S. 1986, Texas Tech University; M.S. 1998, Virginia Tech.; Ph.D. 1995, Ohio State University.

FAULK, CHRISTOPHER Instructor of Rhetoric and Composition (2009)

B.A. 1993, Moody Bible Institute, 1993; M.A. 2004, University of Northern Colorado.

FAYEK, HANY Assistant Professor of Mechanical Engineering (2009)

B.Sc. 2000, M.Sc. 2002, The American University in Cairo; Ph.D. 2009, Cairo University.

FERGUSON, BRUCE Dean of the School of Humanities and Social Sciences (2010)

B.A. 1972, University of Saskatchewan; M.A. 1987 McGill University; Ph.D., 2006, Kansas City Art Institute

FERNANDES, ELEONORA Associate Professor of Arab and Islamic Civilizations (1999); tenure

B. A. 1966, M.A. 1976, The American University in Cairo; M.A. 1978, Ph.D. 1980, Princeton University.

FETEHA, MOHAMED Associate Dean of Students and Director of Student Support (1977)

B.A. 1961, Higher Institute of Social Work, Alexandria; B.A. 1969, University of Ain Shams; M.A. 1977, University of Chicago; Ph.D. 1984, Sociology.

FINCHAM, RICHARD Assistant Professor of Philosophy (2005)

B.A. 1995, M.A. 1998, Ph.D. 2004, University of Warwick.

EL FIQI, ASHRAF Associate Professor of Physics and Vice President for Student Affairs (1990); tenure

B.E.E. 1972, B.S. 1975, Cairo University; M.S. 1978, Ph.D. 1981, University of Nevada-Reno.

FISCHER, NATHAN Visiting Assistant Professor of Music—Post-Doctoral Teaching Fellow in the Core Curriculum (2009)

B.A. 1998, George Mason University; M.A. 2000, Ph.D. 2004, University of Rochester.

FISHERE, EZZEDINE Associate Professor of Political Science (2008)

B.A. 1987, Cairo University; M.A. 1995, University of Ottawa; Ph.D. 1998, L'université de Montréal.

FLEITA, DAISY Professor of Chemistry (1965); tenure

B.S. 1961, M.S. 1967, Ph.D. 1973, Cairo University.

FOUAD, JASMINE Assistant Professor of Finance (2007); B.A. 1990, Cairo University; M.A. 1996, Ph.D. 2004, Cairo University.

FOUAD, WALID Visiting Assistant Professor of Plant Biotechnology (2010)

B.S. 1993, Faculty of Agriculture; M.Sc. 1998, Cairo University; Ph.D. 2004, University of Florida.

FORDEN, CARIE Visiting Professor of Psychology (2011)

B.A. 1978, University of California at Santa Cruz; M.A. 1982, Ph.D. 1990, State University of New York.

FORMANECK, STEVEN Assistant Professor of Operations Management (2009)

B.A. 2002, University of Minnesota Morris; M.A. 2004, Ph.D. 2008, University of Waterloo.

FREDRICKS, LORI Assistant professor of Applied Linguistics, TEFL (2009)

B.A. 1998, M.A. 2003, University of Georgia; Ph.D. 2009, Georgia State University.

FRIEDLANDER, SHEMS Professor of Practice of Journalism and Mass Communication (1994)

B. F.A. 1963, Massachusetts College of Arts.

FYFE, DUNCAN Instructor of Rhetoric and Composition (2003)

B.A. 1989, Durham University; M.A. 1998, School of Oriental & African Studies, London.

GAAFAR, LOTFI Visiting Professor of Mechanical Engineering (2000); tenure

B.Sc. 1982, Ain Shams University; M.Sc. 1989, Ph.D. 1992, Arizona State University.

EL-GABRY, LAMYAA Assistant Professor of Mechanical Engineering (2006)

B.Sc. 1998, The American University in Cairo; M.Sc. 2001, Ph.D. 2003, Rensselaer Polytechnic Institute.

GALAL, ABDEL HAMID Visiting Assistant Professor of Physics (2011)

Personnel & Enrollment 749

GALLAGHER, NANCY Professor of History (2011)

B.Sc. 1964, M.A. 1972, Ph.D. 1977, University of California.

GALLE, KARL Visiting Assistant Professor of Physics (2011)

B.A. 1991, Williams College; M.A. 1996, University of Chicago; M.Sc. 1997, Ph.D. 2003, University of London.

GEBRIL, ATTA Assistant Professor of Teaching English as a Second Language (2010)

B.S. 1995, M.A. 2001, Sohag University; Ph.D. 2006, University of Iowa.

GEER, BENJAMIN Visiting Assistant Professor of Middle East Studies (2011)

B.A. 1991, Hampshire College; B.A. 2006, Université de Provence; M.A. 1995, University of Florida; M.A. 2008, University of London; Ph.D. candidate University of London.

GEORGE, SAMER Instructor of Bass Guitar

GHAZALEH, MARIE PASCALE Assistant Professor of History (2005)

B.A. 1993, M.A. 1997, The American University in Cairo; Ph.D. 2004, Ecole des Hautes Etudes en Sciences Sociales (EHESS).

GHAZOUL, FERIAL Professor and Chair of the Department of English and Comparative Literature

B.A. 1960, American University of Beirut; M.A. 1972, Ph.D. 1978, Columbia University.

GIBSON, MICHAEL Instructor of Rhetoric and Composition

B.A. 1992, Southern California College; M.A. 1996, Hope International University.

GIL-GARCIA, ANA Visiting Professor, Graduate School of Education (2011)

B.Sc. 1976, Universidad Pedagógica de Venezuela; M.Sc. 1981, University of Tennessee; Ed.D. 1991, Western Michigan University.

GIRONDA, BELLE Assistant Professor of Rhetoric and Composition (2008)

B.A., 1986, St Andrews Presbyterian College; Ph.D. 1999, University of Albany, State University of New York (SUNY).

GLAVANIS, PANDELI Professor and Associate Director of the Centre for Learning and Teaching (2004)

B.A., M.A. 1971, Princeton University; Ph.D. 1984, Hull University

GÓMEZ-RIVAS, CAMILO Assistant Professor of Middle Eastern History (2009)

A.B. 1996, University of Georgia; M.A., M.Phil. 2005; Ph.D. 2008, Yale University.

GONEID, AMR Professor of Computer Science and Engineering (1990); tenure

B.S. 1963, M.S. 1966, Ph.D. 1969, Ain Shams University.

GRIMMER, CASEY Instructor and Head of Research and Information Services, Libraries and Learning Technologies Department (2005)

B.A. 1992, Western Illinois University; M.A. 1994, Illinois State University; M.S.L. 1995, University of Illinois at Urbana Champaign.

GRUBICH, JUSTIN Assistant Professor of Biology (2009)

B.S. 1992, University of Miami; Ph.D. 2001; Florida State University.

HABIB, MAKI Professor of Mechatronics and Robotics (2007)

B.A. 1978, M.Eng.1981 University of Technology (Baghdad); Ph.D. 1990, University of Tsukuba.

HADI, ALI Professor of Mathematics (2000); tenure

B.Sc. 1972, Ain Shams University; M.Sc. 1980, M.Phil. 1982, Ph.D. 1984, New York University.

HAFEZ, INAS Instructor of Arabic Language (2006)

B.A. 1983, M.A. 2003, The American University in Cairo.

HAFEZ, MOHGA Instructor of English Language, ELI (1978); permanent status

B.A. 1964, Cairo University; M.A. 1977, American University in Cairo.

EL HAGGAR, SALAH Professor and Chair of the Department of Mechanical Engineering (1987); tenure

B.S. 1972, M.S. 1976, Ain Shams University; Ph.D. 1983, Washington State University.

HAIKAL, FAYZA Professor of Egyptology (1984); tenure

B.A. (Hons.) 1960, Cairo University; Ph.D. 1965, St. Anne's College, Oxford.

HAMAM, IMAN Instructor of Rhetoric and Composition (2005)

B.A. 1996, The American University in Cairo; M.A. 1998, University of Kent; Ph.D. 2002, University of Sussex.

HAMDY, NAILA Assistant Professor and Chair of the Department of Journalism and Mass Communication (1997)

B.A. 1980, University of San Francisco; M.A.1996, The American University in Cairo; Ph.D. 2007, Cairo University.

HAMMOUDA, HUSSEIN Visiting Associate Professor of Arab and Islamic Civilization (2011)

B.A. 1979, M.A. 1990, Ph.D. 1997, Cairo University.

HAMZAWY, AMR Professor of Public Policy and Administration (2011)

B.Sc. Cairo University; M.A. University of Amsterdam, M.A. The Hague-The Netherlands; Ph.D. Free University of Berlin.

HANNA, NELLY Professor and Chair of the Department of Arab and Islamic Civilizations (1991); tenure

B.A. 1962, M.A. 1981, The American University in Cairo; Ph.D. 1989, Universite' de Provence, France.

HARB, NADIA Senior Instructor of Arabic Language (1983); permanent status

B.A. 1970, M.A. 1983, American University in Cairo.

HARMAN, GRAHAM Professor of Philosophy and Associate Provost for Research Administration (2000); tenure

Personnel & Enrollment 751

B.A. 1990, St. John's College; M.A. 1991, Penn State University; Ph.D. 1999, De Paul University.

HAROUN, MEDHAT University provost, Professor of Construction Engineering and Former Dean of the School of Sciences and Engineering; tenure

B.Sc. 1973, Cairo University; M.Sc. 1976, Ph.D.1980, California Institute of Technology.

HASSAN, FARKHONDA Professor Emeritus of Chemistry (1964)

B.Sc. 1952, Cairo University; M.Sc. 1966, American University in Cairo; Ph.D. 1970, University of Pittsburgh.

HASSAN, MAHA Instructor of Rhetoric and Composition (1996)

B.A. 1985, 1985, M.A. 1989, Ph.D. 1995, Cairo University.

HASSAN, MONA Instructor of Arabic Language (1997)

B.A. 1985, Cairo University; M.A. 1994, The American University in Cairo; Ph.D. 2005, Helwan University.

HASSAN, SHERINE Research Professor, Social Research Center(2006)

B.M.D. 1989, Ain Shams University; M.P.H. 1989, University of Louvain; M.St, 1992, University of Brussels; D.P.H. 1992, University of Louvain.

HASSANEIN, AMR Professor of Construction and Architectural Engineering (1991); tenure

B.S. 1980, M.S. 1984, Cairo University; M.S. 1988, Ph.D. 1989, University of Illinois.

HASSANEIN, AZZA Instructor of Arabic Language (2004)

B.A. 1977, Mansoura University; M.A. 1998, American University in Cairo.

HASSANEIN, MEDHAT A . Professor of Finance and Banking (1982); tenure

B.Com. 1960, Cairo University; M.B.A. 1966, New York University; Ph.D. 1970, The Wharton School of Finance, University of Pennsylvania.

HASSAN-SAYED, MOHAMED Assistant Professor of Petroleum Engineering (2009)

B.S. 2001, Aston University, UK; Master in Environmental Management 2002, Coventry University, UK; Ph.D 2006, Loughborough University, UK.

HATEM, TAREK Professor of Management (1989); tenure

B.S. 1979, Cairo University; M.A. 1981, University of Colorado; Ph.D. 1986, University of Colorado.

HEADRICK, TROY Instructor of Rhetoric and Composition(2008)

B.A. 1984, Anglo State University; M.A. 1988, Texas A & M University.

HEBERT, MICHEL Professor Emeritus of Mathematics (1993); tenure

B.Sc. 1979, M.Sc. 1981, Ph.D. Universite Laval.

HEGAZY, IBRAHIM A . Associate Professor of Management (1992); tenure

B.A. 1984, M.B.A. 1987, The American University in Cairo; Ph.D. 1990, George Washington University.

HEGAZY, MOHAMED Visiting Professor of Financial Accounting and Auditing (2006)
B.Com. 1982, Cairo University; M.Sc. 1984, Ph.D. 1988, University of Birmingham.

HENRY, CLEMENT Professor and Chair of the Department of Political Science (2011)
B.A. 1957, Ph.D. 1963 Harvard University; M.B.A. 1981, University of Michigan.

HENRY, HANI Assistant Professor of Psychology (2006)
B.A. 2000, Brooklyn College; M.A. 2002, Ph.D. 2006, Miami University.

HENRY, MICHELLE Instructor of Rhetoric and Composition (2005)
A.B. 2000, M.A. 2003, University of South Florida.

HILL, ENID Professor Emeritus of Political Science and Law (1967)
B.A. 1954, George Washington University; M.A. 1961, Ph.D. 1967, University of Chicago;
L.L.M. 2002, University College London.

EL HITAMI, FAROUK Professor Emeritus of Management (1966)
B.S. 1957, Ain Shams University; M.A. 1960, University of Washington, Seattle; D.B.A.
1964, University of Oregon.

HOATH, RICHARD Senior Instructor of Rhetoric and Composition (1990)
B.A. 1984, M.A. 1988, Jesus College, Cambridge.

HOLDIJK, LAMMERT Senior Instructor (1982)
B.A. 1973, Bowling Green State University; M.A. 1975, School of Oriental and African
Studies, London.

HOLMES, AMY K. Assistant Professor of Sociology (2008)
B.A. 1996, Lyon College; M.A. 2001, Freie Universitat; Ph.D. 2008, The Johns
Hopkins University.

HOPKINS, NICHOLAS Professor Emeritus of Anthropology (1975)
A.B. 1960, Harvard University; M.A. 1964, Ph.D. 1967, University of Chicago.

HOSNI, OSSAMA Research Professor of Construction Engineering (2005)
B.Sc. 1984, Ain Shams University; M.Sc. 1988, Zagazig University; Ph.D. 1991, University of
Missouri-Rolla.

HOULIHAN, MEGGAN Instructor and Instruction/Reference Librarian (2010)
B.A. 2006 University of Charleston; M.A. 2007, University of Reading; M.A. 2009,
Indiana University.

HOUSSNEY, NOELLE Instructor of Rhetoric and Composition (2008)
B.F.A. 2002, University of Colorado; M.F.A. 2004, Naropa University in conjunction with the
London International School of Performing Arts.

HOZAYIN, RUSSANNE Associate Professor of Practice, Graduate School of Education (2007)
B.A. 1970, Humboldt State University; M.S. 1975, Southern Connecticut State University;

Personnel & Enrollment 753

M.A. TEFL 1982, American University in Cairo; Ph.D. 1994, Ain Shams University.

HUGHES, MARY Instructor of English Language (2010)

B.S. 1991, Rochester Institute of Technology; M.A. 1999, Seattle Pacific University.

IBRAHIM, ALAA Visiting Assistant Professor of Physics (2007)

B.Sc. 1991, Cairo University; M.Sc. 1997, University of Maryland; M.Ph. 2002, Ph.D. 2003, George Washington University.

IKRAM, SALIMA Professor of Egyptology and Chair of the Department of Sociology, Anthropology, Psychology and Egyptology (2001); tenure

B.A. 1985, Bryn Mawr College; M.Phil. 1987, Ph.D. 1992, Cambridge University.

IMAM, EMAD Professor of Hydraulic and Water Resources Engineering (2003)

B.Sc. 1973, Cairo University; M.Sc. 1977, Ph.D. 1981, University of Windsor.

ISKANDER, HODA Senior Instructor of English Language (1975); permanent status

B.A. 1963, Cairo University; M.A. 1973, American University in Cairo.

ISKANDER, MONA Senior Instructor of English Language (1973); permanent status

B.A. 1963, Cairo University; M.A. 1973, American University in Cairo.

ISMAIL, AMANI Assistant Professor of Journalism (2009)

B.A. 2000, Iowa State University; M.S. 2002, Ohio University; Ph.D. 2006, University of Iowa.

ISMAIL, AYMAN Assistant Professor of Management and Chair of Entrepreneurship (2011)

B.Sc. 1995, MBA 1997, American University in Cairo; M.A. 1999, Ph.D. 2009, Massachusetts Institute of Technology (MIT).

ISMAIL, MATTHEW Senior Instructor and Head of Collection Development (2006)

B.A. 1984, Hiram College; M.A. 1989, The Ohio State University; M.L.S. 1994, Kent State University.

ISMAIL, YEHEA Visiting Assistant Professor of Electronics Engineering (2011)

B.Sc. 1993, M.Sc. 1996, Cairo University; M.Sc. 1998, Ph.D. 2002 University of Rochester.

IVEKOVIC, IVAN Professor of Political Science (1992); tenure

B. A. 1955, University of Paris; Diploma of Law 1963, Belgrad University; Ph.D. 1980, Zagreb University.

JABR, RANIA Senior Instructor of English Language (1990)

B.A. 1985, Alexandria University; R.S.A. 1988, British Council; M.A. 1990, American University in Cairo.

JAMES, CURIEL Assistant Professor of Sociology (2009)

B.A., Radio and Television, San Francisco State University; M.A. 1991, San Francisco State University; M.A. 1994, University of California, Davis; Ph.D. 2000, University of California.

JONES, DORIS Instructor of Rhetoric and Composition (2005)
B.A. 1982, University of Maryland; M.A. 1992, Georgetown University.

JONES, ROBERT Professor of Practice of Journalism and Mass Communication (2004)
B.A. 1971, Ohio University, Honors College; M.S. 1978, Syracuse University.

JUREIDINI, RAY Associate Professor of Sociology (2005)
B.A. 1977, B.A. 1979, PH.D. 1987, Flinders University of South Australia.

JUSTUS, ANNE Assistant Professor of Psychology (2007)
B.A. 1999, Tulane University; M.A. 2005, Ph.D. 2007, University of Rochester.

EL-KADI, AMR Professor and Chair of the Department of Computer Science and Engineering (1993); tenure
B.Sc. 1988, King Saud University; M.Sc. 1990, D.Sc. 1993, George Washington University.

KAMALY, AHMED Associate Professor and Chair of the Department of Economics (2002); tenure
B.A. 1991, M.A. 1995, The American University in Cairo; Ph.D. 2002, University of Maryland at College Park.

KAMAL, LAILA Visiting Senior Instructor of English Language (1990)
B.A. 1976, Cairo University; M.A. 1990, American University in Cairo.

KAMEL, SHERIF Professor of Management and Dean of the School of Business (2000); tenure
B.A. 1987, M.B.A. 1990, The American University in Cairo; Ph.D. 1994, London School of Economics, University of London.

KASSABGY, FOTNA Senior Instructor of English Language(1993)
B.A. 1968, Ain Shams University; M.A. 1993, American University in Cairo.

KASSAS, NEDA Instructor of English Language(1992)
B.A. 1979, Manchester Polytechnic; M.A. 1992, American University in Cairo.

EL-KASSAS, SHERIF Associate Professor of Computer Science and Engineering (2002); tenure
B.Sc. 1983, Cairo University; M.E.E. 1985, the Netherlands Universities Foundation; Ph.D. 1994, Eindhoven University of Technology.

KASSEM, MAYE Associate Professor of Political Science (2000); tenure
B.A. 1989, The American University in Cairo; M.A. 1991, Ph.D. 1998, University of London.

KAZZIHA, WALID Professor of Political Science (1972); tenure
B.A. 1965, American University of Beirut; M.S. 1967, University of Edinburgh; Ph.D. 1970, University of London.

KEENAN, KEVIN Associate Professor of Journalism and Mass Communication (1997); tenure
B.A. 1977, M.A. 1979, University of Illinois; Ph.D. 1990, University of Georgia.

KENNEY, ELLEN Assistant Professor of Islamic Art & Architecture (2011)

Personnel & Enrollment 755

B.Sc. 1985, Skidmore College, NY; M.A. 1993, New York University; Ph.D. 2004, New York University.

KHADR, ZEINAB A. Assistant Research Professor, Social Research Center (2006)
B.A. 1980 Cairo University, M.A. 1985 Cairo University, Ph.D. 1997 University of Michigan.

KHAFAGI, NOHA S. Visiting Senior Instructor of English Language (1990)
B.A. 1983, Ain Shams University; M.A. 1987, American University in Cairo; R.S.A. 1990, University of Cambridge.

KHALIL, AWAD Visiting Professor of Computer Science and Engineering (2004)
B.Sc. 1970, Military Technical College; M.Sc. 1979, Ph.D. 1981, Rennes-I University.

KHEDR, SAFWAN Professor of Construction and Architectural Engineering (1989); tenure
B.S. 1971, Cairo University; M.S. 1975, Ph.D. 1979, Ohio State University.

KHOLOUSSY, HANAN Assistant Professor of History and Middle East Studies (2008)
B.S. 1999, M.A. 1999, Georgetown University; Ph.D. 2008, New York University.

KHOURI, MALEK Associate Professor of Film, Director of the Film Program and Chair of the Department of Performing & Visual Arts (2008); tenure
B.F.A. 1979, York University; B.A. 1995, M.A. 1997, Carleton University; Ph.D. 2000, McGill University.

KINAWI, ANWAR Professor of Chemistry (1964); tenure
B.S. 1961, M.S. 1964, American University in Cairo, Ph.D. 1968, Rensselaer Polytechnic Institute.

KING, KIMBERLY Associate Professor of Practice of Journalism and Mass Communication (2009)
B.S. 1987, M.A. 2003 Ohio University.

KORANY, BAHGAT Professor of Political Science and Director of the AUC Forum (1998); tenure
B.A. 1961, Cairo University; M.A. 1966, University of Sussex; Ph.D. 1974, University of Geneva.

KORHONEN, OUTI Associate Professor of Law (2009)
M.A. 1994, University of Tampere; LL.M. 1996, S.J.D. 1999, Harvard Law School.

KOTINI, VASSILIKI Assistant Professor of Literature (2007)
B.A. 1997, Aristotelian University of Thessaloniki; M.A. 1998, Ph.D. 2005, King's College London.

KRIDLER, TERA Senior Librarian and Assistant University Archivist (2007)
B.A. 2002, University of Michigan-Flint, M.A. 2006, University of North Carolina-Chapel Hill.

LAMMI, WALTER Professor Emeritus of Philosophy (1991); tenure
A.B. 1969, Stanford University; M.A. 1976, Ph.D. 1988, Bryn Mawr College.

LANGMAN, JEFFREY Post-Doctoral Teaching Fellow in the Core Curriculum and affiliated

with the School of Sciences and Engineering (2010)

B.A. 1992, M.S. 1997, California Polytechnic State University; Ph.D. 2008, University of Texas at El Paso.

LESCH, ANN Professor of Political Science and Associate Provost of International Programs (2004) B.A. 1966, Swarthmore College; Ph.D. 1973, Columbia University.

LEACH, JERRY Distinguished Visiting Professor and Director of the Center of American Studies (2006)

B.A., Emory University, M.A., University of California at Berkeley, M.A., Ph.D., Cambridge University.

LEONE, ANTHONY Writing Instructor, Department of Rhetoric and Composition, Lecturer and Department Coordinator for Legal English, English Studies Department in the School of Continuing Education

B.A. 1974, Merrimack College, J.D. 1990, Massachusetts School of Law, M.A. 2008, AUC.

LORITE-ESCORIHUELA, ALEJANDRO Associate Professor of Law (2006); tenure

B.A. 1997, University of Geneva; M.A. 1998, Graduate Institute of International Studies; LL.M. 1999, S.J.D. 2004, Harvard Law School.

LOTFALLAH, WAFIK Associate Professor of Mathematics (2009)

B.A. 1990, 1992, M.A. 1993, Cairo University; M.A. 1995, PhD 1998, University of Wisconsin, Madison.

EL LOZY, MAHMOUD Professor of Theatre (1985); tenure

B.A. 1976, M.A. 1979, American University in Cairo; Ph.D. 1986, University of California, Santa Barbara.

M. ABDEL AZEEM, SHERIF Visiting Associate Professor of Electronics Engineering (2004)

B.Sc. 1986, M.Sc. 1989, Cairo University; Ph.D. 1995, Queen's University.

MADKOUR, TAREK Professor of Physical Chemistry of Polymers (2011)

B.Sc. 1981, M.Sc. 1986, Cairo University; Ph.D. 1992, University of Cincinnati.

MAGRIN, SARA Assistant Professor of Philosophy (2011)

M.A. 1998, University of Padua; Ph.D. 2010, McGill University; Ph.D. 2003, University of Padua.

EL-MAHALLAWY, WAEL Visiting Assistant Professor of Music (2009)

B.S. 1995, M.A. 2001, Ph.D. 2006, Helwan University.

EL-MAHDI, RABAB Assistant Professor of Political Science (2005)

B.A. 1996, M.A. 1998, American University in Cairo; Ph.D. 2005, McGill University.

MAKHLOUF, SANAA ABDEL HADY Senior Instructor of English Language (1988)

B.A. 1982, American University in Cairo; Diploma 1983 and 1984, Trinity College, Dublin; M.A. 1988, American University in Cairo.

Personnel & Enrollment 757

MAKHLOUF, SANAA A. M. Senior Instructor of Rhetoric and Composition (1997)
B.A. 1975, M.A. 1978, American University in Cairo; M.A. 1980, Harvard University.

MAMDOUH, WAEL Assistant Professor of Nanotechnology (2011)
B.Sc. 1997, Ain Shams University; M.Sc. 2002, Ph.D. 2005, Katholieke Universiteit Leuven.

MARQUIS, GEORGE Senior Instructor of Rhetoric and Composition (2006)
B.A. 1985, Boston University; M.A. 1987, The American University in Cairo.

ELMASRY, MOHAMAD Assistant Professor of Journalism and Mass Communication (2011)
B.Sc. 1998, M.A. 2005, University of Minnesota; Ph.D. 2003, University of Iowa.

ELMASRY, YARA Instructor of Rhetoric and Composition (2011)
B.A. 2003, M.A. 2005, The American University in Cairo; Ph.D. 2012, University of Essex.

MASSOUD, SUZANNE Senior Instructor of Arabic Language (1980); permanent status
B.A. 1973, M.A. 1980, American University in Cairo.

MASWOOD, SYED Associate Professor of Political Science (2008)
B.Sc. 1976, Sophia University; M.A. 1981, Australian National University; Ph.D. 1986,
Carleton University.

MCAULEY, RUTHANN Instructor of English Language (2008)
B.A. 1981, University of Texas at Austin; M.S.Ed. 2000, Indiana University Bloomington.

McCULLOUGH, GRETCHEN Senior Instructor of Rhetoric and Composition (2000)
B.A. 1984, Brown University; M.F.A. 1995, University of Alabama.

MCEWEN, SUSAN Instructor of Rhetoric and Composition (2009)
A.B. 1975, Barnard College; M.S.W. 1981, Smith College School for Social Work; M.Ed.
1991, Boston University.

MCMAHON, SEAN Assistant Professor of Political Science— (2010)
B.A. 1995; M.A. 1997; Ph.D. 2005, University of Alberta.

MEHREZ, SAMIA Professor of Arabic Studies (1991); tenure
B.A. 1977, M.A. 1979, American University in Cairo; Ph.D. 1985, University of California,
Los Angeles.

MELANEY, WILLIAM Associate Professor of English and Comparative Literature (2000);
tenure
B.A. 1983, Duquesne University; M.A. 1986, University of Chicago; Ph.D. 1993, SUNY-
Stony Brook.

MIKHAEL, MARK Instructor of Rhetoric and Composition (2007)
B.A. 1999, Ramapo College of New Jersey; MFA 2003, Brooklyn College.

MIKHAIL, MIKHAIL Professor of Computer Science and Engineering (1982); tenure
B.S. 1968, B.S. 1970, Cairo University; M.S. 1973, Ph.D. 1977, Carleton University, Ottawa.

MIKHAIL, MONA Professor of Arab and Islamic Civilizations (2007)
B.A. 1963, M.A. 1965, Cairo University; M.A. 1967, Ph.D. 1972, University of Michigan.

MIKHAIL, WILLIAM M. Professor of Economics (1974); tenure
B.Com. 1957, Ain Shams University; Diploma 1959, Cairo University; Ph.D. 1969, University of London.

MINEART, MARK Associate Professor of Practice of Theatre (2011)
B.A. 1988, University of North Carolina; M.A. 1992, University of Delaware.

AL MIRAZI, HAFEZ Director, Kamal Adham Center for Journalism Training and Research (2009)
B.A. 1979, Cairo University; M.A. 1987, Catholic University of America.

MISHRIKI, AFAF Senior Instructor of English Language (1989)
B.A. 1984, M.A. 1989, American University in Cairo.

MITIAS, LARA Visiting Assistant Professor—Post-Doctoral Fellow in Core Curriculum
Affiliated with the School of Sciences and Engineering (2008)
B.A. 1991, M.A. 2001, Ohio University, Ph.D. 2008, University of Hawai'i at Manoa.

MOFTAH, LAURENCE Librarian Emeritus (1979)
B.A. 1969, Cairo University; M.A. 1979, American University in Cairo; M.A. 1987, American University in Cairo.

MOHAMMED, HUSSEIN H. Visiting Associate Professor of Arab and Islamic Civilizations (2011)

MOHAMED, SHERIF ABDELAZEEM Associate Professor of Electronics (2004); tenure
B.Sc. 1986, M.Sc. 1989, Cairo University; Ph.D. 1995, Queen' University.

MOORE, KENNETH (STEVE) Associate Professor of Practice of Psychology (2011)
B.A. 1972, Christopher Newport University; M.A. 1973, Radford University; D.Ed. 1986, The College of William and Mary Williamsburg.

MOOS, JONAH Instructor of English Language (2005)
B.A. 2001, University of Massachusetts; M.A. 2005, American University in Cairo.

MONFORTE, TANYA Assistant Professor of Law (2005)
B.A. 1998, Wichita State University; M.A. 2001, Onati International Institute for the Sociology of Law; J.D. 2005, Harvard Law School.

EL-MORSI, MOHAMED Assistant Professor of Mechanical Engineering (2007)
B.Sc. 1990, Ain Shams University; M.Sc. 1995, Ain Shams University; Ph.D. 2002, University of Wisconsin-Madison

MOSTAFA, HODA Associate Professor of Practice, Scientific Thinking (2011)

Personnel & Enrollment 759

MOSTAFA, MAGDA Visiting Assistant Professor of Construction and Architectural Engineering (2009)

B.Sc. 1994, M.Sc.1999, Ph.D. 2003, Cairo University.

MOTAWY, YASMINE Instructor of Rhetoric and Composition (2006)

B.A. 2001, American University in Cairo; M.A. 2003, The American University in Cairo.

MOTLAGH, AMY Assistant Professor (2008)

B.A. 1998, Pomona College; M.F.A. 2001, Creative Writing, New York University; M.A. 2001, Ph.D. 2009, Princeton University.

MOURAD, MAHA Assistant Professor of Marketing (2009)

B.A. 1993, Cairo University; B.A. 1995, The American University in Cairo; MBA 1999, The American University in Cairo; Ph.D. 2004, University of Nottingham

MOUSSA, MAHMOUD Instructor and Director, Arabic Language Credit Courses, ALI (1982); permanent status

B.A. 1972, Ain Shams University; M.A. 1982, The American University in Cairo; Ph.D. 1998, Ain Shams University.

MOUSTAFA, AHMED Assistant Professor of Biology (2010)

B.S. 1998, Alexandria University; Ph.D. 2009, University of Iowa.

MOUSTAFA, MAGDI Professor and Chair of the Department of Mathematics (1990); tenure

B.Sc. 1973, B.Sc. 1975, M.Sc. 1978, Cairo University; Ph.D. 1987, North Carolina State University.

MOUSTAFA, MOHAMED N. Assistant Professor of Nanotechnology (2011)

MOUSTAFA, MOHAMED Associate Professor of Computer Science (2011)

MUJAHID, NADYA CHISHTY Assistant Professor of English and Comparative Literature (2009)

BA, Bryn Mawr College, 1992; MAT (English), Smith College, 1996, MA, McGill University, 1998, PhD. McGill University, 2002.

NADA, ATEF Assistant Professor and Director of the Zamalek Dormitory (1965)

B.A. 1965, M.A. 1976, Ph.D. 1984, Alexandria University.

EL-NAGGAR, NEHAL Visiting Associate Professor of Arabic Studies (2008)

B.A. 1984, Ain Shams University; M.A. 1989, The American University in Cairo; Ph.D. 2000, Ain Shams University.

NASHED, HODA G. Visiting Instructor and Associate Director of Core Curriculum (1993)

B.A. 1978, Cairo University; M.A. 1982, American University in Cairo; Ph.D. 1991, Cairo/Rice University.

NASRALLAH, MAGDI M. Professor and Chair of the Department of Petroleum and Energy Engineering (2004)

B.Sc. 1965, Cairo University; M.Sc. 1968, The American University in Cairo; Ph.D. 1972, University of California.

NASSAR, KHALED Associate Professor of Construction and Architectural Engineering (2008)
B.S. 1992, M.S. 1995, Cairo University; Ph.D. 2000, Virginia Tech.

NASSEF, ASHRAF Professor of Mechanical Engineering (2002); tenure
B.Sc. 1987, M.A. 1990, Cairo University; Ph.D. 1996, McMaster University.

NASR, EMAN Assistant Professor of Computer Science and Engineering (2009)
B.Sc. 1987, The American University in Cairo; M.Sc 1996, PhD 2005, Cairo University.

NOSHOKATY, SHADI Assistant Professor of Art (2011)
B.A. 1994, MFA 2000, Ph.D. 2007, Helwan University.

NOSSEIR, AIDA Librarian Emeritus (1962)
B.A. 1958, M.S.L.S. 1966, Ph.D. 1987, Cairo University.

NOSSEIR, NAZEK Associate Professor of Sociology (1970); tenure
B.A. 1963, M.A. 1970, American University in Cairo; Ph.D. 1976, Princeton University.

NOSTAS, ALISSA Instructor of English Language (2011)
B.A. 1998, Mount Holyoke College; M.A. 2007, Colorado State University.

NOUH, AHMED Associate Professor of Petroleum Engineering (2011)

O'CONNELL, KEVIN Professor of Management and Chair of Willard W. Brown International
Business Leadership (2011)
B.A. 1978, Harvard College; MBA 1994, Stanford University.

O'KANE, BERNARD Professor of Islamic Art and Architecture (1980); tenure
LL.B. 1972, Queen's University of Belfast; Ph.D. 1982, University of Edinburgh.

OMAR, M. HOSNY Professor of Physics (1968); tenure
B.S. 1957, Ain Shams University; Drs. 1960, Kamerlingh Onnes Lab; Dr. Wis. Nat. 1962,
University of Leiden.

OSMAN, MARIAM Visiting Instructor of English Language
B.A. 1976, Cairo University, M.A. 1980, American University in Cairo, Ph.D. 1990,
University of Washington

PANDYA, RASHMIKA Assistant Professor of Philosophy (2009)
B.A. 1995, University of Regina; M.A. 2000, Ph.D. 2008, McMaster University.

PANZARELLA, RICHARD, Instructor of Rhetoric and Composition (2010)
1991 M.A.T. School for International Training, Brattleboro, VT

PARFITT, ROSE Assistant Professor of Political Science (2011)

Personnel & Enrollment 761

M.A. 2006, Ph.D. 2010, School of Oriental and African Studies.

PAROLIN, GIANLUCA Assistant Professor of Law (2008)
B.L. 2001, University of Turin; LL.D. 2005, University of Turin (I), Italy.

PERRY, FRED Professor Emeritus of Teaching English as a Foreign Language(1986); tenure
B.A 1973, Pahlavi University; M. Sc. in Ed. 1975, Ph.D. 1978, Indiana University.

PETERSON, SAMIHA Distinguished Visiting Professor and Dean of the Graduate School of
Education(2007)
B.A. 1961, M.A. 1967, American University in Cairo; Ph.D. 1971, University of Minnesota.

PERDIGON, SYLVAIN Assistant Professor of Anthropology (2011)
B.A. 1997, Ecole Normale Superieure; M.A. 2001, Ecole des Hautes Edudes en Sciences
Sociales; Ph.D. 2011, The Johns Hopkins University.

PEUCHAUD, SHEILA Assistant Professor of Journalism and Mass Communication (2011)
B.A. 1999, University of Michigan; M.A. 2004, University of Missouri; Ph.D. 2010,
University of North Carolina.

PINGREY, SARAH Assistant Professor (2008)
B.A. 2001, The State University of New York; Ph.D. 2008, The George Washington University.

PURINTON, TED Assistant Professor, Graduate School of Education (2011)
B.A. 1997, M.A. 2001, California State University; D.Ed. 2005, University of Southern California.

RAE, GAVIN Post-Doctoral Teaching Fellow in the Core Curriculum and affiliated with the
Department of Philosophy (2010)
B.A. 2003 Robert Gordon University; M.Sc. 2004, University of Edinburgh; M.A. 2006, Ph.D.
2010, University of Warwick.

RAFEA, AHMED Visiting Professor of Computer Science and Engineering (1987)
B.Sc. 1973, Cairo University, Ph.D, 1980, Universite Paul Sabatier, Toulouse France

RAGAB, ADEL Visiting Assistant Professor of Petroleum Engineering (2011)

RAGAI, JEHANE Professor of Chemistry (1970); tenure
B.S. 1966, M.S. 1968, American University in Cairo; Ph.D. 1976, Brunel University, London.

RAMADAN, ADHAM Associate Professor and Chair of the Department of Chemistry
(2003); tenure
B.Sc. 1991, The American University in Cairo; Ph.D. 1996, Cambridge University.

RAMADAN, MOHAMED Visiting Research Professor, Social Research Center(2006)
B.Sc. 1976, M.Sc. 1982, Ph.D. 1988, Cairo University.

EL RAMLY, HALA Associate Professor of Economics (2000); tenure
B.A. 1985, The American University in Cairo; M.A. 1993, Ph.D. 1998, University of Houston.

RASHAD, HODA Research Professor and Director of the Social Research Center (1995)
B.Sc. 1971, M.Sc. 1974, Cairo University; Ph.D. 1977, London University.

RATEB, DINA F. Associate Professor of Management and Director of Business Computer Center (1993); tenure
B.A. 1979, Cairo University; M.A. 1984, American University in Cairo; Ph.D. 1992, University of Pittsburgh.

REIMER, MICHAEL J. Associate Professor of History (1990); tenure
B.A. 1976, Pepperdine University; M.A. 1982, Ph.D. 1989, Georgetown University.

EL RIDI, HODA Senior Instructor and Head of ILL/ Document Delivery Electronic Resources Services (1981); permanent status
B.A. 1972, Cairo University; M.A. 1980, American University in Cairo.

RIEKER, MARTINA Assistant Professor and Director of Cynthia Nelson Institute for Gender & Women's Studies (1998)
B.A. 1982, M.A. 1988, Ph.D. 1997, Temple University.

RISSMANN-JOYCE, STACIE Assistant Professor of Instructional Design and Technology (2011)
B.A. 1972, M.Ed. 1979, University of Utah; Ph.D. 1981, University of Minnesota.

RIZK, NAGLA Associate Professor; Associate Dean of Graduate Studies and Research and Director of Access of Knowledge for Development Center in the School of Business (1997); tenure
B.A. 1983, M.A. 1987, American University in Cairo; Ph.D. 1995, McMaster University.

RIZZO, HELEN Associate Professor of Sociology (2001); tenure
B.A. 1993, Baldwin-Wallace College; M.A. 1995, Ph.D. 2000, Ohio State University.

RIZZO, SUZANNE Instructor of English Language (2011)
B.A. 1997, Baldwin-Wallace College; M.A. 2004, Kent State University.

RODENBECK, JOHN Professor Emeritus of English Literature (1964)
A.B. 1958, Harvard College; M.A. 1959, Ph.D. 1964, University of Virginia.

JOHNSTON, ROSE Instructor and Reference/Instruction Librarian (2009)
B.S. 1974, Lycoming College; M.L.S. 1975, University of Pittsburgh

RUEBY, CHERYL Senior Librarian & Head of Cataloging (2001)
B.S. 1973, University of Rochester; M.L.S. 1977, State University of New York at Buffalo.

EL SAADY, MONA Senior Instructor of English Language (1993)
B.A. 1983, M.A. 1993, American University in Cairo.

SAAD, REEM Associate Research Professor and Director of the Middle East Studies Center (1996)
B.A. 1984, M.A. 1987, The American University in Cairo; Ph.D. 1994, St. Anthony's

Personnel & Enrollment 763

College, Oxford.

SABBAHY, LISA Assistant Professor of Egyptology (2006)

B.A. 1972, Bryn Mawr College; M.A. 1975, University of California; Ph.D. 1982, University of Toronto.

SABEA, HANAN Assistant Professor of Anthropology (2005)

B.A. 1985, The American University in Cairo; M.A. 1992, Ph.D. 2001, John Hopkins University.

SADEK, MOHAMED Assistant Professor of Mathematics and Actuarial Science (2010)

B.Sc. 2005, Cairo University; M.A. 2006, Ph.D. 2010, University of Cambridge.

SAFAR, SHERIF Associate Professor of Structural Engineering (2008)

B.Sc, M.Sc, Cairo University; PhD, Iowa State University, 1995.

SAID, MONA Assistant Professor of Economics (2005)

B.A. 1989, M.A. 1991, American University in Cairo; M.Phil. 1992, Ph.D. 2000, University of Cambridge.

EL SAKKOUT, HAMDY Professor Emeritus of Arabic Studies (1967)

B.A. 1955, Dar Al Ulum; Dip. Ed. 1956, Ain Shams University; Ph.D. 1965, Cambridge University.

SALAH EL DIN, YASMIN Visiting Senior Instructor of English Language (2005)

B.A. 1985, Cairo University; M.A. 1989, The American University in Cairo; Ph.D. 2000, Cairo University.

SALEM, HANADI Associate Professor of Mechanical Engineering (1999); tenure

B.Sc. 1983, M.Sc. 1987, The American University in Cairo; Ph.D. 1997, Texas A&M.

SALEM, HEBATALLA Visiting Senior Instructor of Arabic Language (2003)

B.A. 1986, M.A. 1996, American University in Cairo.

SALEVURAKIS, JOHN Associate Professor of Economics (2004); tenure

B.A. 1993, M.B.A. 1996, Westminster College; Ph.D. 2003, University of Utah.

SALGUES, EMMANUELLE Visiting Assistant Professor—Post-Doctoral Teaching Fellow in the Core Curriculum (2010)

B.A. 1999, University of California at Berkeley; Ph.D., 2009 Yale University

SAMAHA, KHALED Assistant Professor of Accounting (2008)

BSc. 1994, Cairo University; M.Sc. 1999, University of Birmingham, U.K.; Ph.D. 2005, University of Manchester, U.K.

SANKARAN, NEERAJA Visiting Assistant Professor in the School of Sciences and Engineering—Post-Doctoral Fellow in Core Curriculum (2007)

B.Sc. 1986, Panjab University; M.Sc. 1990, University of Alberta; M.Phil. 2002, M.A. 2001, Ph.D. 2006, Yale University.

SAROFIM, MARIAN Senior Instructor of English Language (1975); permanent status
B.A. 1966, Cairo University; M.A. 1974, American University in Cairo.

SARTAIN, ELIZABETH Professor Emeritus of Arabic Studies (1980)
B.A. 1964, Ph.D. 1968, Cambridge University.

SAVILLE, KATHLEEN Senior Instructor of Rhetoric and Composition (2003)
B.Sc. 1979, University of Rhode Island; M.A. 1993, St. Michael's College.

EL SAYED, HANI Assistant Professor of Law and Chair of the Department (2005)
LL.B. 1993, Damascus Law School; LL.M. 1996, J.D. 2004, Harvard Law School.

EL SAYED, MAYYADA Visiting Assistant Professor of Chemical Engineering (2011)
B.Sc. 1998, M.Sc. 2002, Cairo University; Ph.D. 2010, University of Cambridge.

AL SAWI, LAILA Senior Instructor of Arabic Language (1981); permanent status
B.A. 1978, M.A. 1981, American University in Cairo.

EL SAWY, SHAHIRA Deputy Librarian and Dean of the Libraries and Learning Technologies
(1966); tenure
B.A. 1958, Cairo University; M.A. 1965, M.B.A. 1991, American University in Cairo.

SCANLON, GEORGE Professor of Islamic Art and Architecture (1974); tenure
B.A. 1950, Swarthmore College; M.A. 1956, Ph.D. 1959, Princeton University.

SCHAEFER, JOHN Assistant professor of Anthropology (2009)
B.A. 1997, John Brown University; M.A. 2000, University of Arkansas; Ph.D. 2009,
University of Texas at Austin.

SCHLEIFER, S. ABDULLAH Professor Emeritus of Journalism & Mass Communication (1983)
B.A. 1956, University of Pennsylvania; M.A. 1980, American University of Beirut.

SEDDIK, KARIM Assistant Professor of Construction and Architectural (2011)
B.Sc. 2001, M.Sc. 2004, Alexandria University; M.Sc. 2007, Ph.D. 2008, University of Maryland.

SEDKY, SHERIF Professor of Physics, Associate Dean of Graduate Studies and Research, SSE
and Director of the Youssef Jameel Science and Technology Research Center(2002); tenure
B.Sc. 1992, M.Sc. 1995, Cairo University; M.Sc. 1996, Ph.D. 1998, Catholiek Universiteit.

SEGHIR, ABDELKRIM Assistant Professor of Economics and Associate Dean for
Undergraduate Studies and Administration (2006)
B.Sc. 1996, M.A. 1998, Ph.D. 2002, University Paris 1, Sorbonne.

SEIKALY, SHERENE Assistant Professor of History (2009)
B.A. 1993, University of California; M.A. 2000, Georgetown University; Ph.D. 2007, New
York University.

SELIM, TAREK Associate Professor of Economics (2002); tenure

Personnel & Enrollment 765

B.Sc. 1992, M.Sc. 1995, The American University in Cairo; M.Sc. 1997, Iowa State University; M.Phil. 2000, George Washington University; M.B.A. 2001, Johns Hopkins University; Ph.D. 2002, George Washington University.

SEOUDI, IMAN, Assistant Professor of Management (2009)

B.A. 1995, M.A. 2000, The American University in Cairo; Ph.D. 2009, Case Western Reserve University, USA.

SERAG, MOHAMED Professor of Arabic Studies (1992); tenure

B.A. 1966, M.A. 1971, Ph.D. 1976, Cairo University.

SERAG EL DIN, MOHAMMAD AMR Professor of Mechanical Engineering (1996); tenure

B.Sc. 1970, M.Sc. 1973, Cairo University; Ph.D. 1977, London University.

SETTLAGE, BONNIE Visiting Assistant Professor of Psychology (2008)

B.A. 1995, University of California at Berkely; M.A. 2006, University of Rochester; Ph.D. 2006, University of Rochester.

SHAARAWI, AMR Professor of Physics and Associate Dean for Graduate Studies (1999); tenure

B.Sc. 1978, M.Sc. 1980, Cairo University; M.Sc. 1984, Ph.D. 1989, Virginia Polytechnic Institute & State University.

SHABKA, MARGARET Senior Instructor and Interim Chair, Department of Rhetoric and Composition(2002)

B.A. 1970, The American University in Cairo; M.A. 1973, Ph.D. 1981, Kent State University.

SHAFER, ANN Assistant Professor of Art (2005)

B.A. 1984, University of Nebraska; M.A. 1991, University of Chicago; Ph.D. 1998, Harvard University; M.Arch. 2001, Rhode Island School of Design.

SHAHIN, HANAN Visiting Instructor, Department of Rhetoric and Composition

B.A. 1987, The American University in Cairo; M.A. 1997, The American University in Cairo; D.B.A 2001, California Coast University.

SHAHIN, MAGDA Professor of Practice and Interim Director of Al-Waleed Center for American Studies and Research (2011)

B.A. 1971, Cairo University; M.A. 1974, The American University in Cairo; Ph.D. 1984, Cairo University.

SHALAKANY, AMR Associate Professor of Law (2004); tenure

B.A. 1993, L.L.M. 1995, Cairo University Faculty of Law; L.L.M. 1996, S.J.D. 2000, Harvard University.

SHAMMA, HAMED Assistant Professor of Management (2007)

B.A. 1999, M.B.A. 2002, The American University in Cairo; Ph.D. 2007, The George Washington University.

AL-SHARMANI, MULKI MOHAMED Assistant Research Professor, Social Research Center

(2005) B.A. 1987, Ain-Shams University; M.A. 1991, 1998, The American University in Cairo; Ph.D 2004, The John Hopkins University.

EL-SHAWARBY, HALA Visiting Senior Instructor of English Language (2005)
B.A. 1978, Cairo University; M.A. 1982, The American University in Cairo; Ph.D. 1990, Cairo University.

SHAWKY, SHERINE Research Professor, Social Research Center (2003)
B.A., 1980, Ain Shams University; M.A., 1989, Catholic University of Louvain; M.A., 1992, Free University of Brussels; PhD, 1992, Catholic University of Louvain.

EL SHAZLY, ALAA Visiting Professor of Economics (2011)

SHEBEENIE, AZZA Z. Visiting Instructor of English Language and Coordinator of English 100 (1993)
B.A. 1977, M.A. 1984, Ph.D. 1991, Cairo University.

SHEHAB, BAHIA Teaching Associate of Art (2011)
B.A. 1999, The American University in Beirut; M.A. 2009, The American University in Cairo.

EL-SHEIKH, SALAH Visiting Associate Professor of Physics (2005)
B.Sc. 1975, B.Sc. 1978, Cairo University; M. Sc. 1985, Ph.D. 1989, University of Manitoba.

EL-SHENNAWY, ABEER Visiting Assistant Professor of Economics (2005)
B.Sc. 1988, Cairo University; M.A. 1992, The American University in Cairo; Ph.D. 1998, University of Minnesota.

SHERIF, AHMED H. Professor of Construction and Architectural Engineering (1992); tenure
B.Arch. 1979, M.Sc. 1983, Cairo University; D. Arch, 1988, University of Michigan.

EL SHERIF, MOHAMED H. Professor Emeritus of Management (1985)
B.S. 1975, Military Technical College, Cairo; M.S. 1978, University of Alexandria; Ph.D. 1982, Massachusetts Institute of Technology.

SHERIF, NAGWA Visiting Professor of Construction and Architectural Engineering (2009)
B.Sc. 1973, Cairo University; M.Sc. 1997, Ph.D. 1994, Universite de Montreal.

EL-SHIMI AMANI Senior Instructor of Rhetoric and Composition(1995)
B.A. 1987, University of Kuwait; M.A. 1992, The American University in Cairo; CTEFLA 1994, Royal Society of Arts, Cambridge University.

EL-SHIMI, GHADA Instructor of Rhetoric and Composition (2007)
B.A. 1990, University of Kuwait; M.A. 1993, The American University in Cairo.

SHOEIB, TAMER Associate Professor of Chemistry (2011)
B.Sc. 1997, Ph.D. 2002, York University, Canada.

SHOLKAMI, HANIA Associate Research Professor, Social Research Center (2005)

Personnel & Enrollment 767

B.A. 1985, M.A. 1988, The American University in Cairo; Ph.D. 1997, The University of London.

SHOUKRI, DORIS Professor Emeritus of English Literature (1955)
B.A. 1948, Hunter College; M.A. 1950, Ph.D. 1953, Bryn Mawr College.

SHUSTER, ALEXANDER Professor of Mathematics and Actuarial Science (2010)
B.Sc. 1992, University of Toronto; M.A. 1995, Ph.D. 1997, University of Michigan.

SIAM, RANIA Associate Professor of Biology (2005); tenure
M.B.B. Ch. 1993, Ain Shams University; Ph.D. 2001, McGill University.

ELSISSI, NERMINE Assistant Professor of Mathematics and Actuarial Science (2010)
B.A. 2002, Pace University; M.A. 2003, Ph.D. 2006, University of Texas at Dallas.

SKOUTERIS, THOMAS Associate Professor of Law (2008); tenure
B.A. 1993, Democritos University of Thrace; LL.M. 1995, Ph.D. 2008, Leiden University.

SMITH, EDWARD Professor of Construction and Architectural Engineering (1998); tenure
B.Sc. 1977, M.Sc. 1980, University of Delaware; Ph.D. 1987, University of Michigan.

SOLIMAN, EZZELDIN Visiting Associate Professor of Physics (2007)
B.Sc. 1992; M.Sc. 1995, Cairo University; Ph.D. 2000, University of Leuven.

SOLIMAN, IMAN Instructor of Arabic Language (2006)
B.A. 1982, Ein Shams University; Ph.D. 2003, The University of Edinburgh.

SOLIMAN, KAHLID Associate Professor of Management (2011)
B.Sc. 1986, Ain Shams University; MBA 1993, Murray State University; Ph.D. 2000, The University of Memphis.

SOLTAN, GAMAL Associate Professor of Practice of Political Science (2011)
B.Sc. 1981, M.Sc. 1990, Cairo University; Ph.D. 1995, Northern Illinois University.

SPENCER, JAYME Instructor and Director of Public Services in the Main Library (1972)
B.A. 1965, Louisiana State University; M.A. 1966, College of William and Mary; M.A. 1969, University of Denver.

STELZER, STEFFEN W . Professor and Chair of the Philosophy Department (1978); tenure
M.A. 1973, Ph.D. 1976, Free University of Berlin.

STEVENS, PAUL B. Professor Emeritus of Linguistics (1983); tenure
B.A. 1965, University of Detroit; M.S. 1972, Ph.D. 1974, Georgetown University.

SULLIVAN, EARL L. Provost Emeritus (1973); tenure
B.A. 1964, Seattle University; Ph.D. 1970, Claremont Graduate School.

SWILLAM, MOHAMMED Assistant Professor of Physics (2011)

B.Sc. 2000, M.Sc. 2004, Ain Shams University; Ph.D. 2008, McMaster University.

SWITZER, ROBERT W. Associate Professor of Philosophy (1991); tenure
B.A. 1982, M.A. 1983, University of Toronto; Ph.D. 1989, Pennsylvania State University.

TABISHAT, MOHAMED Assistant Professor of Anthropology (2010)
B.A. 1987, M.A. 1991, Yarmouk University; Ph.D., 2002, University of Cambridge.

TAHA, ZEINAB Associate Professor and Director of Arabic Language Institute (1981);
permanent status
B.A. 1978, M.A. 1981, American University in Cairo; Ph.D. 1995, Georgetown University.

TOKIĆ, MATE NIKOLA Assistant Professor of History (2009)
B.A. 1995, Goucher College; M.A. 1996, London School of Economics; Ph.D. 2007,
University of Pennsylvania.

TOLBA, AHMED Assistant Professor of Management and Director of El-Khazindar Business
Research and Case Center (2006)
B.Sc. 1997, M.B.A. 2001, The American University in Cairo; Ph.D. 2006 George
Washington University.

TOOMA, ESKANDAR British Petroleum Associate Professor of Finance and Director of the
Citadel Capital Financial Service Center; tenure
B.A. 1998, The American University in Cairo; B.B.A. 1999, M.S. 2000, Adelphi University;
M.S. 2002, Ph.D. 2003, Brandeis University.

TOPA, ALESSANDRO Assistant Professor of Philosophy (2009)
MA and PhD, Rheinische Friedrich-Wilhelms-Universität in Bonn, Germany

TSCHIRGI, ROBERT Professor of Political Science (1984); tenure
B.A. 1968, M.A. 1970, American University of Beirut; Ph.D. 1976, University of Toronto.

TUTWILER, RICHARD Research Professor and Director of the Desert Development Center
B.A. 1973, Macalester College; M.A. 1976, Ph.D. 1987, State University of New York
of Binghamton.

TWEDDLE, LESLEY Librarian Emeritus (1980)
B.A. 1967, Oxford University; M.A. 1969, Sheffield University.

ULLAH, AKM AHSAN Assistant Professor and Associate Director of the Center for
Migration and Refugee Studies (2009)
B.S.S. 1991, University of Dhaka; M.S.S. 1992, University of Dhaka; M.Sc. 2002, Asian
Institute of Technology, Thailand; Ph.D. 2007, City University of Hong Kong.

URGOLA, STEPHEN Senior Instructor, University Archivist and Director of the Records
Management Program (2001)
B.A. 1994, College of the Holy Cross; M.A. 1998, New York University.

Personnel & Enrollment 769

VAN BOGAERT, DIANA Instructor, Administrative Director of Legal English Training in the Department of Law (2005)

B.A. 1980, Southern Illinois University; M.A. 1994, M.B.A. 2003, American University in Cairo.

VERLENDEN, JOHN Instructor of Rhetoric and Composition (2003)

B.A. 1986, Rhodes College; M.F.A., 1988, Louisiana State University.

WACHOB, PHYLLIS Assistant Professor of Teaching English as a Foreign Language(2005)

B.A. 1971, University of California at Santa Cruz; B.Phil. 1973, University of York; M.A. 1977, California State University; D.Ed. 2000, University of Sydney.

WAKED, AZZA Instructor of Arabic Language (1988); permanent status

B.S. 1973, Assiut University; M.A. 1985, American University in Cairo.

WALI, WAFAA Instructor of Rhetoric and Composition (2004)

B.A. 1989, Alexandria University; M.A. 1997, The American University in Cairo.

WALY, AHMED Assistant Professor of Construction Engineering (2011)

WARREN, TIMOTHY Senior Instructor of Rhetoric and Composition (2004)

B.A. 1976, Trinity College; M.A. in TEFL 1987, The American University in Cairo.

WASZKOWSKI, DENISE Instructor of Rhetoric and Composition (2010)

B.A. 1995, Humanities, San Diego State University; M.A. 2000, Linguistics, San Diego State University.

WEEKS, KENT Professor Emeritus of Egyptology (1988)

B.A. 1963, M.A. 1965, University of Washington; Ph.D. 1970, Yale University.

WESTMORELAND, MARK RYAN Assistant Professor of Anthropology (2008)

B.A. 1993, University of Colorado; M.A. 2001, University of Texas; Ph.D. 2008, University of Texas at Austin.

WHITE, LISA J. Senior Instructor of Arabic Language(1989)

B.A. 1976, Penn State University; M.A. 1981, Harvard University.

WILLIAMS, GLENN Assistant Professor of Finance (2009)

B.S. 1990, University of South Carolina; M.B.A 1997, Rollins College; Ph.D. 2004, University of Florida.

WILLIAMS, ROBERT Associate Professor of Teaching English as a Foreign Language (2003); tenure

B.A. 1977, University of Oklahoma; M.A. 1989, Ph.D. 1995, University of California.

WINTER, AMAL Visiting Professor of Practice in the Graduate School of Education (2010)

B.A. 1961, Stanford University; M.Sc. 1972 San Jose State University; Ph.D. 1973, Alliant University.

WISHART, CRAIG G. Assistant Professor of Management (2011)

B.Sc. 1989, University of Pittsburgh; Ph.D. 1998, Case Western Reserve University.

WOLF-GAZO, ERNEST Professor of Philosophy (1991); tenure

B.A. 1969, George Washington University; Ph.D. 1974, Bonn University, Germany.

YACOUT, SHAHIRA Visiting Senior Instructor of Arabic Language (2003)

B.A. 1985, M.A. 1997, American University in Cairo.

YAGHMOUR, HUGUETTE Senior Instructor and Director of Automated Systems (1984);
permanent status

B.S. 1976, M.A. 1982, American University in Cairo.

YODER, ELISABETH Senior Instructor of English Language (1995)

B.A. 1981, University of Notre Dame; M.A. 1991, American University in Cairo.

YOUNAN, MAHER Professor of Mechanical Engineering and Associate Dean for
Undergraduate Studies, SSE (1993); tenure

B.Sc. 1969, M.Sc. 1972, Cairo University; Ph.D. 1975 University of Tennessee.

YOUNG, ANDREW Instructor of Rhetoric and Composition (2011)

M.A. 1983, St. Andrews University.

YOUSSEF, AYMAN Visiting Assistant Professor of Mechanical Engineering (2011)

B.Sc. 1998, M.Sc. 2001, Cairo University; Ph.D. 2006, University of Windsor.

YOUSSEF, LOBNA Professor of English (2010)

B.A. 1979, Cairo University; M.A. 1981, St. John's College, Santa Fe, New Mexico; Ph.D.
1988, Cairo University

YOUSSEF, SAMIR Professor of Management (1980); tenure

B.Com. 1961, Cairo University; M.B.A. 1967, University of Oregon; Ph.D. 1971, University
of Iowa.

ZADA, SUHER Professor of Biology (1998); tenure

B.Sc. 1965, M.Sc. 1969, Ph.D. 1975, Cairo University.

ZAHER, ANGIE Assistant Professor of Accounting (2009)

B.Sc. 1997, Florida International University; M.A. 2000, American University in Cairo; PhD
2009, Florida International University.

ZANOUN, EL SAYED Associate Professor of Mechanical Engineering (2011)

B.Sc. 1988, Menofiya University; M.Sc. 1995, Cairo University; Ph.D. 2003, Friedrich-
Alexander University.

Student Enrollment Statistics

In the fall semester of 2010, the university enrolled 6,553 students in all of its academic programs. During the 2009-2010 fiscal year 32,016 individuals were served by the non-credit programs and courses in the School of Continuing Education.

The tables below give breakdowns of the enrollment in the first semester of the academic year 2010-2011. The abbreviations are: Undergraduate Program, UG; Graduate Program, G; Diploma Program, DP; Non-degree, ND; School for Continuing Education, SCE; Center for Arabic Study Abroad, CASA; Arabic Language Institute, ALIN; Freshman, Fr; Sophomore, So; Junior, Jr; Senior, Sr; Special Status, SP STAT; Preparatory English, PREP ENG.

Enrollment Fall 2010

Academic Programs

Undergraduate	4,760
Graduate Degree	1,224

Not Seeking a Degree

Graduate Diploma	15
Center for Arabic Study Abroad	23
Arabic Language Institute	98
Non-degree and Auditors	433

The School for Continuing Education	32,016
-------------------------------------	--------

Student Status

New students	1,483
Readmitted & Returning	5,070

Male	3,052
Female	3,501

Nationality	UG	G	DP	ALIN	CASA	ND	TOTAL
1. Australia	0	0	0	0	0	1	1
2. Austria	0	0	0	0	1	1	2
3. Bahrain	0	0	0	0	0	3	3
4. Belgium	0	0	0	1	2	0	3
5. Brazil	0	0	0	0	0	1	1
6. Canada	1	0	0	3	5	8	17
7. Colombia	0	0	0	1	0	0	1
8. Croatia	0	0	0	2	0	1	3
9. Denmark	0	0	0	1	2	1	4

772

Nationality	UG	G	DP	ALIN	CASA	ND	TOTAL
10. Egypt	2	1	7	965	123	4436	5534
11. Eritria	0	0	1	1	0	0	2
12. Ethiopia	0	0	0	3	0	0	3
13. Finland	0	0	0	0	0	1	1
14. France	0	0	0	0	1	7	8
15. Germany	1	0	0	5	7	8	21
16. Ghana	0	0	0	2	0	0	2
17. Greece	0	0	0	1	0	1	2
18. Guatemala	0	0	0	0	1	0	1
19. Guinea	0	0	0	2	0	0	2
20. India	9	0	0	0	1	3	13
21. Indonesia	0	0	0	0	0	1	1
22. Iraq	0	0	0	3	0	2	5
23. Ireland	0	0	0	0	0	1	1
24. Italy	0	0	0	3	2	3	8
25. Ivory cost	0	0	0	0	0	1	1
26. Japan	11	0	0	2	4	1	18
27. Jordan	0	0	0	6	0	41	47
28. Kazakistan	0	0	0	0	0	1	1
29. Kenya	0	0	0	2	0	1	3
30. Korea	2	0	0	1	1	0	4
31. Kuwait	0	0	0	2	0	2	4
32. Lebanon	0	0	0	1	0	11	12
33. Libya	0	0	0	0	0	7	7
34. Mauritius	0	0	0	0	0	1	1
35. Mongolia	0	0	0	0	0	1	1
36. Morocco	0	0	0	1	0	3	4
37. Mozambique	0	0	0	1	0	0	1
38. Muscat and Oman	0	0	0	0	0	2	2
39. Netherlands	0	0	0	2	0	0	2
40. Nigeria	0	0	0	2	0	7	9
41. Norway	2	0	0	2	13	3	20
42. Pakistan	0	0	0	0	1	3	4
43. Palestine	0	0	0	3	0	38	41
44. Peo Rep of China	0	0	0	1	0	2	3
45. Peru	0	0	0	0	0	1	1
46. Philippines	0	0	0	0	1	0	1
47. Poland	0	0	0	0	0	1	1
48. Qatar	0	0	0	1	0	1	2
49. Russia	0	0	0	2	2	0	4
50. Saudi Arabia	0	0	0	7	0	37	44
51. Sierra Leone	0	0	0	1	0	0	1
52. Singapore	0	0	0	2	0	1	3
53. Sirilanks	0	0	0	0	0	2	2
54. Somalia	0	0	0	3	0	1	4
55. South Africa	0	0	0	0	1	1	2

Personnel & Enrollment 773

Nationality		UG	G	DP	ALIN	CASA	ND	TOTAL
56.	South Korea	0	0	0	4	0	0	4
57.	Spain	0	0	0	1	1	2	4
58.	Sudan	0	0	0	4	1	6	11
59.	Sweden	1	0	0	1	0	0	2
60.	Switzerland	1	0	0	0	0	1	2
61.	Syria	0	0	0	2	0	9	11
62.	Taiwan	0	0	0	2	0	0	2
63.	Tanzania	0	0	0	0	0	1	1
64.	Thailand	1	0	0	1	0	5	7
65.	Trinidad & Tobago	1	0	0	0	0	0	1
66.	Tunisia	0	0	0	2	0	0	2
67.	Turkey	0	0	0	1	1	1	3
68.	Uganda	0	0	0	1	0	0	1
69.	United Arab Emirates	0	0	0	0	0	4	4
70.	United Kingdom	1	0	1	3	0	5	10
71.	USA	65	22	6	165	262	71	591
72.	Yemen	0	0	0	2	0	5	7
73.	Zambia	0	0	0	0	0	1	1
Total		98	23	15	1224	433	4760	6553

Program of Study	PREP ENG	FR	SO	JR	SR	SPSTAT	G	TOTAL
Accounting	0	11	38	43	35	0	0	127
Actuarial Science	0	8	17	11	15	0	0	51
Arabic Language Institute	0	0	0	0	0	98	0	98
Architectural Eng.	0	35	61	55	59	0	0	210
Anthropology	0	5	4	0	2	0	0	11
Applied Psychosocial Intervention for Forced Migrants	0	0	0	0	0	5	0	5
Arabic Studies	0	1	0	1	0	0	53	55
Arab and Islamic Civilisation	0	0	2	0	0	0	0	2
Art	0	3	7	14	19	0	0	43
AVIA	0	0	0	0	0	23	0	23
Biology	0	32	18	13	7	0	0	70
Business Administration	0	10	92	126	143	0	0	371
Biotechnology	0	0	0	0	0	0	58	58
Chemistry	0	6	7	7	4	0	18	42

Personnel & Enrollment 775

Program of Study	PREP ENG	FR	SO	JR	SR	SPSTAT	G	TOTAL
Master of Public Policy and Admin.	0	0	0	0	0	0	101	101
Master of Public Policy	0	0	0	0	0	0	1	1
Mechanical Engineering	0	71	81	65	119	0	31	367
Middle East Studies Migration and Refugee Studies	0	2	1	5	3	0	55	66
Modern History	0	0	0	1	1	0	0	2
Nanotechnology	0	0	0	0	0	0	9	9
Non-Degree	0	0	0	0	0	433	0	433
Petroleum and Energy Engineering	0	40	54	34	21	0	0	149
Ph.D. in Applied Sciences	0	0	0	0	0	0	8	8
Ph.D. in Engineering	0	0	0	0	0	0	6	6
Philosophy	0	1	8	5	2	0	0	16
Physics	0	6	8	10	10	0	12	46
Political Science	0	78	95	74	52	0	84	383
Product Development and Syst. Management	0	0	0	0	0	0	7	7
Psychology	0	12	20	25	19	0	0	76
Sociology	0	5	4	7	0	0	0	16
Sociology - Anthropology	0	0	0	0	0	0	27	27
Teaching Arabic as a Foreign Lang.	0	0	0	0	0	0	42	42
Teaching English as a Foreign Lang.	0	0	0	0	0	0	41	41
Theater	0	4	4	9	4	0	0	21
Television and Digital Journalism	0	0	0	0	0	0	18	18
Undecided	63	1080	302	10	1	0	0	1456
TOTAL	66	1645	1181	914	954	569	1224	6553

Graduates

The American University in Cairo awarded 860 bachelor's degrees and 294 master's degrees in the academic year 2009-2010. Of the 860 undergraduate degrees, 130 were awarded with honors, 101 with high honors, and 88 with highest honors.





Index

INDEX

A

absence (attendance), 68
 planned educational leave 71, 409

academic
 English, 680
 integrity, 73
 load, 65, 407
 organization, 35
 preparation, 51
 probation, 70, 409
 regulations, 60, 406
 requirements, 60, 404
 support services, 41

accounting,
 courses, 104, 536
 major, 104
 minor, 106

accreditation, 21
 program, 21

actuarial science, 275

administration,
 academic, 731
 business, 259, 531
 public policy, 596

admissions,
 auditors, 57, 403
 decision, 52
 graduates, 397
 non-degree, 401
 policy, 50
 preparation, 51
 procedure, 50
 readmission, 56
 transfer, 54
 transfer credit award, 54
 transfer credit after matriculation, 56
 undergraduates, 50

adviser, 404

African
 fellowships, 414

American
 courses, 110
 studies (minor), 109
 students (assistance), 81, 424

studies and research center, 695

anthropology
 courses, 113, 626
 graduate, 625
 major, 111

applied
 probability & statistics (mathematics
 minor), 280
 sciences (PhD), 642

Arab & Islamic Civilization, 120, 430
 Courses, 125, 418

Arabic language,
 institute, 660
 intensive programs, 665
 placement examination, 57
 study abroad center (CASA), 676

Arabic literature minor, 123

Arabic studies
 graduate, 430
 major, 120

archaeological chemistry (minor), 154

architectural
 courses, 186
 design (minor), 185
 engineering (BS), 182

art, 134
 courses, 135
 graphic arts and design (minor), 137
 communication and media (BA), 247
 major, 134
 traditional Egyptian (minor), 138

attendance, 68

auditing, 57, 403

awards, 33, 78, 80, 424

B

Biotechnology (graduate), 435
 courses, 436

biology, 144
 courses, 146
 major, 144
 minor, 145

business administration
 graduate, 531
 in management of information and
 communication technology
 (major), 262

- major, 265
- minor, 262
- C**
- calendar, 12
- campus, 23
- career advising and placement services (CAPS), 45
- centers
 - American studies & research, 695
 - Arabic study abroad (CASA), 676
 - citadel capital financial services, 721
 - desert development, 691
 - goldman sachs women's entrepreneurship & leadership, 722
 - journalism training and research (Adham center), 725
 - learning & teaching, 42
 - management, 704
 - philanthropy and civic engagement, 697
 - science & technology research, 698
 - social research, 696
 - writing, 43
- change of courses, 63, 406
- change of major, 65
- change of status, 57
- chemistry
 - courses 154, 440
 - graduate, 439
 - major, 152
 - minor, 153
- class standing, 64
- classical & medieval Islamic history (minor), 124
- clubs, 83
- communication
 - and media arts (major), 247
 - integrated marketing (major), 248
- community
 - psychology (graduate), 587
 - development and organizing, 163
- comparative
 - courses, 229, 507
 - education, 505
 - literary studies (graduate), 489
 - literature (English), 227, 488
 - law (graduate), 520
 - religion (courses), 245
 - religion (minor), 238
- comprehensive examination, 405
- computer
 - courses, 171, 447
 - science, 164, 444
 - engineering, 168
- computing, 446
- conduct (student), 86
- construction engineering
 - courses, 191
 - graduate, 450
 - major, 178
- Coptic studies (minor), 209
- Coptology (graduate), 467
- core curriculum, 89
 - courses (SEMR), 99
- counseling
 - family (graduate), 590
 - psychology (graduate), 588
 - student, 86
- course
 - changes, 63, 406
 - credit hours, 64, 407
 - prefix, 102, 428
 - repetition, 69, 409
- credits
 - transfer of, 54, 401
- D**
- deferred payment, 76
- desert development center (DDC), 691
- development
 - studies (minor), 198, 457
 - practice (BSc/ CENG-MPA), 600
- diplomas
 - community psychology, 587
 - comparative literary studies, 489
 - computer science, 445
 - economics in international development, 460
 - European studies, 497
 - forced migration & refugee studies, 561
 - gender & women's studies in the Middle East & North Africa, 501
 - International and Comparative Law, 520

- International Human Rights Law, 522
 - Middle East studies, 556
 - physics, 574
 - political science, 582
 - psychosocial intervention
 - for forced migrants & refugees, 562
 - public policy, 608
 - public administration, 607
 - T AFL, 632
 - TEFL, 637
 - dismissal, 71, 409
 - double majors, 62
 - doctorate degrees, 642
 - dual
 - degree program, (BSc./CENG-MPA), 600
 - graduate degrees, 408
- E**
- economics
 - courses, 202, 463
 - in International development (graduate), 460
 - graduate, 458
 - major, 200
 - Egyptology,
 - courses, 209, 470
 - egyptology & coptology (graduate), 467
 - major, 207
 - minor, 208
 - electronics
 - (minor), 214
 - engineering (graduate), 476
 - engineering (major), 215
 - engineering with concentration in
 - management of technology (graduate), 479
 - engineering
 - architectural, 182
 - computer, 165
 - construction, 178, 450
 - courses, 224, 486
 - doctorate degree, 648
 - electronics, 215, 476
 - environmental, 492
 - mechanical, 288, 547
 - petroleum & energy, 319
 - science services, 723
 - English language
 - institute, 680
 - proficiency, 51
 - English and comparative literature
 - courses, 229, 490
 - graduate, 488
 - major, 227
 - environmental
 - engineering (courses), 495
 - engineering (graduate), 492
 - science (minor), 233
 - systems design (graduate), 493
 - equal opportunity & affirmative
 - action office, 47
 - European studies (graduate), 447
 - examinations
 - Arabic placement, 57
 - English language proficiency, 51, 399
 - entrance, 400
 - medical, 400
 - exchange programs, 684
 - executive education, 702
- F**
- faculty, 22, 636
 - family
 - family counseling (graduate), 590
 - fellowships (graduate)
 - African, 414
 - Al Alfi Foundation Biotechnology, 415
 - Al Alfi Foundation MBA, 415
 - Arab Women Professionals, 415
 - Ahmed and Ann M.El Mokadem, 416
 - Arabic language, 417
 - Dr. Nabil Elaraby, 417
 - graduate merit, 417
 - international in Arabic studies
 - Middle East studies & sociology-anthropology, 418
 - Jameel MBA program, 418
 - King Abdullah University of Science and Technology, 419
 - laboratory instruction, 419
 - Mo Ibrahim, 420
 - model Arab league
 - & model united nations, 420
 - Nadia Niazi, 421
 - SYLFF, 421

Tarek Juffali in counseling
 Psychology and in community
 psychology, 422
 TAFL, 422
 TEFL, 422
 university, 423
 without stipend, 424
 writing Center, 423
 Yousef Jameel Ph.D., 419

fields of study, 102, 428

film
 courses, 234
 minor, 234

finance courses, 266, 536

finances (student), 76, 412

financial aid, 80, 413

financial support, 25

first-year experience
 program (FYE), 59

food services, 86

forced migration &
 refugee studies (graduate), 561

foreign language teaching
 Arabic, 630
 English, 637

G

gender & women's studies
 courses, 502
 graduate, 499

global affairs, 605

governance, 21

grades, 66, 407

graduate(s)
 academic load, 407
 academic regulations, 406
 academic requirements, 404
 admission, 398
 admission provisional, 400
 adviser, 404
 course retake, 409
 degree programs, 17
 diploma programs, 17
 dual degrees, 408
 studies (Dean's office), 689
 thesis, 405

graphic arts and design (minor), 137

H

history, 237
 courses, 238, 504
 Middle Eastern, 431

honors, 70

honors program in political science (major), 350

housing, 87

I

Incoming student abroad, 684

incomplete work, 68, 408

information systems
 minor, 265
 technology (office), 43

institutes
 Arabic language, 660
 banking & finance, 713
 English language, 680
 international executive education, 703
 gender & women's studies, 697
 quality management, 718
 management development, 704
 integrated marketing communication
 (major), 248

integrity policy
 (academic), 73

intensive
 Arabic, 637
 English, 682
 Summer, 685

interdisciplinary programs
 American studies, 110
 development studies, 198
 environmental engineering, 492
 European studies, 497
 forced migration & refugee studies, 561
 gender and women's studies, 499
 Middle East studies, 301, 556

international
 & comparative education (graduate), 505
 & comparative law (graduate), 519
 business (courses), 267
 development (economics), 460
 human rights law (graduate), 521
 programs (office), 48
 relations (minor), 351

student affairs, 86

Islamic

- art and architecture (minor), 124
- studies (minor), 124

J

journalism and mass communication

- courses, 251, 516
- graduate, 512
- major, 247

L

language teaching (foreign)

- Arabic, 660
- English, 680

Law

- courses, 523
- graduate, 519

learning

- technologies (office), 41
- & teaching center (office), 42

library, 41

linguistics (minor), 256

M

majors, 62

- change of, 65
- declaration of, 64
- double, 62

management, 258, 530

- courses, 259, 538
- of information systems (courses), 541
- of information technology (courses), 269, 541
- of information and communication technology (major), 262

marketing courses, 272, 543

mathematics, 275

- courses, 281

mechanical engineering

- courses, 293, 550
- graduate, 547, 549
- major, 288

mechatronics (minor), 292

medical

insurance, 400

services, 86

Middle East

- politics (minor), 352
- Studies, 301, 556

minors, 63

music

- courses, 304
- major, 305
- minor, 308

N

nanotechnology (graduate), 567

- courses, 569

non-degree to degree

- change of status, 56

non-degree students,

- academic regulations, 73, 411
- admissions, 56, 401

O

office of

- associate provost for research administration, 688
- dean of graduate studies, 689
- equal opportunity & affirmative action, 46
- international programs, 48
- sponsored programs, 689
- operations management (courses), 544

P

petroleum & energy engineering (major), 319

- courses, 321

philosophy, 328

political

- economy (minor), 349
- honors program (major), 350
- science, 345, 578

Physics

- courses, 338, 575
- graduate, 573
- major, 335

prefix (courses), 102, 428

premedical track, 361

presidents of AUC, 22

press, 44
 probation, 70, 409
 proficiency test, 51, 399
 profile of AUC, 24
 programs,
 art, 134
 first-year experience (FYE), 59
 honors (program) in political science, 350
 intensive Arabic, 666
 intensive English, 680
 intensive summer, 673
 music, 305
 student work, 81
 TAFL, 630
 TEFL, 636
 theatre, 389
 work study, 413
 Jameel MBA fellows, 418
 psychology
 courses, 365, 592
 community, 587
 graduate, 587
 major, 362
 psychosocial intervention
 for forced migrants and refugees
 (graduate), 562
 public
 administration (graduate), 596
 policy, 601
 policy & administration (courses), 370, 608
 publications
 AUC Press, 44
 student, 85

R

rare books &
 special collection library, 42
 readmission, 56, 402
 refund policy, 77, 412
 registration, 63, 406
 regulations (academic), 63, 406
 requirements
 academic, 61, 404
 research, 688
 centers, 690
 support offices, 688
 residence requirements, 61, 404

rhetoric & composition, 371
 robotics, control and smart systems, 616

S

schedules (course), 103, 429
 scholarships, 27, 78
 schools, 35
 school of continuing education, 700
 science
 (SCI courses), 160
 & technology center, 698
 social research center, 696
 sociology
 courses, 380, 626
 graduate, 625
 major, 380
 sociology/anthropology, 625
 special collection
 (rare books library), 42
 sponsored programs (office), 689
 status
 change of, 57
 student
 activities, 83
 associations and clubs, 83
 conduct, 86
 enrollment statistics, 771
 finances, 76, 402
 housing, 87
 life, 83
 nationalities, 771
 non-degree, 57, 73, 401, 411
 publications, 85
 transfer, 54, 401
 study abroad, 48, 684
 admission, 56
 financial assistance, 81, 424
 summer
 intensive Arabic program, 673
 session, 685

T

teaching
 Arabic as a foreign language, 530
 English as a foreign language, 636
 Telecommunication (office), 44

784

television and digital journalism (grad.), 514

theatre

 courses, 389

 major, 389

 minor, 391

thesis, 405

traditional Egyptian arts (minor), 138

training programs, 700

transcripts, 73, 411

transfer,

 admission, 54

 of credit award, 54

 of credits, 401

 of credits after matriculation, 56

trustees, 21, 728

tuition and fees, 76, 412

U

undergraduate

 academic regulations, 63

 academic requirements, 61

 admissions, 50

 degree programs, 16

 registration, 63

 scholarships, 26, 78

university, 19

 archives, 41

cabinet, 731

 network services, 44

 press, 44

W

warning, 70

winter session, 685

withdrawal, 72, 410

writing center, 43

Y

year-abroad students, 684

 admission, 56