American University of Sharjah
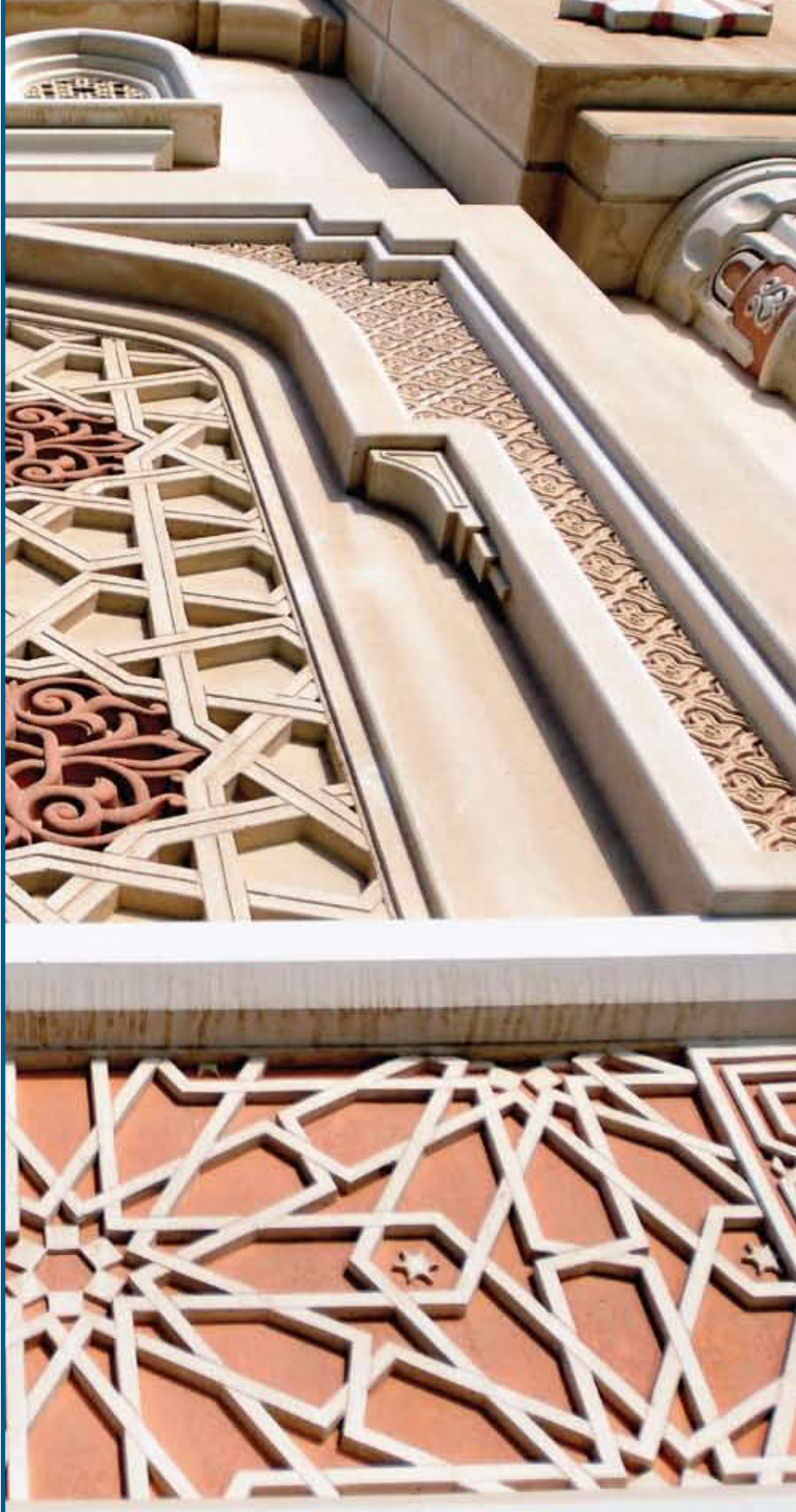
1997

UNDERGRADUATE

Catalog

2009–2010

American
University
of Sharjah

1997

UNDERGRADUATE

Catalog

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His Highness Sheikh Dr. Sultan Bin Mohammad Al Qassimi

Supreme Council Member, Ruler of Sharjah
Founder and President of American University of Sharjah

Chancellor's Message

I am delighted to welcome students, faculty members and staff to AUS for the academic year 2009–2010. Through the enthusiasm, energy and hard work of many past and current students, faculty members, staff and alumni, AUS has in a very short time gained a position of widely recognized academic prominence in the United Arab Emirates and beyond. As chancellor, I am gratified by our university's fine academic reputation. I also feel a tremendous optimism about our future. As much as we have already achieved, AUS's best years still lie ahead.

All involved with AUS have found it to be a remarkable place. With its high-quality and internationally accredited academic programs; its unique blend of local, regional and international cultures; and its diverse mix of students, faculty members and staff the university's campus provides an extraordinary intellectual and social environment. We at AUS pride ourselves on the high-quality education that our students receive. Our graduates are known for their excellent professional competencies, their energy and dynamism, and for the impressive analytical and communication skills that they display as they establish their careers here in the UAE or elsewhere in the world. Our alumni are still young, but already many have achieved admirable levels of personal success.

When he founded AUS in 1997, His Highness Sheikh Dr. Sultan Bin Mohammad Al Qassimi, Member of the Supreme Council, Ruler of Sharjah and President of American University of Sharjah, delineated its core values as follows:

1. Science and education must regain their rightful place in the advancement of our society and in shaping the lives of our children.
2. The purpose of higher education is to reshape the minds of our youth in order for them to address personal and social challenges using the scientific method.
3. AUS must be a center of research for solving the problems faced by society.
4. AUS will have the autonomy and freedom needed to flourish as an independent university.
5. AUS must be organically linked with the economic, cultural and industrial sectors of society in productive cooperation.

These values emphasize the important role that science and education must play in developing the future of the UAE. They stress that research should focus on overcoming the immediate challenges that society faces, and they charge the university with assuming its rightful responsibility of interacting fruitfully with external economic, cultural and industrial partners to increase society's productivity. These directives represent touchstones on which AUS must rely to guide its future progress.

This catalog contains all of the information that students will need to chart their academic careers at AUS. It lists available courses, outlines important regulations, and describes the academic and co-curricular services that the university offers. This same information is available on the university's website, www.aus.edu. This website should be considered the official source of such information, since it is updated more frequently than this catalog. I urge students and their parents to become familiar with the rules and regulations this catalog contains. Faculty members should also consult it to remain familiar with the information it provides.

AUS will continue to build on past achievements. It will continuously strive to enhance the quality of the education that it offers, increase the range of the services that it offers, and work to establish productive strategic partnerships both here and abroad.

Peter Heath

Board of Trustees

Emeriti

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Ms. Kathlin Ray, University Librarian

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Mr. Scott Element, Director, Financial Systems
Ms. Paula Doyle, Director, Human Resources
Mr. Ashutosh Sheth, Director, Information Technology
Mr. Richard Mundy, Director, Operations
Dr. Lubna Yousif, MD, Director, University Health Center
Mr. Lee Mitchell, Director, Wellness

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Mr. Salem Al Qaseer, Vice Chancellor for Public Affairs
Mr. Nazzal Nazzal, Director, Media and Printing
Mr. Saeed Al-Shamsi, Director, Public Relations

Student Affairs

Dr. Moza Al Shehhi, Vice Chancellor for Student Affairs
Mr. Munketh Taha, Director, Student Activities

The academic requirements of American University of Sharjah are under continual examination and revision for improvement. This catalog is not a contract. The student assumes full responsibility for compliance with the most up-to-date academic requirements.

Undergraduate Academic Calendar 2009–2010

Fall Semester			2009
July	1	Wednesday	Regular admission applications deadline for Fall Semester 2009 (applicants from outside UAE)
	15	Wednesday	Regular admission applications deadline for Fall Semester 2009 (applicants from inside UAE)
August	13	Thursday	Residential halls open
	13	Thursday	TOEFL test
	14	Friday	Welcome session for new students and parents
	16	Sunday	New students' academic and school orientation
	17	Monday	Registration for all returning students ends 3 p.m.
	17–18	Monday–Tuesday	Placement tests (new students)
	19–20	Wednesday–Thursday	Registration for new students
	23	Sunday	First day of classes/Late registration and add and drop period begin
	25	Tuesday	Late registration and add and drop period end 5 p.m.
September	1	Tuesday	Graduation applications for Fall Semester 2009 due
	17	Thursday	Classes end for Eid Al Fitr holiday 10 p.m.*
	27	Sunday	Classes resume at 8 a.m.
October	28	Wednesday	Honors Convocation
November	5	Thursday	Deadline to withdraw from a course without academic penalty 5 p.m.
	15–25	Sunday–Wednesday	Advising and early registration for Spring Semester 2010
	15	Sunday	Financial grant application/renewal deadline for Spring Semester 2010 (enrolled students)
	25	Wednesday	Classes end at 10 p.m. for Eid Al Adha and National Day holidays
December	1	Tuesday	Regular admission applications deadline for Spring Semester 2010 (applicants from outside UAE)
	6	Sunday	Classes resume at 8 a.m.
	6	Sunday	Transfer students' admission applications deadline for Spring Semester 2010
	13	Sunday	Financial grant applications deadline for Spring Semester 2010 (new students)
	17	Thursday	Regular admission applications deadline for Spring Semester 2010 (applicants from inside UAE)
	20	Sunday	Fall Semester 2009 classes end 10 p.m.
	21	Monday	Fall Semester 2009 study and examination period begins
	27	Sunday	Fall Semester 2009 final examinations end 10 p.m.
	28	Monday	Fall Semester 2009 make-up examination day
	30	Wednesday	Fall Semester 2009 Commencement

Spring Semester			2010
January	7	Thursday	Residential halls open
	7	Thursday	TOEFL test
	8	Friday	Welcome session for new students and parents
	10	Sunday	New students' academic and school orientation
	11	Monday	Registration for all returning students ends 5 p.m.
	11–12	Monday–Tuesday	Placement tests (new students)
	13–14	Wednesday–Thursday	Registration for new students
	17	Sunday	First day of classes/Late registration and add and drop period begin
	19	Tuesday	Late registration and add and drop period end 5 p.m.
	28	Thursday	Graduation applications for Spring Semester 2010 due
March	18	Thursday	Classes end for Spring Break 10 p.m.
	28	Sunday	Classes resume 8 a.m.
April	1	Thursday	Deadline to withdraw from a course without academic penalty 5 p.m.
	15	Thursday	Early admission applications deadline for Fall Semester 2010
	25–May 6	Sunday–Thursday	Advising and early registration for Summer Term 2010 and Fall Semester 2010
	29	Thursday	Graduation applications for Summer Term 2010
May	2	Sunday	Financial grant application/renewal deadline for Fall Semester 2010 (enrolled students)
	6	Thursday	Spring Semester 2010 classes end 10 p.m.
	8	Saturday	Spring Semester 2010 study and examination period begins
	13	Thursday	Spring Semester 2010 study and examination period ends 10:00 p.m.
	15	Saturday	Spring Semester 2010 make-up examination day
	27	Thursday	Spring Semester 2010 Commencement

Summer Term			2010
May	30–31	Sunday–Monday	Registration for Summer Term 2010
June	1	Tuesday	Summer 2010 term classes begin 8 a.m/Late registration and add and drop period begin
	3	Thursday	Late registration and add and drop period end 5 p.m.
	28	Monday	Deadline to withdraw from a course without academic penalty 5 p.m.
July	12	Monday	Summer Term 2010 classes end 10 p.m.
	13–14	Tuesday–Wednesday	Summer Term 2010 examination period
	15	Thursday	Summer Term 2010 make-up examination day
	21	Wednesday	Financial grant applications deadline for Fall Semester 2010 (new students)

* Islamic holidays are determined after sighting the moon. Thus, actual dates may not coincide with the dates in this calendar. In the event of loss of teaching days due to unscheduled closings, the semester(s) may be extended.

University Terminology

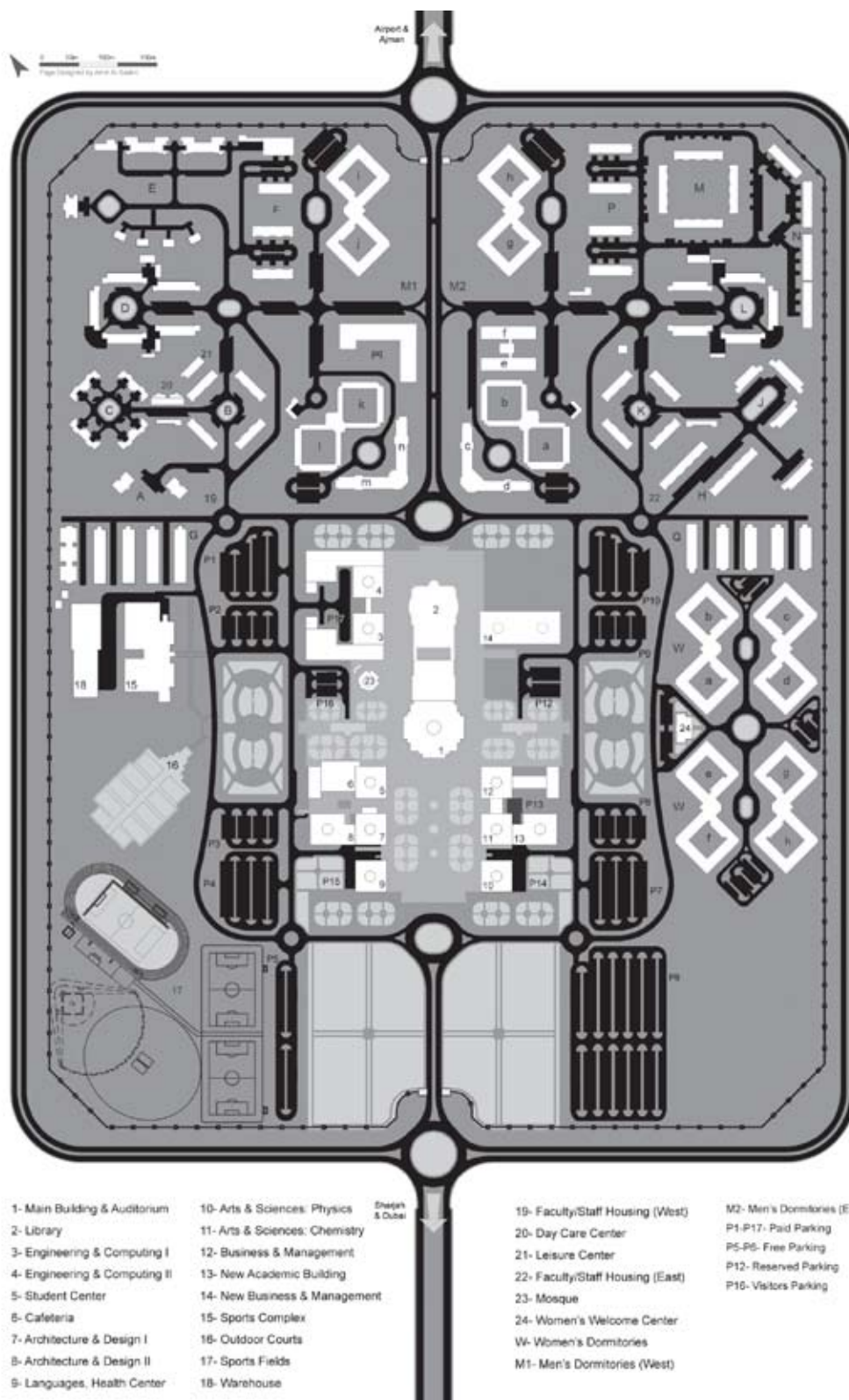|	
Academic Standing	Determined by regulations governing good standing, probation and dismissal
Academic Year	The period of time beginning with the first day of class of a fall semester up to, but exclusive of, the first day of class of the fall semester of the following year
Add and Drop	A period of time at the beginning of each semester/term when students can adjust schedules by dropping or adding courses or changing sections of a course
Admission	Formal acceptance as a student
Advisor	Faculty member/administrator assigned to counsel students on academic matters. The student is called the advisor's "advisee."
Alumni	Those who have graduated from American University of Sharjah
Audit, Course	Permission to attend and participate in a course without benefit of a grade or credit
Audit, Degree	Methodical examination and reviewing of students' compliance with their degree requirements
Bachelor's Degree	A four-year minimum undergraduate degree
Calendar, Academic	Annual listing of all official dates and deadlines for the academic year
Catalog Year	A student's catalog year denotes which specific set of graduation requirements will apply to that student. Unless altered, a student's catalog year is the year when the student was admitted to study at AUS.
Class Standing	The class ranking determined by the number of credits an undergraduate student has earned. For example, 0-14 is Freshman I, 15-29 is Freshman II, 30-44 is Sophomore I, etc.
Common Examinations	Examinations for courses with multiple sections scheduled at a common time at the request of the college/school. Courses with more than three sections and at least two instructors are eligible to be considered for a common examination time slot.
Concentration	Subspecialization within a major that allows a student to focus on a particular aspect of the major field of study
Corequisite	A course required to be taken simultaneously with another course
Course	A unit of study that may utilize lecture, discussion, laboratory, recitation, seminar, workshop, studio, independent study, internship or other similar teaching formats to facilitate learning for a student
Course Load	Total credits for which a student is registered in a given semester or term
Credit	The equivalent of a one-hour lecture, two to three hours of laboratory, or three hours of recitation work per week for one regular semester
Curriculum	A structured set of learning objectives built in a specified set of courses
Department	An academic unit of a college or school
Directed Study	An investigation under faculty supervision beyond what is offered in existing courses
Dismissal	The involuntary separation of a student from the university for unacceptable conduct or unsatisfactory academic achievement. A student is academically dismissed when he/she fails to achieve academic good standing in three consecutive semesters.
Educational Records	Records directly related to the education of a student and maintained by the Office of the Registrar
Elective Course	A course selected at a student's discretion with the approval of the advisor
Extracurricular	Enrichment and leadership development activities that are part of student life but are not part of the academic program, such as student activities, athletics and music
Fee	Charges for services; does not include course tuition
Full-Time Student	An undergraduate student who is registered for 12 or more credit hours in a given semester
General Education Requirements	Requirements common to all undergraduate students designed to provide both breadth and specialization in their academic degree programs
Good Standing, Academic	The academic standing of an undergraduate student who has achieved a cumulative GPA of 2.00 or higher
GPA	Grade point average of the grades of AUS courses
Grade Points	Numerical value associated with each grade
ID Card	University student identification card providing and controlling access to university facilities and services

Independent Course	A course listed in the catalog but offered in an independent study format
Independent Study	Independent course (IC) or directed study (DS) beyond the courses offered in a specific semester conducted by a student under the supervision of a designated faculty member
Major	A student's main field of study
Matriculation	Enrollment as a degree-seeking student
Minor	A secondary field of study requiring at least 18 credit hours
Non-degree Student	Designation used for students who are enrolled in courses but are not pursuing a degree program
Petition	A written request seeking a waiver of or an exception to a university regulation, policy or deadline
Placement Test	A proficiency examination given to determine a student's ability in a subject where competence is an important consideration. Placement test scores determine whether the corresponding preparatory course will be waived.
Preparatory Courses	Undergraduate courses designated as 00X. Students may be waived out of these courses by placement tests. Preparatory courses do not count in the credits earned toward a degree, but they do count in the grade point average.
Prerequisite	A course required to be completed before a certain course may be taken
Prerequisite/Concurrent	A course that must be completed either along with or before enrolling in a certain course
Probation	A warning status resulting from the student's unsatisfactory conduct
Probation, Academic	Status of any undergraduate student who has less than a 2.00 cumulative GPA
Readmission	The act of admitting a student back to the university through the Office of Enrollment Management/ Undergraduate Admissions after an interruption of studies for more than one semester. Academically dismissed students are not eligible for readmission.
Registration	The process of enrolling in classes
Regular Student	A degree-seeking student
Reinstatement	The exceptional act of allowing an academically dismissed student to resume studies following dismissal. Academically dismissed students who have been away longer than one semester may not apply for reinstatement.
Required Courses	Courses other than free electives prescribed by the college/school necessary for the completion of a particular degree program
Residence	A student's tenure within the university inclusive of all interruptions of study
Schedule, Class	A list of courses offered during a semester that specifies the days, hours, locations of classes and the names of the instructors
Schedule, Student	A listing of the courses a student is taking in a given semester that specifies the days, hours, locations of classes and the names of the instructors
Semester	Either of the two 15-week periods of instruction followed by an examination period into which the academic year is divided
Study Abroad Student	An AUS student who is taking courses at another university during a regular semester or a non-AUS student who is taking courses at AUS in the context of a semester exchange program between AUS and the student's university
Term	A period of instruction and exams that is shorter than a semester
Transcript	A student's historical academic record
Transfer Credit	Credit from course work completed at another institution that is accepted at AUS and which may or may not be applicable toward a specific AUS degree
Transfer Student	A student admitted to AUS after having met the AUS transfer student admission requirements. Credits completed at the student's previous university may or may not transfer to AUS.
Transient Student	A student who has completed an undergraduate or graduate degree at AUS or elsewhere and who has registered at AUS for some additional courses
Tuition	The fees charged for courses each semester or term
Undergraduate	A student who is working toward completion of a bachelor's degree
Visiting Student	A student of another accredited institution who receives permission to register (for up to two semesters) to earn credit to transfer back to his or her home institution
Withdrawal	The act of officially leaving the university for reasons other than graduation. Students may withdraw from individual courses without withdrawing from the university.

Directory

UAE Code 971, Sharjah Code 6   www.aus.edu

Department	Telephone	Fax	E-mail
Academic Achievement Center	515 2096	515 2150	aac@aus.edu
Academic Affairs/VCAA	515 2020	515 2150	vcaa@aus.edu
Admissions	515 1000	515 1020	admission@aus.edu
Architecture and Design	515 2825	515 2800	docad@aus.edu
Arts and Sciences	515 2412	558 5067	deanofcas@aus.edu
Business and Management	515 2310	558 5065	deanofsbm@aus.edu
Chancellor	515 2205	558 5858	chancellors_office@aus.edu
Corporate Relations	515 2032	515 2065	dcr@aus.edu
Development and Alumni Affairs/VCFA	515 2547	515 2297	odaa@aus.edu
Engineering	515 2948	515 2979	dosoe@aus.edu
Finance	515 2185	515 2190	finance@aus.edu
Finance and Administration/VCFA	515 2192	515 2130	vcfa@aus.edu
General Information	558 5555	558 5858	info@aus.edu
Graduate and Undergraduate Programs	515 2281	515 2050	gup@aus.edu
Grants and Scholarships	515 2005/55/60/72	515 2040	scholarship@aus.edu
Health Center	515 2699	515 2690	clinic@aus.edu
Human Resources	515 2228	515 2280	hr@aus.edu
Information Technology	515 2119	515 2120	it@aus.edu
Intensive English Program	515 2654	515 2638	iep-office@aus.edu
Library	515 2252	558 5008	auslibrary@aus.edu
Operations	515 2299	558 5009	operations@aus.edu
Public Affairs/VCPA	515 2207	515 2200	public_affairs@aus.edu
Registrar	515 2031	515 2040	registration@aus.edu
Research	515 2353	515 2050	research@aus.edu
Student Residential Life	515 2244	515 2294	res-halls@aus.edu
Sponsorship Liaison	515 1016	515 1020	sponsors@aus.edu
Student Accounts	515 2233/82	515 2190	studentaccounts@aus.edu
Student Affairs/VCSA	515 2166	558 5024	studentaffairs@aus.edu
Student Learning and Counseling Services	515 2767	515 2711	lcs@aus.edu

Emergency Numbers			
Maintenance Emergency	515 2100		
Medical Hotline (24 hours)	050 635 7651		
Security	515 2222		

1- Main Building & Auditorium
2- Library
3- Engineering & Computing I
4- Engineering & Computing II
5- Student Center
6- Cafeteria
7- Architecture & Design I
8- Architecture & Design II
9- Languages, Health Center

10- Arts & Sciences: Physics
11- Arts & Sciences: Chemistry
12- Business & Management
13- New Academic Building
14- New Business & Management
15- Sports Complex
16- Outdoor Courts
17- Sports Fields
18- Warehouse

19- Faculty/Staff Housing (West)
20- Day Care Center
21- Leisure Center
22- Faculty/Staff Housing (East)
23- Mosque
24- Women's Welcome Center
W- Women's Dormitories
M1- Men's Dormitories (West)

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AUS

The University

Historical Preamble

American University of Sharjah (AUS) was founded in 1997 by His Highness Sheikh Dr. Sultan Bin Mohammad Al Qassimi, Member of the Supreme Council of the United Arab Emirates and Ruler of Sharjah. Sheikh Sultan articulated his vision of a distinctive institution against the backdrop of Islamic history and in the context of the aspirations and needs of contemporary society in the UAE and the Gulf region.

AUS was mandated to:

- reinforce the efforts of the leaders of the UAE "to ensure that science and education regain their rightful place in the building and advancement of our society and shaping the lives of our children"

- join other institutions of higher education in seeking "to reshape fundamentally the minds of our youth to enable them to address the challenges of life using the scientific method"

- become a "center of research for educational development and the solution of social problems"

- become "organically linked" to the economic, cultural, scientific and industrial sectors of society in "productive cooperation"

- exercise the "independence and objectivity in teaching and research" necessary for the achievement of these goals

Mission Statement

The mission of American University of Sharjah (AUS) is to achieve and maintain preeminence as a coeducational institution based upon American models and grounded in the history and culture of the Arab Gulf region.

AUS is a not-for-profit university that:

- admits students on the basis of their academic qualifications regardless of race, color, gender, religion, disabilities, age or national origin

- employs faculty and offers academic programs that are equivalent to those at leading institutions of higher education in the United States

- integrates liberal studies, professional education, and co-curricular and extracurricular learning experiences to provide its graduates both breadth and depth of knowledge

- values strong relationships with its alumni, the public, the media and appropriate governmental entities

- encourages and supports research and scholarship by its faculty and students and serves as a resource for the community

- provides students with a rich and varied campus life that fosters personal growth, maturity and a sense of social responsibility

- operates effectively and efficiently, develops and uses its fiscal and human resources wisely, and encourages wide participation in its governance

Overview

American University of Sharjah is an independent, not-for-profit, coeducational institution. Although consciously based upon American institutions of higher education, AUS is expected also to be thoroughly grounded in Arab culture and to be part of a larger process of the revitalization of intellectual life in the Middle East.

American University of Sharjah has succeeded in building a multicultural education environment that brings together people from diverse nations and backgrounds. AUS strives to instill in its students the importance of appreciating and understanding diversity, global issues and their own roles in society.

AUS is emerging as a leading comprehensive coeducational university in the Gulf, serving students from the Gulf region and around the world. AUS students are introduced to a culture of high aspiration and achievement to aid them in leading productive and meaningful lives. AUS is also dedicated to the preservation of the physical environment, free from pollution and neglect. This sense of environmental responsibility is passed on to AUS graduates in order to create ecologically aware citizens.

In keeping with its mission, AUS offers students an education that will enable them to comprehend the dynamism and complexity of contemporary global processes. Through the integration of liberal studies and professional education, students are given both breadth of knowledge and specialization in their chosen fields. Education at AUS runs the gamut from art, poetry and religions from past civilizations to the latest skills and technologies of today's information age. These are all presented to students in order to produce future leaders with a firm understanding of how society has reached its present state.

The combination of traditional and innovative teaching methods provides an educational environment in which students can realize their individual potential and pursue their goals.

Through the College of Arts and Sciences, College of Engineering, School of Architecture and Design, and School of Business and Management, the university offers 26 majors and 42 minors at the undergraduate level, and 13 master's degrees.

While Arabic is the official language of the United Arab Emirates, the language of instruction at AUS is English. All classes and administrative functions are conducted in English.

Islam is the official religion of the state, and Arab Islamic culture predominates in the UAE. The nation is also distinguished by its tolerance toward its large expatriate communities, which comprise diverse nationalities, cultures and religious beliefs. Following in this spirit of understanding and acceptance of all peoples, AUS admits students solely on the basis of their academic qualifications regardless of race, color, gender, religion, disabilities, age or national origin. The university's mission is to create a multicultural, international academic community in order to prepare its students to become lifelong learners equipped to adapt to the needs of our changing world.

AUS was established as an "American" university not only in its formal academic and organizational characteristics but also in the recognition that the total culture and philosophy of the educational community is as significant as the formal program of studies. Students learn the lessons of the classroom and the lessons of life in a coeducational, multicultural and multinational environment. From its inception, AUS was envisioned as a place that would "feel" like an American campus.

Accreditation and Licensure

American University of Sharjah is accredited by the Commission on Higher Education of the Middle States Association of Colleges and Schools (3624 Market Street, Philadelphia, PA 19104 USA, 215 662 5606). AUS is also licensed by the UAE Ministry of Higher Education and Scientific Research, and all programs are recognized by the ministry and have been awarded either full or initial accreditation status. All bachelor's degree programs in the College of Engineering are accredited by the Engineering and Computing Accreditation commissions of ABET, Inc. (111 Market Place, Suite 1050, Baltimore, MD 21202 USA, 410 347 7700).

AUS

Campus Life

The Campus Complex

American University of Sharjah is situated in University City, which is located 16 kilometers (10 miles) from the center of Sharjah. The distinctive architecture of the domes and arches of the academic and administrative buildings is accentuated with graceful Arab motifs.

The center of the AUS campus comprises 11 academic buildings. The academic buildings house classrooms and lecture halls of various sizes; a state-of-the-art library; science, language, computer and engineering laboratories; workshops, digital studios and dark rooms; and offices for faculty, academic administrators and support staff.

The campus includes 12 student residential halls (eight for men and four for women) as well as a large Sports Complex and a Student Center. Approximately 40 percent of the student body lives in campus housing. Unlike most American universities, AUS requires faculty members and their families to live on campus. Thus, there is a large and continuous faculty presence at the heart of the campus, providing students with a learning and living environment that allows for on-going interaction with faculty members and their families.

The City of Sharjah

The location of the university enhances its mission. Sharjah is situated strategically between the Far East and the West, between Africa and Asia. Straddling the breadth of the UAE, the emirate of Sharjah has beautiful beaches on the shores of both the Arabian Gulf and the Gulf of Oman. Its landscape varies from level plains to rolling sand dunes and mountain ranges.

Today, as in ancient times, Sharjah is a global trade center. Modern Sharjah is a city of learning and the arts, as confirmed by its 1998 UNESCO designation as the Cultural Capital of the Arab World. This context facilitates the university's intention to be an academic center at the intersection of ancient cultural traditions and contemporary intellectual currents. The city of Sharjah boasts over 27 museums with splendid collections of artifacts and art objects as well as exhibits on science and natural history. These institutions are sites for field trips, research and possible internships. Sharjah hosts many cultural festivals, programs, educational conferences, fairs and economic expositions, including the annual book fair and the Sharjah International Biennial art exhibition. These resources permit AUS to broaden students' formal education in a way not possible elsewhere in the region.

Campus Services

Banking

Located on the ground floor of the Main Building, the Sharjah Islamic Bank offers banking services such as checking and saving accounts, ATM transactions and transfer of funds. ATMs are located at the bank, the Student Center and the Women's Welcome Center.

Bookstore

Located on the ground floor of the Library Building, the bookstore sells all required textbooks, other books, art supplies, stationery, notebooks and many items essential for students.

Campus Cash Program

Students can use their ID cards for purchases at various AUS outlets through the Campus Cash program at no additional charge. To participate, a student must deposit an initial sum with the university cashier, who will credit that amount to the student's Campus Cash account. The Campus Cash program is very secure, and students may check their balances online.

Students can use their ID cards at most AUS outlets. For program details, visit www.aus.edu/admin/operations/commercial/campuscash.php.

Copy Center

The AUS Copy Center is located on the ground floor of the Main Building. It serves faculty, staff and students by providing a variety of quality and reasonably priced document reproduction services. The center also offers professional binding, lamination, stapling and other related services.

Dining

A variety of international franchise restaurants, coffee shops and snack services are located in the Student Center and the Library Building. Most of these outlets offer campus delivery service.

Most residential halls are equipped with kitchenettes, which include refrigerators and hot plates, in addition to vending machines containing snacks and beverages.

Gifts and Memorabilia

Located on the ground floor of the Library Building adjacent to the bookstore, the AUS Gift Shop offers a variety of merchandise, memorabilia and gift items customized for AUS.

Government-Related Services/International Students Services

The Public Relations Department handles all official government documents and transactions for students, faculty and staff, including passport custody, medical test assistance, the processing of visas and residence permits, driving licenses, car registration, traffic violations and accidents. It also provides official letters that might be required by various government and/or private organizations.

For immigration issues, contact government_relations@aus.edu. For

international students issues, contact ois@aus.edu. For further information, visit www.aus.edu/publicaffairs/publicrelations/.

Hairdresser

A beauty salon is located in the Women's Welcome Center, and a barbershop is located in the Student Center.

ID Cards

Students must carry their IDs at all times and have them available upon request. ID cards must be validated by the Public Relations Department every semester (including summer term) to avoid charges. The Public Relations Department also issues AUS ID cards for faculty, staff and their dependents.

Laundry

Regular and dry-clean laundry services are available on the west and east sides of campus near the faculty housing.

Lost and Found

The lost and found is located at the Student Center reception desk. Items unclaimed after one semester will be given to charitable organizations, sold or destroyed.

Mail

AUS provides a full-service post office on the ground floor of the Main Building. Mail is distributed daily to all university offices by the University Post Office. It also maintains individual post office boxes for all resident students. All mail intended for university offices and for those residing on campus should be addressed to:

> American University of Sharjah
> P.O. Box 26666
> Sharjah, UAE

Mini-Mart

The Leopard Mini-Mart provides a large variety of grocery items, fresh fruits and vegetables, and other household items. One outlet is located in the Student Center; a second outlet is located in the Women's Welcome Center.

Parking

Parking lots, free and paid, are provided for faculty, staff, students and visitors. Vehicles must be registered with the Public Relations Department/Security Division/AUS Parking Services located on the mezzanine floor of the Main Building, office MM33. Once the vehicle is registered, a car parking sticker is issued. Faculty, staff and students using rented cars or using cars on a temporary basis, as well as visitors, are issued temporary permits.

AUS parking stickers should always be visibly displayed on the car's windshield. These stickers must be renewed during the first two weeks of every academic year.

Parking regulations and details on issuing car stickers are posted at www.aus.edu/publicaffairs/publicrelations/security/policies_e.php. The university reserves the right to make changes in urgent situations without any prior notice.

Pharmacy

Located in the Student Center, the pharmacy is part of the health coverage program and offers a full range of medication and various health, hygiene and cosmetic products.

Safety

The Safety Enforcement Division, part of the Public Relations Department, is located on the mezzanine floor of the Main Building. This division provides information on occupational safety and health hazards, and promotes a safe and healthy environment on campus. The Safety Enforcement Division can be contacted at safety@aus.edu. More information on the services and responsibilities of the Safety Enforcement Division is available at www.aus.edu/publicaffairs/publicrelations/safety/.

Security

The Security Division, part of the Public Relations Department, is the recognized law enforcement agent on campus. It monitors security on the entire campus, including the residential halls and all university-owned buildings, and works to ensure that UAE laws and AUS regulations are implemented. If a violation occurs, the security officers have the right to withdraw any ID.

This division oversees the campus traffic and parking system and is authorized to enforce all related regulations. It also provides security personnel 24 hours a day on university premises, including the residential areas, and for campus events when requested.

The Security Division is located on the mezzanine floor of the Main Building and can be contacted at aus_security@aus.edu. For more information on the Security Division's services, please refer to www.aus.edu/publicaffairs/publicrelations/security/index.php.

Transportation

AUS offers a shuttle bus service between the student residential halls and other areas of campus. Students who wish to commute off campus may contact Transportation Services, which can provide transportation to the cities of Sharjah, Dubai, Abu Dhabi and Al Ain. For more information on all routes and schedules, contact Transportation Services at 515 2171 or visit www.aus.edu/admin/operations/hts/transportation.php. Transportation Services also provides information on local taxi and rental car services.

Travel

The Travel Office, located in the Student Center, offers efficient and cost-effective services designed to assist all AUS students, faculty and staff. The office handles all travel arrangements, negotiates the most favorable rates and provides information on special offers.

Facilities and Resources

Alumni Affairs

The Office of Development and Alumni Affairs (ODAA) fosters relationships between AUS and its alumni by providing opportunities for mutual involvement that contribute to the missions and interests of both. Since many of the alumni are situated within the neighboring community, the ODAA also seeks to publicize the university's programs, goals and achievements to the off-campus community, including alumni, parents and interested friends of the university.

The ODAA promotes a spirit of unity and of possible collaboration among current and former students on current as well as future projects. The alumni are valuable assets, and they are provided ways to aid in the further development of the university by drawing on their knowledge, skills, financial resources and their sense of deep loyalty to their alma mater.

The ODAA enhances the financial well being of AUS by raising contributions for the AUS Pioneer Scholarship Fund and networking with the wider community in anticipation of future fundraising efforts.

For more information on the ODAA, visit www.aus.edu/gateways/alumni. php, or contact Dr. Nada Mourtada-Sabbah, Vice Chancellor for Development and Alumni Affairs, 06 515 2547, nmsabbah@aus.edu.

Architecture and Design Facilities

Beginning with the sophomore year, School of Architecture and Design students benefit from personally assigned workstations in digital studios. Students accepted into the second year have dedicated individual worktables and desktop computer workstations with network connections. The school provides for the use of both Macintosh and Intel-based platforms. All students have 1:1 access to the 100 Mbs Ethernet. Dedicated ancillary spaces, which are shared by all curricula, include digital classrooms and closed networked studios, a high-end Macintosh lab, an Intel-based lab, input/output labs, a printmaking shop, lighting and photography labs, a dedicated student wood shop, the Visual Resource Center, the Technical Equipment Center, a 3-D lab, the Material Resource Room, an exhibition gallery and dedicated critique rooms. Multimedia, video and sound equipment are featured in the Advanced Digital Laboratory, which includes sound editing booths.

Computer Learning Resources

The Information Technology (IT) Department serves the computer-related administrative, instructional, technical and research needs of students, faculty and staff. It also acts as the university's gateway to the Internet for academic purposes. Services provided include e-mail accounts and passwords, online courseware (Blackboard), wireless and local area networks and telephone services.

All classrooms are networked and equipped with data projectors and other technology that enable faculty members and students to enhance learning with digital and online content. Wireless network access is available in all academic areas of the campus.

AUS departments and programs offer a range of specialized computer laboratories with software to support student work. Additionally, the library features an information commons with an expanded range of computers, software and related technology along with support for students' research and other academic work.

The university's computer network uses fiber-optic cables that interconnect the entire campus, including the residential halls and faculty housing. Additional information can be found in the IT section of the university website.

Laboratories

Engineering and Computing Laboratories

The College of Engineering has approximately 30 laboratories and workshops. All equipment and instruments are accessible to and extensively used by the students. Laboratory summaries are presented below and may be reviewed in detail on the college's website.

Chemical engineering laboratories focus on unit operation, software, environmental, petroleum, water, materials, fluid flow and heat.

Civil engineering laboratories are designed for conducting standard construction materials, structural, soil, rocks, fluid mechanics, water and environmental tests.

Computer science and computer engineering laboratories relate to programming, digital systems, microprocessors, very large scale integration (VLSI), embedded systems, industrial computer applications, computer networks, software engineering, operating systems and databases.

Electrical engineering laboratories focus on electronics, electric power, control, measurements, machines, communications and signal processing, nondestructive testing and medical electronics.

Mechanical engineering has laboratories for engineering measurements, control, engine testing, advanced manufacturing, fluid mechanics, materials testing, mechatronics, dynamics and mechanical vibrations, computer-aided engineering, refrigeration and air-conditioning, thermodynamics and solar energy.

The various departments share eight computer labs with more than 230 stations. All labs have dedicated lab instructors and engineers. Additionally, all engineering facilities offer wireless connectivity.

Interpreting and Translation Laboratory

The Department of Arabic Studies has a purpose-built interpreting facility. It features simultaneous interpreting booths, a consecutive interpreting table, Internet access and equipment for simulated video teleconferencing.

This interpreting facility is also equipped with the latest technology and machine translation software, TRADOS and other relevant, including Internet-based, software needed in language engineering.

Mass Communication Laboratories and Studios

Students in the Department of Mass Communication benefit from high-tech digital classroom labs with Mac and PC computer stations featuring graphic design, desktop publishing and multimedia software. The Mass Communication TV Studio is a state-of-the-art facility that is dedicated to the development of student media skills. The studio consists of four digital wide-screen cameras, a wide-screen digital video mixer and a digital audio mixer. A variety of sets can be created quickly, including a broadcast news set.

Science Laboratories

The science programs benefit from up-to-date laboratories and equipment. Chemistry laboratories are equipped with standard chemical instrumentation, including balances, centrifuges, pH-meters, spectrophotometers, a rapid kinetic apparatus, glove box, and electrochemical and chromatographic equipment. The environmental sciences and analytic chemistry laboratories are equipped with the latest sampling and analytical devices, including AA, GC-MS, ICP, FTIR, TOC and HPLC equipment. The physics laboratories are supplied with up-to-date standard equipment, including computer interfaces, motion sensors, current sensors, voltage sensors, magnetic field sensors, linear air tracks, photogates, smart timers, projectile launchers, ballistic pendulums, rotational systems, digitometer, electric field mappers, current balance apparatus, signal/function generators, oscilloscopes, a Hall effect apparatus, lasers, spectral lamps, photoelectric effect apparatus, Geiger-Muller tubes, radiation counters, h/e apparatus, Frank Hertz apparatus, e/m apparatus, spectrometers, interferometers,

X-ray machines, a Millikan oil drop apparatus, heat engines/gas law apparatus, a thermal expansion apparatus and an adiabatic gas law apparatus. The biology laboratories are equipped with the latest stereo inverted and compound microscopes, a microtome, an autoclave, a laminar flow sterile hood, PAGE and agarose electrophoresis equipment, cryostat and microtome units, a workstation with a computer connected to digital microscope cameras, a growth chamber, IDEXX Colilert and a manifold filtration unit for microbiological analysis, a gel documentation system, a UV trans-illuminator, refrigerated microcentrifuges, a trans-blot semi-dry transfer apparatus, a gel dryer, CO_2 cell incubator, -80 °C freezer, a tissue homogenizer, and a thermocycler for DNA amplification.

Library

The AUS Library, an 11,000-square-meter state-of-the-art facility, provides collections, services and programs to support the curricular and research needs of the university community. The majority of the library's rapidly growing physical collection of 115,000 items is in English; however, there are also materials available in Arabic. An online catalog system can be used to search for library materials from any location on or off campus. Using the library website, students and faculty can access e-books, online databases, full-text journals and other digital resources. Library facilities include the Information Commons, group study rooms, quiet study areas and media viewing rooms. The library offers hands-on information literacy classes to teach students research skills. The library works in conjunction with all parts of the university to provide academic resources for all classes taught at AUS. Further information regarding the library is available at http://library.aus.edu.

Media and Printing

The Media and Printing Department is the AUS communications team. It

promotes the university's visibility by cultivating relationships with the news media, creating publications, and developing and implementing advertising campaigns. This department generates media coverage through press conferences, interviews and press releases. Additionally, the department writes, designs and produces *Campus Report*, which is published for the campus community, and *AUS News*, which is distributed on and off campus. Updates to the university's website are coordinated between the Media and Printing and Information Technology departments.

Research and Grants

AUS supports and promotes the research and consulting activities of its faculty members. In addition, AUS offers its students opportunities to work on faculty research projects, to present papers with faculty at international conferences and to assist faculty in developing research grants.

AUS upholds its ethical and legal responsibility to administratively review all proposed research projects involving humans or animals as participants to ensure compliance with internationally recognized principles and regulations governing the protection of research participants. All research studies at AUS involving the participation of humans must be submitted to and approved by the AUS Institutional Review Board (IRB) before any study is undertaken; research involving animals must be approved by the Animal Care Committee.

For further information on the university's research and grant opportunities, please visit the AUS website.

Research Centers

AUS has established a number of research centers as part of its commitment to research and community outreach.

Earthquake Observatory

The AUS Earthquake Observatory uses state-of-the art equipment and software to record and analyze the

region's earthquake activity. The Earthquake Observatory also provides expert opinions on earthquake hazards and related risk in the UAE and the Gulf region; assessment of seismic hazards at construction sites and petrochemical and industrial facilities; assessment of seismic risk of existing structures and recommendations for strengthening and retrofitting; analysis and design of earthquake-resistant structures; evaluation of local site effects; preparation of macrohazard and microhazard zonation maps; evaluation of dynamic soil properties; training workshops for engineers on the analysis and design of structures for earthquake loading; and expertise on the development of earthquake-resistant design codes.

Institute of Materials Systems

The Institute of Materials Systems collaborates with governmental and private sectors in areas of materials research and applications, focusing on quality control, performance, development and use of standard procedures, and quality assurance materials used in the region. Objectives of the institute are to conduct scientific research focused on materials properties and applications in harsh environments; assist governmental departments in establishing local and regional codes of practice; provide independent technical evaluation and consultation services on materials-related issues; enhance education through seminars, conferences and short courses; and establish collaboration with similar centers of excellence worldwide.

Institute of Urban and Regional Planning and Design

The Institute of Urban and Regional Planning and Design advances urban planning as it relates to the local culture and identity of the UAE and the Arab Gulf region, and promotes sustainability as integral to all activities pertinent to urban planning and urban design. The institute's objectives are to advance production and accumulation of knowledge in urban and regional planning and urban design; develop and offer educational

and training opportunities in urban and regional planning and urban design; collaborate with local governmental, not-for-profit, non-governmental and private agencies concerned with urban planning and development to advance quality of practice and research; advance public discourse on urban planning through public forums (e.g., seminars, conferences, symposia); and increase public awareness in urban planning and urban design.

Mechatronics Center

The Mechatronics Center leads research and development in advanced engineering systems and high-tech technology transfer in the region. It promotes multidisciplinary research activities among faculty members and graduate students at AUS, and between AUS and universities in the United States, Europe and Japan. It also cooperates with industry and government agencies where extensive integration of instrumentation, control systems, electronics, intelligent software and computers is required. Areas of expertise within the center include modern industrial installations and systems, computer integrated manufacturing systems, maintenance diagnosis and troubleshooting, micro-electro-mechanical systems, vehicle manufacture and design, robotics, electrical control and drives, and automated production systems.

Testing and Professional Development Center

The AUS Testing and Professional Development Center serves as a central point of testing for both the AUS campus and the community. The center accommodates the placement tests for newly AUS admitted students as well as university testing. The center is part of the Prometric Strategic Testing Network and offers the ETS Internet-based TOEFL as well as an institutional paper-based TOEFL.

AMIDEAST, one of the region's most prominent international testing administrators, is an AUS testing partner and has a permanent office on the AUS campus to administer TOEFL

tests (paper-based) on a regular basis, as well as other recognized international tests.

University Health Center

The University Health Center (UHC) provides primary health care to all AUS students, and faculty and staff members and their dependents. The center is open Sunday–Thursday from 8:30 a.m. to 4:30 p.m. and provides 24-hour accident and emergency care as well. Depending on the severity of the illness, patients are referred to hospitals for further treatment. Great emphasis is placed on making the campus a healthy and safe place to study, work and live.

The UHC is staffed with a highly qualified medical team, which includes general practitioners, a psychologist and registered nurses. The UHC is equipped with an ECG machine to monitor heart ailments, nebulizers for respiratory problems, a respiratory function test (spirometer), glucometers to check blood sugar levels, and an observation room (day care) to closely monitor patients.

Health Education Programs

As part of an educational institution, the UHC plays an active role in educating the university community and promotes on-campus health and wellness activities throughout the academic year. UHC programs include lectures and awareness campaigns on health-related issues such as first-aid training and CPR courses, substance abuse, mental health and healthy eating.

Health Insurance Plans for Students

As part of the registration procedures, every student must enroll in one of two health insurance plans. Plan I is compulsory for AUS-sponsored students but optional for others who are officially enrolled in health insurance plans with their families. Plan II is compulsory for all students who are not enrolled in Plan I. For more information on the health insurance plans, visit www.aus.edu/admin/uhc.

University Sports Complex

The Sports Complex facilities include indoor sports courts (basketball, tennis, squash and volleyball), multipurpose halls and exercise and gymnastic halls for use in both organized sports and free recreation; a 50-meter swimming pool; saunas; a fitness center with free weights and exercise machines; an exercise hall for aerobics, table tennis and martial arts events; outdoor courts (tennis, volleyball and basketball); a soccer field; a cricket ground; a cricket practice net; and a baseball field.

The AUS athletic facilities are available for the benefit of the entire AUS community. The Sports Complex fosters the continuing development of collegiate sports in the UAE through organizing and hosting athletic championships, symposia and training courses. Students, staff and faculty members are entitled to free participation, regardless of their abilities, in a variety of sports and leisure activities including fitness training, football, basketball, badminton, handball, volleyball, table tennis, tennis, squash, track and field games, martial arts and other athletic pursuits.

Details on the university's athletic facilities are available in the *Student Handbook* and at www.aus.edu/osa/athletics/.

Student Life on Campus

Code of Conduct

American University of Sharjah is a community of individuals living, working and studying together in order to create the ideal conditions for learning. Mutual respect and responsibility are imperative if each individual is to flourish and grow in this environment.

In order for the purpose of the university and its community to be realized, the rights, responsibilities and reasonable standards of conduct essential to a university community must be delineated. The legally established principles, rules and regulations of the university constitute the basic standards and guidelines for conduct on and off campus. The Office of Student Affairs (OSA) establishes and enforces those rules and regulations. The full text of the Student Code of Conduct is provided in the *Student Handbook*.

As part of OSA, Judicial Affairs is responsible for educating students about their rights and responsibilities, creating awareness within the AUS community about the Student Code of Conduct, and implementing the code in a fair and consistent manner. Allegations of misconduct under the Student Code of Conduct are resolved by Judicial Affairs in a manner consistent with the core values of fairness, honesty and integrity. Judicial Affairs is located on the first floor of the Student Center in offices A254–256 and 233–234.

Judicial Affairs also offers mediation services, which assist students in resolving conflicts through mediation. For more information, please refer to the *Student Handbook* or visit www.aus.edu/osa/judicialaffairs.

Community Services

AUS Community Services is a link between students and the various needs found in society. Community Services allows students to experience first-hand the value of serving others through charity, awareness and outreach programs. It involves them personally in community events that enrich their life experiences. Community Services coordinates a variety of volunteer programs and strongly encourages students to contribute to the development of new ones. Current volunteer programs are listed in the Student Affairs section of the university website and in the *Student Handboo*k. Students who are interested in learning more about these programs should visit the Community Services Office located in the Student Center (office A250), call 515 2794 or send e-mail to communityservices@aus.edu.

Cultural Events

Drama performances and musical events, ranging from classical and regional to jazz and rock, are brought to campus through the Cultural Events Committee. For more information, visit www.aus.edu/culturalevents/.

Residential Life

The main objective of the Student Residential Life Department of OSA is to support and complement the mission of the university and its academic programs by creating a comfortable and safe environment that contributes to the success of resident students' educational progress and personal growth. The AUS residential halls offer a unique multicultural environment in which students from different parts of the world can learn from one another.

Because residential hall living is seen as a positive educational experience, students are encouraged to live on campus. Living on campus complements the overall learning experience by fostering independence and tolerance of others in students.

The university offers a variety of rooms at different rates. All residential hall rooms have Internet and direct telephone connections. In addition, the residential halls offer students many resources, including study rooms, computer labs, dining areas, recreational areas, TV rooms, laundry facilities and fitness centers. The Women's Welcome Center, located in front of the women's residential halls, features a hair salon, a TV room/reception area and a mini-mart.

Living on campus is encouraged because it allows students to make the most of what AUS has to offer, such as sports and dining facilities, the library and laboratories. Furthermore, it gives students convenient access to the many activities that take place during the day and in the evening. The university offers a convenient bus service between the residential halls and other areas on campus.

The residential halls for male and female students are completely separate. All hall residents are expected to spend every night in the halls, unless they have written authorization from their parents or

guardian indicating otherwise. To ensure the security of all students, the residential halls are protected by security patrols. Residential halls staff members are available around the clock for the safety and comfort of all residents. Regulations for the residential halls are available in the *Student Handbook* and on the university website.

The residential halls also offer resident students part-time employment opportunities. Students are selected semester-wise for two positions: desk attendant and resident assistant. These jobs provide students with a chance to gain valuable work experience and also develop their communication and leadership skills.

Student Activities

Under the supervision of the Student Development and Organizations Department, students are encouraged to organize many events that offer cultural entertainment to the entire university community. These events include the Global Day festivities, Club Fair, music nights, poetry nights, competitions, the UAE National Day celebration and many more. The Student Development and Organizations Department is located in the Student Center. Visit www.aus.edu/osa/activities/ for details.

Student Athletics and Recreation

The Office of Student Affairs believes that students should have ongoing opportunities to develop their talents through a wide variety of sports. To achieve this goal, full-time and part-time coaches and trainers are available in the AUS Sports Complex to help students develop team play, sportsmanship and healthy lifestyles. More than 20 activities are available, featuring both team and individual sports and leisure activities, which offer broad-based competitive and instructional programs for both genders. Details on the university's athletic facilities are available in the *Student Handbook* and at www.aus.edu/osa/athletics/.

The university's intramural sports

program complements students' academic, social and cultural education. Involvement in intramural sports activities allows students to develop new friendships and enjoy the benefits of exercise.

In line with its continuous endeavor to foster collegiate sports in the UAE, the Sports Complex offers students the opportunity to participate in collegiate athletic championships, symposia and training courses it organizes and hosts.

Student Center

The Student Center plays a broad role in the extracurricular life of the university. It is a comfortable and inviting place where students relax. In addition to housing the Student Development and Organizations Department, the Student Center contains several meeting rooms, student lounges, a women's lounge, the Student Council office, offices for student organizations, activity rooms, a TV room, multipurpose rooms, the Internet Café, a student courtyard, a full-size eight-lane bowling alley, the Leopard Mini-Mart, a barbershop, a pharmacy, a travel office and numerous food outlets. Students can surrender found items or look for ones lost at the Lost and Found based at the Student Center reception desk.

Student Council

His Highness Sheikh Dr. Sultan Bin Mohammad Al Qassimi strongly encouraged AUS students to establish a student government in order to ensure student representation on campus. A Student Union Charter was drafted by students and approved by the Administrative Committee of the Board of Trustees during the 1997–1998 academic year. The AUS Student Council is an elected body that articulates student views and interests in the university. The Student Council is a vehicle for ensuring that students can have a voice in formulating university priorities and policies. It also provides a structure for greater student involvement on campus. The Vice Chancellor for Student Affairs advises the Student Council. For more

information, please see the *Student Handbook* or visit www.aus.edu/osa/council/index.php.

Student Employment

Opportunities for on-campus employment are available to all AUS students. Students may work no more than 15 hours per week (60 hours/month). Students may work for 40 hours per week (160 hours/month) during academic breaks and summer terms only. Hourly rates vary depending on what kind of job the student is doing (i.e., clerical or computer-related) and on seniority. In addition to working in the university departments and campus outlets and facilities, students can work voluntarily off-campus during exhibitions and important events in UAE. Further information on all campus employment opportunities is available through the Student Employment Office located in the Student Center (office A249).

Student Leadership Programs

OSA's student leadership programs offer opportunities for students to develop their leadership skills and potential. These programs enhance student leadership and enable them to lead in co-curricular fields so that they become responsible citizens of a global society. Specialized leadership development programs and sessions are offered in-house and off campus through professionals and in collaboration with our academic experts.

Student Organizations

Student-sponsored organizations are an integral part of the learning process at most institutions of higher education. The academic experience is enriched by participation in activities that allow students to pursue their personal interests outside the classroom.

The Student Development and Organizations Department is the central support for the numerous student organizations on campus. Its role includes supervising and providing assistance with program planning and implementation. The student

organizations at AUS span a wide range of interests, including sports, music, literature, recreation, culture and social issues. There are also many cultural/ethnic/national organizations that reflect the varied backgrounds of AUS students. These organizations offer students opportunities for leadership development and for involvement in university life. Student organizations have easy access to all the facilities they may need to plan, organize and implement their activities. Each organization has access to an office that is equipped with all necessary tools to conduct their business. Conference rooms, meeting rooms and a multipurpose room are also available for student organizations' use.

Interest-oriented and ethnic/national clubs represent the diversity of the AUS community's professional and extracurricular interests and cultural backgrounds. They organize numerous professional and cultural activities throughout the academic year and play a vital role in fostering a rich multicultural environment on campus. For a complete listing of student clubs, visit www.aus. edu/osa/activities/clubs_orgs.php.

Participation in student organizations is strongly encouraged. Students are also encouraged to form organizations/clubs that promote their interests and hobbies.

Student Publications

Practical writing experience is available to AUS students through three student publications, the *Leopard*, *Realms* and *Tatra*. Students interested in contributing to or working on these publications should contact the Student Development and Organizations Department for further information.

The *Leopard* Newspaper: "A Reason to Roar": The *Leopard* is an official university newspaper and a voice of AUS students. The leopard is the official AUS mascot and was chosen because the UAE preserves and protects the Arabian leopard, which is currently on the brink of extinction.

Realms: This magazine was founded as a literary outlet for AUS students. *Realms* gives all students a chance

to read the stories, poems and essays of their classmates, as well as to contribute their creative work. *Realms* aims to foster an interest in creative writing and literature and to help students view the English language as a means of expressing their thoughts and feelings and not merely as an academic tool.

Tatra: This literary magazine club motivates the Arabic-speaking students of AUS to write poetry and prose in Arabic for inclusion in *Tatra*, which is published in Arabic every spring semester. The club also organizes events and meetings concerning Arabic literature to discuss the latest books published in Arabic, as well as various workshops on Arabic calligraphy and writing.

Students with Physical Challenges

Student Learning and Counseling Services provides assistance to AUS students who are physically challenged. Students who need further information should contact Student Learning and Counseling Services in the Student Center (offices A202–207) or call 515 2732. Please also refer to the Academic Achievement Center section below.

Student Educational Services

Academic Achievement Center

This center provides students assistance in academic matters through group and individual advising. The center works directly with reinstated students, students on academic probation, and students with other academic difficulties, such as students with physical challenges who face learning obstacles, or students with specific learning disabilities (also refer to Students with Physical Challenges above).

Petition forms for students seeking reinstatement to the university following academic dismissal must be submitted through this office.

The academic advisors conduct the

seminars that comprise the University Study Skills Course, which help students with issues such as study skills, time management, test-taking techniques and other learning strategies.

The center offers testing and advising for students concerning majors, career paths and career interests in relation to their academic programs.

The center supports the mission of the university by coordinating and tracking academic support programs and academic assessments across the university. These assessments include the MAPP test of academic proficiency, which is given to select freshmen and seniors. Additionally, the center coordinates and tracks student retention and the progress of first-year students.

Cisco Academy

AUS hosts a Cisco regional networking academy in the College of Engineering. The academy trains students and professionals to design, build and maintain computer networks and prepares them for industry-standard certification. For more details, see the College of Engineering section of this catalog or visit www.aus.edu/engr/cisco/.

Directorate of Corporate Relations

The Directorate of Corporate Relations (DCR) offers all students and alumni comprehensive career services. It works closely with industry in Sharjah and the other emirates in order to promote interaction between potential employers and AUS students and graduates. DCR organizes corporate briefings, employer receptions and the annual Career Fair. It also provides information on full-time and part-time job opportunities, internships and summer employment. DCR offers career development workshops, one-to-one interviews, drop-in sessions, career assessments and other services. Advice on working abroad is also available. DCR has a career resource library and an up-to-date database of employers in the UAE and Middle East.

For more information, please visit http://www.aus.edu/caps/.

Learning and Counseling

Student Learning and Counseling Services (SLCS) offers support services to enhance the success of students. These services include assisting with academic growth, educational and career goals, problem solving, decision making, understanding and appreciation of oneself, and interpersonal relationships.

Counseling is strictly confidential. The information shared with a counselor will not be disclosed to another individual or organization without the written consent of the student. Services are free, voluntary and available to all undergraduate and graduate students currently enrolled at AUS. Appointments may be arranged by calling 515 2767, 515 2790 or 515 2732, or by visiting the SLCS on the first floor of the Student Center. More information on SLCS can be found at www.aus.edu/osa/counseling/.

Student Learning and Counseling Services offers a variety of services to students, including personality/WAIS-III IQ and mental/behavioral testing. Students may choose to include any member of their family or other significant persons in the process.

Services offered by SLCS include:

Counseling

Counselors work with students to explore any academic or personal problems or concerns they may be experiencing. Examples of common issues that bring students to SLCS include adjusting to university life, study skills or time management issues, confusion about life or career goals, identity concerns, relationship conflicts, depression, anxiety, grief and loss. Students who have been counseled at home or off-campus may wish to continue with counseling at the university.

SLCS provides different types of counseling services: group counseling, couples counseling, crisis counseling, family therapy and personality testing.

SLCS also offers private consultation for students, faculty members and staff members who would like advice about how to help a student through a difficult time.

In addition to direct counseling, counselors can also provide referral information to students.

Self-Help Resources

SLCS has extensive self-help resources on many subjects in the form of handouts, books, videos and links on its section of the university website. Topics include coping with stress, depression, sleep disturbance, loneliness, anxiety, eating disorders, grief and loss, substance abuse, relationship building, assertiveness, career choices, study skills, concentration and memory, motivation, time management, and test-taking strategies.

Student Workshops

Workshops are conducted throughout the academic year on topics such as time management, study skills, communication skills, anxiety and stress management, anger management, alcohol and drugs, and eating and body image concerns. Workshop topics and dates are advertised around campus, or students can call to learn about future workshops. Students are encouraged to contact SLCS with ideas for future workshops.

Mathematics Learning Center

The Mathematics Learning Center (MLC), located in the New Academic Building office NAB239A, provides one-on-one tutorial sessions for students enrolled in preparatory and 100-level mathematics courses. Student may drop in for consultation during the weekly scheduled sessions to seek understanding of certain course-related concepts. Consultation does not cover specific homework, or project- or exam-related questions. For some of the above courses, the MLC also offers review sessions prior to the exams. For more information about MLC, visit www.aus.edu/cas/maths/student_services.php.

Study Abroad

The Study Abroad Department works with AUS students who wish to study at universities in other countries either for a semester or a year. The Study Abroad Department also facilitates the admission of international students coming to AUS to study either in the context of an exchange program agreement between AUS and the students' home institutions or as visiting students.

For more information on study abroad opportunities for AUS students, please see the section entitled AUS Students Studying Abroad under Registration and Course Information in the Academic Policies and Regulations section of this catalog.

Writing Center

The AUS Writing Center, located on the first floor of the AUS Library building, helps students become independent, confident writers. Available to all AUS students, the Writing Center offers one-on-one writing conferences by appointment or on a drop-in basis. Consultations may include: thesis development, organization, outlining, paragraph development, vocabulary, sentence structure and mechanics. Students may visit the Writing Center to work on drafts, to do research or to work with a consultant on particular aspects of their writing. The Writing Center also offers workshops on a variety of writing topics throughout the academic year. For more information, visit www.aus.edu/cas/writingcenter.

AUS

Admission to Undergraduate Studies

American University of Sharjah places particular emphasis on quality education. Applicants are considered based on their qualifications regardless of race, color, gender, religion, disabilities, age or national origin. The most qualified candidates are selected to fill the seats available in any college or school.

The medium of instruction is English and a good command of the language, both oral and written, is essential for students to be successful at AUS.

For admission consideration, secondary school grades and university grade point averages (if applicable) must meet the minimum established standards as set by the university.

Furthermore, applicants with previous college/university experiences applying to AUS as first-year students will be considered only if they were in good standing in their previous college/university, provided seats are available.

The university requires regular attendance at all classes, lectures, studios, laboratory sessions and seminars. Students are not permitted to pursue AUS degrees through correspondence or by merely passing university examinations. AUS does not offer any degrees by distance education.

All inquiries, requests for admission application forms and subsequent correspondence should be addressed to the Office of Enrollment Management/ Undergraduate Admissions at:

> American University of Sharjah
> Office of Enrollment Management
> Undergraduate Admissions
> P.O. Box 26666
> Sharjah, United Arab Emirates
> admission@aus.edu
> www.aus.edu/admissions/

Freshman Admission

Minimum Admission Requirements

The university's minimum admission requirements depend on the applicant's type of secondary education program and certificate. For non-vocational certificates only subjects classified as academic are accepted for admission consideration and the calculation of averages.

Admission to the university is competitive, and the actual required minimum average for admission consideration and to guarantee a seat will depend on:

- secondary education certificate or school average
- SAT scores (as applicable)
- number of qualified applicants
- number of available seats

The minimum required average for accepting an application is the equivalent of 80 percent or more in the final year (national exams only) of secondary education, or 80 percent or more in the best two out of the last three years. Other program-specific requirements or restrictions may also apply.

Furthermore, applicants must obtain a score of at least 71 on the Internet-Based TOEFL (iBT) in order to be admitted to an AUS college/school. Scores are only valid for two calendar years. Students who score below the minimum required TOEFL score but who otherwise meet AUS admission standards may be admitted to the Intensive English Program (IEP) at AUS. For information on matriculation into the chosen field of study after studying in the IEP, please refer to the Exit from the IEP section under the Intensive English Program section.

Note: *The AUS TOEFL code is 0526.*

Secondary School Certificates

Recognized Secondary School Certificates

AUS recognizes secondary school certificates awarded by ministries of education and by private secondary schools that are recognized by their host countries. The university also accepts certificates awarded by recognized qualification authorities, and national and international boards. Some countries award two levels of secondary school certificates. In this case, the university recognizes the higher certificate.

Examples of Secondary School Certificates

Following is a list of some common certificates and the corresponding minimum levels of performance required for accepting an application at AUS. These certificates and levels of achievement serve as guidelines for admission to AUS and may differ from other institutions or the standards that are generally accepted in an applicant's native country. The university may consider other types of secondary school certificates.

- **National General Secondary School Certificates (Arts or Science)**: minimum required average is the equivalent of 80 percent or more in the final year national exam, or 80 percent or more in best two years
- **American-style High School Diploma**: minimum 3.0 CGPA (or equivalent) on a 4.0 scale (only subjects classified as academic are considered in the calculation of the CGPA)
- **International Baccalaureate (IB)**: must complete any six subjects, with at least three at the higher level
- **Lebanese Baccalaureate**: obtaining the baccalaureate
- **French Baccalaureate or equivalent**: obtaining the baccalaureate
- **Pakistani Board(s) Certificates**: Higher Secondary School Certificate (Part II) required
- **Indian Board(s) Certificates**: Senior Secondary School Certificate (12th Standard) required
- **Iranian Certificate**: completion of pre-university year required
- **German Abitur**: minimum average of 3.0 required
- **IGCSE, GCSE, GCE**: To accept an application for admission consideration, applicants must submit a minimum of eight different IGCSE/GCSE and/or GCE subjects with four C grades and four B grades, or higher. However, priority in admission consideration and the selection of

majors will be given to applicants who meet the following criteria:

1. Have completed 12 years of schooling; School Leaving Certificate must be provided showing last grade (year) completed.

2. Have completed GCE advanced supplementary level (AS-level) and/or advanced level (A-level) subjects.

3. Have the highest grades.

4. Subjects must be from at least four different subject groups. Also, only subjects classified as academic by AUS (including arts and creativity subject group) will be accepted for admission consideration.

Program Admission Requirements

Certain types of secondary school certificates are accepted only for specific programs at AUS.

• Literary Certificates: Holders may be admitted to the College of Arts and Sciences (except for the biology, chemistry, environmental sciences and mathematics majors), the School of Architecture and Design (except for the architecture and interior design majors) and any major offered by the School of Business and Management.

• Scientific Certificates: Holders may be admitted to any major in any of the colleges/schools.

• Technical and Vocational Secondary School Certificates: Highly motivated and academically qualified students may be admitted to a major that corresponds to the nature of the technical or vocational secondary school program.

Advanced Standing Credit Transfer

Students who achieve a minimum grade equivalent to B in the IB Higher Levels, GCE A-Levels, the Lebanese Baccalaureate, the French Baccalaureate, the German Abitur or the American Advanced Placement tests may be awarded course credits for freshman-level courses. The complete transfer policy is available from the Office of Enrollment Management/ Undergraduate Admissions.

Applicants must submit their original secondary school certificate along with the subjects' descriptions to the Office of the Registrar no later than the early registration of their second semester of study at AUS. Applicants who submit their documents before their first semester of study will have their documents evaluated toward credit transfer as well as exemption from appropriate placement tests. More information on placement tests is provided in the following section.

Pre-entry Requirements for Freshman Students

Placement Tests

All freshman applicants who attain the minimum score or higher on the TOEFL are required to sit for placement tests appropriate for their intended majors as shown in the chart below.

Taking the Writing Placement Test is mandatory for all students admitted to the freshman year. Advanced standing and transfer students granted credits for writing courses are waived from taking the Writing Placement Test.

Students who do not sit for the placement tests (with the exception of the Writing Placement Test) will be required to complete the corresponding preparatory course.

Advanced standing and transfer students may be exempted from taking certain placements tests depending on subjects/courses completed and grades earned.

No student is allowed to sit for a placement test more than once. The sole exception is for the Mathematics Placement Test if a student is changing programs and the mathematics level is different in the two programs.

Preparatory Courses

Students who score low on a particular placement test are enrolled in an appropriate preparatory course (i.e., MTH 00X, PHY 00X, WRI 00X). The course's final grade counts toward the cumulative grade point average, but the course's credits do not count toward degree credits. A failing grade in a preparatory course cannot be changed in the student record by passing the placement test later. Students are allowed to repeat a preparatory course up to Sophomore I (less than 45 credits).

Required Placement Tests						
Majors	**Placement Test**					
	Engineering Math and Science	**Business Math**	**Architecture Math**	**Physics**	**English**	**Computer**
English Language and Literature/Mass Communication	No	No	No	No	Yes	No
Biology/Chemistry/Environmental Sciences/ Mathematics	Yes	No	No	Yes	Yes	No
International Studies	No	No	No	No	Yes	No
Architecture/Interior Design	No	No	Yes	No	Yes	No
Design Management/Multimedia Design/Visual Communication	No	Yes	No	No	Yes	No
Business and Management (all majors)	No	Yes	No	No	Yes	No
Computer Science/Mathematics	Yes	No	No	Yes	Yes	No
Engineering (all engineering majors)	Yes	No	No	Yes	Yes	No
Undeclared Major	*	*	*	*	Yes	*
The appropriate placement test(s) must be taken before a student can enroll in the first-year course.						

Transfer Admission

Admission Requirements

Depending on available seats, candidates transferring from institutions of higher education may be considered for admission, subject to the following conditions:

1. They are in good academic standing (i.e., not on probation or dismissed from the institution from which they are transferring). The minimum cumulative grade point average (CGPA) required by AUS depends on the institution from which the applicants are transferring. Please contact the Office of Enrollment Management/Undergraduate Admissions for specific CGPA requirements.

2. They are transferring from recognized and accredited institutions of higher education offering learning experiences equivalent to those offered at AUS and have successfully completed one or more semesters at their institutions.

3. Prior to their admission to the institutions from which they are transferring, they met the AUS requirements for admission.

4. They meet the English language proficiency requirements of AUS. TOEFL may not be required for students studying at a four-year university in North America where English is the medium of instruction.

5. They submit official transcripts of their high school and college/university records along with the syllabi for and descriptions of courses they seek to transfer.

Pre-entry Requirements for Transfer Students

Depending on credits transferred, transfer students might need to sit for certain placement tests. Please check the information on Pre-entry Requirements for Freshman Students earlier in this section for details on placement tests and preparatory courses.

Transfer of Credits

Transfer applicants from two-year community colleges in North America and four-year colleges/universities with a similar mission to AUS may be awarded transfer credits. The minimum required course grade(s) to be considered for credit transfer will depend on the institution from which the applicant is transferring.

Courses completed more than five years prior to matriculation as an undergraduate student at AUS are not transferable. Furthermore, at the time of graduation, no course can be more than eight years old if it is to be counted toward the awarding of a degree.

No more than 50 percent of the credits required to earn a degree from AUS may be transferred from another institution. In addition, transfer students must satisfy the university's graduation residence requirements as outlined in the Academic Policies and Regulations section of this catalog.

Grades earned on a transferred course do not transfer and will not be used to calculate the student's cumulative grade point average (CGPA). The transfer course(s) could be used to satisfy registration and graduation requirements where applicable.

Transcripts of transfer students will be evaluated only once. Transfer students have to submit their official transcripts, syllabi and requested work samples to the Office of Enrollment Management/Undergraduate Studies by the dates specified in the Transfer Applicants Deadlines section later in this section of the catalog. In addition to the official transcript and the syllabi and descriptions for courses students seek to transfer, some programs may require students to submit samples of their work, assignments and/or examinations. Students who seek transfer credits for studio courses are advised to provide a portfolio of completed course work in photographic, digital or original format. No engineering or computer science courses will be transferred from academic programs not recognized by ABET, Inc. (Accreditation Board for Engineering and Technology).

Files completed by the deadlines will be evaluated, and students will be awarded transfer credits, as applicable, before the first day of registration of the student's first semester at AUS. Students will receive e-mail notification of their transferred credits by the Office of the Registrar.

Courses identified as equivalent in content and level to AUS courses will be transferred as the equivalent AUS course. Other appropriate university-level courses may be transferred as free electives or as unassigned courses in the relevant area of the general university requirements. The decision regarding credits awarded is made by the appropriate academic division at AUS. The Office of the Registrar maintains and updates the transfer students' records. The complete transfer policy is available from the Office of Enrollment Management/Undergraduate Admissions.

Applicants with Physical Challenges

Depending on available facilities and the type of physical condition, the university may provide special services to applicants with physical challenges. Applicants with special needs are requested to contact the Office of Student Affairs at studentaffairs@aus.edu to determine if a specific service can be provided by AUS. This information will be treated confidentially.

Exchange Student Admission

An exchange student is not formally admitted to American University of Sharjah but is allowed to take courses at the university in the context of a semester exchange program between AUS and the student's university.

Students must first apply through the study abroad office at their home

institutions. In addition, they must submit the Study Abroad Application form to the Study Abroad Department at AUS. The form is available either from the Study Abroad Department or at www.aus.edu/studyabroad/forms.php. Exchange students register through the Office of the Registrar. They may enroll in any university course for which they have the necessary academic background and qualifications. In courses with enrollment limits, priority is given to AUS students.

Normally, a student is allowed to register as an exchange student for not more than one academic year.

For further information, please contact the Study Abroad Department at studyabroad@aus.edu.

Visiting Student Admission

A visiting student is one who is not formally admitted to American University of Sharjah but is allowed to take courses at AUS for transfer back to the student's home institution. Visiting students are not registered in the context of a semester exchange program between AUS and the student's university. Visiting students should check with their home institutions about the transferability of AUS credits to their programs.

Applicants seeking visiting student status must submit to the AUS Study Abroad Department a visiting student application (available from the Study Abroad Department and the university website at www.aus.edu/studyabroad/forms.php), an official university transcript showing courses in progress at the time of application and a letter of good academic standing from their home institution.

To secure seats in courses, applications should be submitted by April 29 for summer and fall enrollment and November 30 for spring enrollment.

TOEFL is required except for students studying at a four-year university in North America where English is the medium of instruction.

If the application is approved, registration is completed through the Office of the Registrar. Visiting students may enroll in any university course for which they have the necessary academic background and qualifications. In courses with enrollment limits, priority is given to AUS students.

Normally, a student is not allowed to register as a visiting student for more than one academic year.

For further information, please contact the Study Abroad Department at studyabroad@aus.edu.

Non-degree Admission

Non-degree status is the designation used for students who are enrolled in credit courses at AUS but who are not currently pursuing a degree program. Some students begin their studies in non-degree status while others do not wish to pursue a degree program. To be considered for admission, an applicant must meet the same minimum admission criteria established for freshman or transfer admission and must submit the corresponding application with all the required documents to the Office of Enrollment Management/Undergraduate Admissions by the assigned dates (see the section on Deadlines for Admission).

American University of Sharjah students who have not completed their degree programs and students who have been dismissed from the university cannot register for non-degree status.

Non-degree students may enroll in any university course for which they have the necessary academic background and qualifications. They must register for courses through the Office of the Registrar. In courses with enrollment limits, priority is given to AUS students.

Transient Student Admission

Transient student status covers those who have obtained their undergraduate or graduate degrees from AUS and have returned to take extra course(s) at AUS, those who hold degrees from universities other than AUS and who want to take course(s) at AUS but not toward a degree, and AUS faculty/staff and spouses of faculty/staff who want to take course(s) for reasons other than seeking a degree.

Applicants seeking transient student status at AUS must submit the Transient Student Application form to the Office of the Registrar. The form is available either from the Office of the Registrar or at www.aus.edu/registration/all_forms.php.

Transient students may enroll in any university course for which they have the necessary academic background and qualifications. They must register for courses through the Office of the Registrar. In courses with enrollment limits, priority is given to AUS students.

Normally, a student can register as a transient student for no more than one academic year.

Deadlines for Admission

Early Admission

A student in his/her final year of secondary school may apply for early provisional admission by submitting official transcripts from at least the two years previous to the final year of secondary school and SAT scores (as applicable).

Early admission is offered only to highly qualified applicants and is not considered final until students submit a recognized and official secondary school certificate, or equivalent, showing the successful completion of a secondary education and all items as

requested in the applicant's letter of admission.

Students cannot register for courses until the admissions process has been completed.

Freshman Applicants' Deadlines

All applications must be on file in the Office of Enrollment Management/ Undergraduate Admissions by the following dates:

Fall Semester 2009
Early Admission:
    April 15, 2009

Regular Admission:
    Applicants outside the UAE:
    July 1, 2009

    Applicants inside the UAE:
    July 15, 2009

Spring Semester 2010
Regular Admission:
    Applicants outside the UAE:
    December 1, 2009

    Applicants inside the UAE:
    December 17, 2009

Students who need visas should apply at least one month before the established deadlines.

Transfer Applicants' Deadlines

All transfer applications along with materials for evaluation of transferable courses must be on file in the Office of Enrollment Management/ Undergraduate Admissions by the admission deadlines listed below. Courses will not be evaluated for transfer until the official transcripts, syllabi and requested work samples are submitted.

Fall Semester 2009
    June 18, 2009

Spring Semester 2010
    December 6, 2009

Summer Term 2010
    April 29, 2010

Upon receipt, AUS will investigate the authenticity and accuracy of all submitted transcripts and supporting documents/materials.

The Offer of Admission

The offer of admission, regardless of type, is valid only for the semester for which a student applies. If an applicant is granted admission for a certain semester and for some reason fails to register in that semester, the applicant may request, in writing, deferring admission for the following semester only. Admission consideration for the following semester will depend on available seats and the applicable admission criteria.

Admission Deposit

All admitted students, regardless of type, are required to pay a seat reservation deposit of UAE Dirhams 5,000 and a residential hall room reservation deposit (if applicable) of UAE Dirhams 500. Both deposits are non-refundable and non-transferable to others and must be paid before the established deadline indicated in the letter of admission. These deposits are deductible from the student's bill once the applicant joins AUS. If a student requests to defer admission to the following semester and the request is approved, both deposits will be applied to the following semester's invoice.

Falsified Admission Documents

American University of Sharjah reserves the right to apply disciplinary actions, including revoke admission granted and dismiss a student from AUS, any time it is brought to the attention of the Office of Enrollment Management that a student submitted forged documents and provided false information to gain admission to the university.

AUS
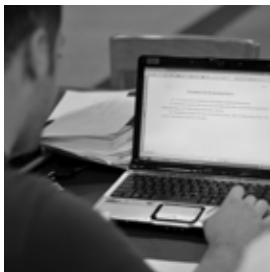
Academic Integrity

Student Academic Integrity Code

Academic integrity lies at the heart of intellectual life. As members of a diverse community committed to the advancement of knowledge, American University of Sharjah affirms the importance of respecting the integrity of individual work. The AUS Student Academic Integrity Code describes standards for academic conduct, students' rights and responsibilities as members of an academic community, and procedures for handling allegations of academic dishonesty. As an institution of higher learning, AUS views academic integrity as an educational as well as a judicial issue.

The first obligation of a student is to pursue conscientiously the academic objectives that he/she has chosen. Accordingly, each student is required to conform to the regulations of the university, of the college/school in which he/she has enrolled and of the classes in which he/she is registered. It is further expected that all examinations, tests, papers and other assignments will be completed according to the standards set forth in this code.

By registering as a student at AUS, all students acknowledge their awareness of the academic integrity code and university registration policies and procedures. At the beginning of the academic year, students will be asked to sign a statement agreeing to abide by the academic integrity code.

Students are responsible for becoming familiar with their rights and responsibilities as defined by the academic integrity code and for understanding the requirements for their particular courses (e.g., regarding such issues as collaborative work, use of study aids or take-home examinations, etc.). Students are also responsible for learning the conventions of documentation and acknowledgment of sources required in academic work.

Definition of Academic Violations

Members of the academic community are expected to conduct themselves with integrity as a matter of course. Certain violations of ethical conduct relate specifically to academic integrity. Academic violations include, but are not limited to, the following categories.

Plagiarism

To plagiarize is to use the work, ideas, images or words of someone else without attribution. Plagiarism may involve using someone else's wording—a distinctive name, a phrase, a sentence or an entire passage or essay—without using quotation marks. It may also involve misrepresenting the sources that were used. The issue of plagiarism applies to all student assignments.

Inappropriate Collaboration

Close collaboration on academic work requires acknowledgment. Inappropriate collaboration involves working with someone else in developing, organizing or revising a project (such as a paper, an oral presentation, a research or design project or a take-home examination) without acknowledging that person's help. The use of unauthorized assistance must be avoided in the production of all academic work. Specific policies regarding collaborative work, peer review, the use of tutors and editing may vary among individual professors.

Inappropriate Proxy

Students must attend their own classes and be present for all examinations. Those impersonated and impersonators will be suspended or dismissed from the university.

Dishonesty in Examinations and Submitted Work

All academic work and materials submitted for assessment must be the sole original work of the student, unless otherwise directed by the instructor. Communication is not allowed between or among students, nor are students allowed to consult books, papers, study aids or notes without explicit permission. Cheating includes, but is not limited to, copying from another's paper, giving unauthorized assistance, obtaining unauthorized advance knowledge of examination questions, and the use of mechanical or marking devices or procedures for the purpose of achieving false scores on machine-graded examinations. Specific policies regarding examinations may vary with individual professors. Students are prohibited from submitting any material prepared by or purchased from another person or company.

Work Completed for One Course and Submitted to Another

Students may not present the same work for more than one course. Under exceptional circumstances, faculty members may permit a significant piece of research to satisfy requirements in two courses. However, both professors must agree in advance to this arrangement. Students are reminded that when incorporating their own past research in current projects, they need to reference such previous work.

Deliberate Falsification of Data

Students may not deliberately falsify data or distort supporting documentation for course work or other academic activity.

Interference with Other Students' Work

Students may not intentionally interfere with the work of others, such as sabotaging laboratory experiments, research or digital files, or by giving misleading information or disrupting class work.

Copyright Violations

Copyright laws must be observed. These laws govern practices such as making use of printed materials, duplicating computer software, duplicating images, photoduplicating copyrighted materials and reproducing audio/visual works. The academic integrity code prohibits theft and the unauthorized use of documents and requires adherence to the laws of Sharjah and the federal laws of the UAE.

Complicity in Academic Dishonesty

Complicity in academic dishonesty consists of helping or attempting to help another person commit an act of academic dishonesty or willfully assisting another student in the violation

of the academic code of integrity. Complicity in academic dishonesty is pre-meditated and intentional. This can include, but is not limited to:

1. doing work for another student
2. designing or producing a project for another student
3. willfully providing answers during an exam, test or quiz
4. calling a student on a mobile phone while taking an exam and providing information
5. providing a student with an advance copy of a test
6. leaving inappropriate materials behind at the site of an exam or test
7. altering outcome results

Adjudication of Academic Offenses

Jurisdiction

Academic cases resulting from alleged violations of the university's academic integrity code are within the jurisdiction of either a faculty member or the dean of a college/school.

Faculty members who wish to bring charges against students should do so through the dean (or appointed designee) of the college/school in which the alleged academic integrity code violation occurred. Students who wish to bring charges against other students must do so through the faculty member in whose course or academic activity the alleged academic integrity code violation occurred. The student who brings the charges must identify himself/herself to the faculty member.

Violations of the academic integrity code that involve admission and/or placement testing fall within the jurisdiction of an ad hoc committee that is called upon when such violations are reported and could result in the revocation of admission or dismissal from the university.

The Adjudication Process

One of two procedures may be followed in the adjudication process. The first grants authority to the faculty member to exercise discretion in those cases involving a student's judgmental error rather than willful dishonesty. The second grants jurisdiction to the dean of the college/school in which the alleged violation has occurred.

1. Faculty Authority

   If a faculty member is convinced that an alleged offense has resulted from an error in judgment on the student's part rather than from purposeful dishonesty, the faculty member may decide to use the occasion for instructing the student on acceptable standards for academic work. In such cases, the faculty member may, for example, require the student to rewrite or correct the original assignment or to submit a substitute assignment.

   When faculty jurisdiction is exercised in the case of an unintentional violation of the Student Academic Integrity Code, the faculty member shall send written notification of the event to the dean (or appointed designee) of the college/school in which the offense has occurred. When the student is enrolled in another college/school, the dean who receives the notification will then notify the student's dean that the offense has occurred. Through this process, the university can monitor multiple occurrences of such errors of judgment by particular students.

2. Dean's Jurisdiction

   In all other circumstances, the following procedures will be observed:

   a. Faculty members reporting an allegation of dishonesty must do so within 10 working days of the date of discovery of the alleged offense. The report should be supported by such documentation as is appropriate and delivered to the college/school dean (or appointed designee).

   b. The college/school dean (or appointed designee) will promptly notify the student of the charge and will arrange a meeting to discuss the charge with the student. The dean (or appointed designee) will also notify the head of the department or unit in which the offense occurred, and the student's dean if the student is a member of another college/school, that an allegation has been made.

   c. At the meeting, the student will be presented with the charge and the evidence submitted by the faculty member. He/she will be advised of the procedures, including his/her rights, and given the opportunity to respond. The student may respond immediately or respond in writing within five working days. The signed document will become

additional evidence in the case. If the student fails to attend this preliminary meeting, the dean may proceed with the process as appropriate.

   d. Faculty members, at their discretion, may discuss the alleged case of dishonesty with the student before the case is adjudicated. However, faculty members are not to submit grades for the work in question or for the course until the case has been adjudicated. If the semester grades are due before the adjudication process is complete, a temporary grade of N will be assigned.

   e. When appropriate, the dean hearing the case (or appointed designee) will gather additional evidence from the student, the complainant and other concerned parties before the adjudication process.

   f. After reviewing the charges and the evidence, the dean hearing the case (or appointed designee) may dismiss the case or refer the case to the faculty member bringing the charge. For cases not dismissed or referred, the dean may assign a penalty. The dean may request a meeting with the student at any time.

Other Adjudication Issues

While the assignment of penalties is the province of the dean hearing the case, the faculty member making the charge may recommend a grading penalty or other sanctions.

If the student fails to attend a scheduled meeting regarding such changes, the date of which will be made known in advance to him/her, the college/school may hear the case in the student's absence or move for a continuance.

Legal counsel is not permitted at any point during the adjudication process.

The standard of proof for any instance of academic dishonesty will be clear and convincing evidence.

Penalties

Students are advised that violations of the Student Academic Integrity Code will be treated seriously, with special attention given to repeat offenders.

1. In assigning a penalty, the dean will take into account both the seriousness of the offense and any particular circumstances involved.

2. After a second determination of guilt is established through formal review, a student may be suspended or dismissed.

3. Penalties for an academic offense may

include one or more of the following:

a. resubmission of the work in question

b. submission of additional work for the course in which the offense occurred

c. a lowered grade or loss of credit for the work found to be in violation of the integrity code

d. a failing grade of XF or denial of credit for the course in which the offense occurred

e. suspension for one or more academic terms, including the term in which the offense occurred

f. dismissal (for a specified term or permanently) from the university

4. The student may not withdraw from a course in which an infraction has been found and a penalty applied. No refund or cancellation of tuition fees will be permitted in such cases.

5. Penalties (a)–(c) are levied by the dean hearing the case only with the concurrence of the faculty member bringing the charge. Penalties (d)–(f) are levied by the dean hearing the case only with the concurrence of the student's dean as applicable. If consensus cannot be reached, the Vice Chancellor for Academic Affairs or his/her representative will adjudicate.

6. Penalties (d)–(f) will become a permanent part of the student's file maintained indefinitely by the Office of the Registrar, with appropriate notation indicating that there has been a violation of the Student Academic Integrity Code.

7. The student may petition to replace the XF grade that resulted from a (d) penalty with an F grade at graduation or at complete withdrawal time. For details, please refer to Appeal of an XF grade under Student Petitions and Appeals.

Suspension and Dismissal

The decision as to whether suspension or dismissal is appropriate in a given instance will necessarily depend on the circumstances of each case.

Suspension

Suspension is effective for not less than the term in which the sanction is taken or for not more than one calendar year. The length of a suspension is to be specified precisely at the time the action is taken.

A student who is suspended is entitled to resume studies in the same college/

school at the conclusion of the period of suspension, provided he/she has satisfied all requirements imposed by the dean hearing the case when the original action was implemented. The student will then need to submit the Reactivation Form to the Office of the Registrar. The form is available at www.aus.edu/registration.

Dismissal

Dismissal is a penalty invoked in cases of serious infractions of rules and regulations and when circumstances indicate that a student's association with the university should be terminated in the interest of maintaining the standards of behavior and conduct normally expected in a university community. In instances where the dean hearing the case has recommended dismissal, the Academic Appeals Review Committee will review the case and make a recommendation to the Vice Chancellor for Academic Affairs.

A student who has been dismissed but who has not been denied the privilege of returning to the university later may apply for readmission through the Office of Enrollment Management/Undergraduate Admissions after the expiration of one calendar year. Action will be taken on the application after a total re-evaluation of the record and in accordance with the admission and readmission practices in effect at the time of application. A readmitted student is governed by the admission requirements in effect at the time of readmission.

Note: *The calendar year that must elapse before a Reactivation Form or an application for readmission may be considered is interpreted as beginning on the final day of the term during which the disciplinary action was taken.*

Notification of Penalty

The dean hearing the case (or appointed designee) will notify the student in writing of the findings and, as appropriate, the assigned penalty. The faculty member bringing the charge will also be notified in writing of these results, as will the head of the department in which the case occurred and the student's dean if the student is enrolled in another college/school.

In addition to the above and for

penalties (d-f), the following notification process will apply:

• For penalty (d), the dean hearing the case will inform the Office of the Registrar.

• For penalty (e), the dean hearing the case will inform the student's dean who will, in turn, notify the Office of the Registrar as well as the Vice Chancellor for Student Affairs and take the appropriate academic action.

• For penalty (f), the dean hearing the case must inform the Director of Graduate and Undergraduate Programs in writing within five working days of the date of the notice. The Director of Graduate and Undergraduate Programs will refer the case to the Academic Appeals Review Committee, which will review it and make a recommendation to the Vice Chancellor for Academic Affairs. The Vice Chancellor for Academic Affairs will inform the dean hearing the case, the Director of Graduate and Undergraduate Programs, the Office of the Registrar and the Vice Chancellor for Student Affairs of the final decision.

• For record keeping of documents pertaining to the infringement of the academic integrity code, please refer to the appropriate section under Student Records herein.

Appeal of Penalty

In cases concerning notation to the student's record [penalties (d)–(f)], students will be notified in writing of their right of appeal. Appeals must be made in writing within five working days of the date of notice. Appeals are limited to grounds of excessive sanction, improper procedure and unavailability of relevant evidence at the time of the original administrative or code of conduct review panel meeting. Appeals must be submitted to the Director of Graduate and Undergraduate Programs. The Office of the Vice Chancellor for Academic Affairs will review the appeal and may consult the case's written record, the appeal request and any person involved in the adjudication process. Following the review, the Office of the Vice Chancellor for Academic Affairs may deny the appeal or may lower the sanction or remand the matter to the appropriate dean in the event of improper procedure or new evidence.

Student Records

Custody of Records

All transcripts and other documents students submitted from other institutions at admission time or later are the property of AUS, and, as such, are part of the student record that is under the custody of the Office of the Registrar. The university is not required to provide (or allow the making of) copies of these documents. Transcripts submitted to AUS for admission or credit transfer cannot be returned to the student or forwarded to other institutions.

Student Privacy Rights

Students have the right to:

- inspect and review information contained in their educational records. The university is not required to provide (or allow the making of) copies of these documents. The university allows, nevertheless, copy making of very specific documents included in a student's record. Copies of such documents will only be provided upon submission of a signed request from the student concerned. The request form is available at www.aus.edu/registration. A nominal fee applies.

- request changes or updates to their personal data. Registered students are given access to update their emergency telephone/mobile contact numbers and their personal e-mail address via the secured online student information system. For mailing address updates, an official request signed by the student concerned has to be submitted to the Office of the Registrar/Student Records section. The form is available at www.aus.edu/registration.

- consent to disclosure, within the extent of UAE federal and local laws, personally identifiable information from education records

The university reserves the right to disclose students' records to the immediate guardian of the student and to the private or public authority sponsoring the student. For further information on students' records, please check with the Office of the Registrar/Student Records section.

Academic Transcripts

A permanent record reflecting the academic achievements of each student who registers at the university (also referred to as a "transcript") is maintained by the Office of the Registrar. At the end of every semester, the Office of the Registrar issues updated transcripts for all the students who were registered for the semester. These transcripts are mailed to every individual student. These copies are not official and are only intended to update students on their academic achievement. Students may also access their transcripts through the secure online student information system. Students are encouraged to review their records online periodically.

Students may obtain copies of their academic transcripts at AUS from the Office of the Registrar. Transcripts will only be released with a signed request from the student concerned. The request form is available at www.aus.edu/registration. A nominal fee applies. The university will issue only complete transcripts, not parts of the student record.

An explanation of the university's grading system is included in the Grades and Academic Standing section herein. A brief explanation is also provided on the back of every official transcript.

Records on Academic Integrity Code Violations

The retention of records on academic integrity code violations is governed by the following:

- In cases where penalties (a)-(c) were assigned: All records pertaining to the infringement of the code are maintained by the student's college/school. If the student does not graduate from AUS, the records are retained for five years after the student's last registration. If the student graduates from AUS, these records are destroyed by the college/school upon the student's graduation.

- In cases where penalties (d)-(f) were assigned: The notation indicating a violation of the Student Academic Integrity Code will become a permanent part of the student's file maintained indefinitely by the Office of the Registrar. Upon graduation, all records pertaining to the violation of the Student Academic Integrity Code that were maintained by the college/school will be transferred to the Office of the Registrar for permanent retention. If the student does not graduate from AUS, all records pertaining to violations of the academic integrity code will be retained by the college/school for five years after the student's last registration at AUS and then transferred to the Office of the Registrar for permanent retention.

Records on Student Academic Integrity Code violations maintained by the Office of the Registrar are subject to university regulations concerning the confidentiality of student records. Upon written request, students have the right to inspect their records related to violations of the integrity code.

Enrollment Verifications and Certifications

Students may need different types of official certificates pertaining to their academic record at AUS. These certificates must be requested from the Office of the Registrar using the request forms available at www.aus.edu/registration. A nominal fee applies.

Registration and Course Information

Registration

Orientation Program

Prior to registration, academic orientation is held for all new students to introduce them to the university's general academic regulations, policies and support services. In addition, each college/school has an orientation to familiarize students with its specific regulations and assist them with the registration process. The Office of Student Affairs also introduces university life through campus tours and visits, meetings, lectures, demonstrations and other activities. The program is aimed at helping new students adjust to AUS, meet other new students and speak with senior students who assist with the orientation program.

Attendance at these programs is mandatory for all new students.

Academic Advisors

Academic advising is an essential element of the educational process. American University of Sharjah requires advisor-student conferences at least once per semester. Students are assigned academic advisors who help them in selecting their courses of study and in planning their schedules. Their advisors also approve their schedules each semester. However, students are responsible for selecting their courses, meeting course prerequisites and adhering to the most recent university policies and procedures. The advisor assists the student in obtaining a well-balanced education and in interpreting university policies and procedures. Students may also consult faculty members, department or program heads, program coordinators and associate deans or deans. Students on academic probation are provided closer advising and guidance by the Academic Achievement Center.

Registration Process

Before the registration period begins, the Office of the Registrar posts the registration guide at www.aus.edu/registration. The guide provides pertinent information and indicates the registration steps along with the place, date and time for each step. A continually updated list of courses offered is posted on the online student information system as well. Students should carefully read the registration guide as they prepare for registration and meet with their academic advisor.

Registration involves three main steps:

1. advisement and consultation
2. selection and registration of courses
3. payment of fees

Continuing and returning students register through the website. New students and transfer students register with their respective colleges/schools. Exchange, non-degree, study abroad, transient and visiting students register with the Office of the Registrar. Registration by way of proxy is not permitted.

New and transfer students must ensure that all documents required for finalizing their admission, particularly those indicated in the letter of admission, are submitted to the Office of Enrollment Management before registration begins. Transfer students must complete their transfer file and be awarded transfer credits before the end of their first semester at AUS.

Student Course Load

A student admitted to and enrolled in a degree program usually registers for 15 to 19 credits each semester. The required minimum load for all full-time students is 12 credits per semester, and the maximum load is 19 credits per semester. A student can register for up to seven credits (two courses) in a six-week summer term and up to three credit hours in a three-week summer term.

The degree programs have been designed to be completed normally in four years, except for architecture, which is a five-year program. However, some students may require additional time. The proposed sequence of study for every program is intended to assist students in planning their semester course load so that they complete their degree requirements within the normal time limit of their respective programs.

Full-Time Students

To be considered full-time, a student must carry a minimum course load of 12 credits per semester.

Part-Time Students

Enrollment as a part-time student is normally restricted to the following:

- AUS staff members who are pursuing a degree (approval of the employee's director or vice chancellor is required)
- those who need fewer than 12 credits to complete an undergraduate degree
- those with special medical conditions
- those who are moved to part-time status by their Academic Achievement Advisor
- those who are enrolled as exchange, non-degree, study abroad, transient or visiting students

Freshman Course Load

Freshman students are normally restricted to five courses per semester to allow time for their adjustment to the learning environment of AUS. Freshman students enrolled in two or more preparatory courses (e.g., MTH 001, WRI 001, etc.) in a semester should register for a maximum of 13 credits.

Overload Students

A graduating senior student with a cumulative GPA of 3.25 or higher may secure the permission of his/her dean to register for up to 21 credits in the semester of graduation. All credits exceeding 16 credits will require a supplemental fee.

Auditing Courses

An AUS student who wishes to attend a course but who does not wish to participate, take examinations, receive a final grade or receive credit for the course may register to audit the course with the permission of the instructor.

The instructor may establish standards of class participation and attendance that must be met if a student is to remain in audit status. Registration is managed through the Office of the Registrar. In courses with enrollment limits, priority is given to students registering for credit. Changes to or from audit status must be made before the last day of the add and drop period. Tuition and fees for audit students are the same as those for students registering for credit. The audited course will appear on a student's transcript as audited.

With the permission of the instructor, senior students (90 and above credits) with a minimum CGPA of 3.00 can audit a graduate course in their field. Students are charged based on the undergraduate tuition structure.

Registration in Independent Study Courses

Independent study is the umbrella term used to label two types of independent work: an independent course and directed study.

Students are allowed to take one independent study. A second independent study, for a maximum total of eight credit hours used toward the graduation requirements of one degree, could be approved by the student's associate dean for graduation purposes only.

Students interested in registering for an independent study course must complete the Independent Study Application form available at www.aus.edu/registration/all_forms.php and submit it to the Office of the Registrar during the early registration period of the upcoming semester/term. Registration is handled by the Office of the Registrar. Tuition and fees for independent study courses are the same as those for other courses. Independent study courses are graded and appear on the student's transcript.

Independent Course (1 to 4 credits)
An independent course is listed in the catalog but offered in an independent study format. The course is coded using the course number in the catalog.

Directed Study (1 to 4 credits)
A directed study is an investigation under faculty supervision beyond what is offered in existing courses. Directed study courses are numbered as 396 or 496 courses. The three-letter course prefix reflects the field of study of the course. Directed study courses should not be used to meet major requirements, minor requirements, concentration requirements or general education requirements. In order to be eligible to pursue a directed study, students must have completed a minimum of 75 credit hours with a minimum CGPA of 3.00.

Registration in Graduate-Level Courses

With the approval of their associate dean and the relevant graduate program director, senior undergraduate students with a minimum CGPA of 3.00 can register for up to two graduate-level courses while enrolled at the undergraduate level. Registration is managed through the Office of the Registrar. In courses with enrollment limits, priority is given to graduate students. Students are charged based on the undergraduate tuition structure.

Graduate-level courses taken while at the undergraduate level cannot be used toward the completion of graduate program degree requirements and cannot be repeated for credit toward an AUS graduate degree.

AUS Students Studying Abroad

AUS offers students the opportunity to study abroad at other institutions during a regular semester and gain full AUS course credit. The Study Abroad Program aims to provide students the opportunity to immerse themselves in a different culture, to enhance their language skills, to build international work connections and to gain further insight into their field of expertise. With this in mind, students may choose to attend accredited institutions that provide learning experiences similar to those offered by AUS. Of particular interest might be institutions with which AUS has semester exchange programs.

Note: *Normally, students are expected to complete their last semester in residence at AUS unless they are registered in an AUS-recognized semester exchange program.*

Requirements
Students who wish to study abroad during a regular semester must have a cumulative GPA of 2.50 and have completed at least 59 credits (junior standing) of undergraduate courses in residence at AUS. Courses taken at AUS where D and/or F grades were achieved cannot be repeated in the context of a study abroad program for transfer of credits.

Interested students must submit the AUS Study Abroad Program form, available from the Study Abroad Department or at www.aus.edu/studyabroad, to the Study Abroad Department. Students should be aware that further admission requirements might exist at study abroad or semester exchange institutions.

The approved AUS Study Abroad Program form must be deposited at the Office of the Registrar prior to registering with the host institution. Failure to do so will result in no credit being awarded for the work completed abroad.

Registration
AUS students who plan to study abroad at a university with which AUS has a semester exchange program must register with the AUS Office of the Registrar in addition to registering with the study abroad host university.

AUS students who choose to study abroad at a university of their choice and not in the context of a semester exchange program register directly with the study abroad host university.

Transfer of Credits
Credits earned in study abroad courses will transfer provided the following conditions are met:

• The student submits to the AUS Office of the Registrar an official transcript indicating that the student met the course's passing grade requirement, as indicated on the study abroad form.

• The student was in good academic standing at AUS prior to taking the study abroad courses.

For further information on studying abroad, please contact the Study Abroad Department at studyabroad@aus.edu.

Summer Courses outside AUS

Requirements

An enrolled student is eligible to apply to take courses at another college/university during the summer with the aim of transferring credits to AUS provided to following conditions are met:

- The student is in good academic standing.
- The host university is located outside the UAE.
- The host university is recognized by the UAE Ministry of Higher Education and Scientific Research.
- The host university provides learning experiences similar to those offered by AUS.
- The language of instruction of the course(s) taken at the host university is English, except for language courses other than the English language.

Students taking summer courses outside AUS must adhere to the maximum seven-credit-hour load for a six-week summer term taken at AUS. For summer terms of a different time duration, students will be eligible to transfer not more than the equivalent credit hours of the six-week summer term at AUS, provided course equivalency was established and approved as per the above.

Courses taken at AUS in which D and/or F grades were achieved cannot be repeated for transfer of credit as summer courses outside AUS.

Students must complete the Permission to Take Courses Outside AUS form available at www.aus.edu/registration and submit it to the Office of the Registrar prior to registering for courses at the host institution. Failure to do so will result in no credit being awarded for the transfer work.

For information on visas and other related issues, please contact the Study Abroad Department at studyabroad@aus.edu.

Transfer of Credits

Credits earned in summer courses taken outside AUS will transfer provided the following conditions are met:

- The student submits to the AUS Office of the Registrar an official transcript indicating that the student met the course passing grade requirement, as indicated on the permission form.
- The student was in good academic standing at AUS prior to taking the summer courses to transfer.

Internship Registration

A number of degree programs at AUS require students to successfully complete one or more internships. Internships do not carry academic credit, are charged a registration fee and are graded as Pass/Fail. Internships that contribute to meeting graduation requirements must be a minimum of five consecutive weeks with a minimum of 200 work hours.

To be eligible to pursue an internship, students should normally have completed a minimum of 75 undergraduate credit hours (excluding credits earned in IEP or in preparatory courses). Colleges/schools may have higher minimum credit hour requirements. Approval is granted by the internship coordinator within the college/school.

Students must be registered for internships no later than the last day of the add and drop period of the semester/term in which they plan to complete the internship.

Internships are normally completed during the summer before the final year of study. Students pursuing a summer internship may not register for courses during the same summer term. With the approval of the associate dean of the student's college/school, a student who meets the eligibility requirements may pursue an internship during a fall or spring semester, provided the student's course load does not exceed six credit hours.

Exchange, Non-degree, Study Abroad, Transient and Visiting Student Registration

See the corresponding sections under Admission to Undergraduate Studies.

Tuition and Fees

Please refer to the Tuition, Grants and Scholarships section of this catalog for specific information on tuition, fees, payment methods and deferment of tuition and fees.

Add and Drop

Students are allowed to add and/or drop courses at the beginning of every semester/term. The add and drop period begins on the first day of class. The duration of the add and drop period may vary, and the actual dates are published in the registration guide for each semester/term, which is available at www.aus.edu/registration.

Courses dropped during the add and drop period are not recorded in a student's transcript. The semester tuition is recalculated accordingly with no fee penalty charged. Students interested in adding or dropping courses should first consult with their respective advisors.

Attendance and Lateness

Attendance and participation in all class, studio, recitation, workshop and laboratory sessions are essential to the process of education at AUS. Students benefit from the lectures and discussions with their instructors and fellow students. For this reason, students are expected to attend class regularly. Lateness or absence hinders progress for the individual and the class and affects the student's grade.

University guidelines for lateness and attendance are as follows:

- Any absence may affect the student's grade.
- Instructors need not give substitute assignments or examinations to students who miss classes.
- Three occasions of lateness count as one absence. Lateness is defined by the individual instructor.

- In the event a student misses 15 percent of the sessions in a class for any reason, the instructor may initiate withdrawal of the student from the course. Up until the 10th week of classes, a grade of W is assigned to the student for the specific course. Beyond the 10th week of classes, a grade of WF will be assigned. Instructors are to keep attendance records and to draw students' attention to attendance requirements noted in the course syllabus.

- The specific application of the attendance guidelines is at the instructor's discretion.

Course Withdrawal

Students are permitted to withdraw from courses without penalty by submitting the Withdrawal Form (available at www.aus.edu/registration). The student must submit the form in person to the Office of the Registrar.

Students are expected to maintain a minimum load of 12 credits per semester. Students on AUS financial grants/scholarships must maintain full-time status. For more details, refer to the Tuition, Grants and Scholarships/Grants and Scholarships section.

A student may not withdraw from a course in which an academic integrity infraction has been found and a penalty applied.

Withdrawal from courses must occur no later than the end of the 10th week of classes. A grade of W will be recorded on the transcript for the course from which the student has withdrawn. A W grade does not impact the student's GPA.

As of the 11th week of classes and up to the last day of classes, a grade of WF will be recorded for those who withdraw from a course. The student will receive 0.00 grade points (F grade) for the WF, and this will be used in calculating the student's GPA. Furthermore, as of the 11th week of classes, faculty members may assign a WF for excessive absence or no show.

If a student with a documented medical condition (e.g., operation, hospital stay, serious illness, etc.) is withdrawn from a course after the established withdrawal deadline, the student may submit a Student Petition Form (available at www.aus.edu/registration) to the Office of the Registrar with the appropriate original medical documents. The Office of the Registrar will verify the claims and approve the change of status from a WF to a W.

Withdrawal from the University

In the event a student wishes to withdraw from the university, he/she must submit the Complete Withdrawal Form to the Office of the Registrar in person. The form is available at www.aus.edu/registration.

Depending on the time of withdrawal, a grade of W or WF will be recorded for all the courses the student was registered for in the semester of withdrawal. In addition, the refund schedule outlined in the table below will apply.

Withdrawal from the University*
One week before the first day of classes
100% refund excluding the seat reservation deposit of new students
Before the end of the first week of classes
100% refund excluding non-refundable deposits
During the second week of classes
50% refund of tuition
During the third week of classes
25% refund of tuition
After the third week of classes
0% refund
Refunds for summer term withdrawals are prorated.

Reinstatement

A student in good academic standing is allowed no more than one semester of leave. To resume studies afterwards, the student must submit a Reactivation Form (available at www.aus.edu/registration) to the Office of the Registrar one month prior to registration.

Students who were on probation prior to complete withdrawal must petition for reinstatement to the Office of the Registrar one month prior to registration. The Student Petition Form is available at www.aus.edu/registration/all_forms.php.

Students seeking reinstatement following academic dismissal are required to file a Reinstatement Petition form with the Academic Achievement Center before the official deadline of the corresponding registration semester, as published by the Center. The Reinstatement Petition and the deadlines for submitting it are available at www.aus.edu/academic/academic_achievement.php. Reinstatement may only be made on the basis of extraordinary circumstances. The merit of each case will be determined by the Academic Achievement Center's Reinstatement Committee.

Students in good standing or on probation who leave AUS for two or more consecutive semesters must submit a new application for admission to the Office of Enrollment Management/Undergraduate Admissions. Academically dismissed students who have been away longer than one semester may not apply for reinstatement.

Courses taken at another institution during this interim period will not be transferred.

Course Information

Course Code

Every course in each discipline or field of study offered by the university is represented by a three-letter prefix followed by a three-digit number indicating the level of the course content, e.g., BIO 260 Genetics.

In this example, BIO is the course prefix (which represents biology) and 260 is the course number. This particular course is a sophomore-year course in biology (denoted by the 200 level). This course is more advanced than 100-level introductory courses such as BIO 103 Introduction to Life Sciences.

Normally, 100-level course numbers denote freshman-level courses, 200-level course numbers denote sophomore-level courses, 300-level course numbers denote junior-level courses, and 400- or 500-level course numbers denote senior-level courses. Courses with a 00X number are preparatory courses. They are intended for students with a deficiency in a specific subject matter. These courses do not count toward graduation.

Course Credit Hours

All courses are valued in credits. Normally, each credit hour represents 50 minutes of class instruction per week each semester, 120 to 180 minutes of laboratory experience per week each semester, or one or two 50-minute recitation sessions per week each semester. Design courses and visual and performing arts courses may be weighted differently.

The numbers in parentheses following the title of a course indicate the course contact hours distribution and the course credit information. The first digit in parentheses refers to the number of class contact hours per week the course requires, the second digit denotes the number of laboratory or practice hours required weekly, and the third digit refers to the number of credits the student will receive upon successfully completing the course. Below is an example:

CHM 101 General Chemistry I (3-3-4)

In this example, CHM 101 has three contact hours per week, three lab hours, and the student who successfully completes the course receives four credit hours.

Note: *Credits earned for preparatory courses do not count toward graduation requirements*.

Course Descriptions and Syllabi

Except for non-recurring topics courses (also referred to as special topic courses), descriptions of courses offered by AUS are listed in the Course Descriptions section of this catalog and on the university website. Courses are grouped by course subject and sorted by course code within the college/school offering them. Descriptions of non-recurring topics courses are made available during registration in the college/school offering the course.

Course syllabi are available from the individual course instructor, department or program office. They include a course description, course goals and objectives, content and topics, instructional material and resources, the method of evaluation, the meeting time and place, credit hours and minimum background requirements for the course.

Course Prerequisites

Many courses above the introductory level require a minimum background of knowledge, as indicated by prerequisite courses cited in individual course descriptions. Titles and numbers are those of AUS courses. Equivalent courses satisfactorily completed at other institutions may also meet prerequisite requirements by transfer credit. Students should consult the head of the appropriate department and the Office of the Registrar for more information.

Students are responsible for having the required competence when entering a class. Courses for which a grade below C- was received do not satisfy prerequisite requirements.

In general, courses should be taken in order of increasing difficulty.

In addition to prerequisites, certain courses also have corequisites, prerequisites/concurrent and/or other criteria. This information is noted immediately following the description of the course.

Courses Offerings and Schedules

Courses are offered at the discretion of the department. Students should check with the respective academic departments for information on when courses will be offered.

Except for laboratory, workshop, design, visual arts and performing arts courses, classes ordinarily meet three days per week in 50-minute sessions or two days per week in 75-minute sessions during regular semesters. Equivalent meeting time is scheduled for summer terms.

Independent courses, projects, internships and similar kinds of study opportunities meet according to the special arrangements of the college/school, department or faculty members concerned.

Fields of Study

Degree Offerings

American University of Sharjah has four colleges/schools that offer both undergraduate and graduate degree programs. Undergraduate degree programs are listed below. Graduate degree offerings are listed in the *AUS Graduate Catalog*.

College of Arts and Sciences
- Bachelor of Arts in English Language and Literature
- Bachelor of Arts in International Studies
- Bachelor of Arts in Mass Communication
- Bachelor of Science in Biology
- Bachelor of Science in Chemistry
- Bachelor of Science in Environmental Sciences
- Bachelor of Science in Mathematics

College of Engineering
- Bachelor of Science in Chemical Engineering
- Bachelor of Science in Civil Engineering
- Bachelor of Science in Computer Engineering
- Bachelor of Science in Computer Science
- Bachelor of Science in Electrical Engineering
- Bachelor of Science in Mechanical Engineering

School of Architecture and Design
- Bachelor of Architecture
- Bachelor of Interior Design
- Bachelor of Science in Design Management
- Bachelor of Science in Multimedia Design
- Bachelor of Science in Visual Communication

School of Business and Management
- Bachelor of Arts in Economics
- Bachelor of Arts in Public Administration
- Bachelor of Science in Business Administration with majors in accounting, economics, finance, management, management information systems and marketing

Declaration of a Major

Normally, students declare their major by applying to a particular college/school and to a major within that college/school. If a student is admitted with an undeclared major, he/she must formally choose and declare a major by the end of his/her second year (sophomore year) in order to continue as an AUS student.

To declare a major, the student must submit the Change of Major Form to the office of the associate dean of the college/school housing the major of his/her choice by the last day of the 12th week of classes of the fall or spring semester. This form is available from the Office of the Registrar. Change of Major forms will not be accepted during a summer term. Forms received by the Office of the Registrar by the end of the add and drop period will be effective as of the following semester/term.

A change in major might entail a change in a student's catalog. Please refer to the Catalog section under Graduation Requirements for more details.

Transferring from Non-Degree to Degree Status

Students wishing to transfer from non-degree to degree status must have completed 15 credits with a minimum cumulative GPA of 2.00. Moreover, a request must be submitted to the Office of Enrollment Management/ Undergraduate Admissions for a change of status. For application deadlines, see the Admission to Undergraduate Studies section.

Students may request to have their non-degree credits applied toward the degree program. The university rules and regulations governing transfer courses and credits will apply.

The graduation requirements will be determined by the catalog that is effective when the student joins a major or the catalog effective the semester of the student's graduation.

Declaration of a Double Major

Students may select to enroll in two separate majors. To declare a second major, a student must complete the Minor/Double Major Form (available at www.aus.edu/registration) and submit it to the office of the associate dean of the college/school housing the second major by the last day of the 12th week of classes of the fall or spring semester. These forms will not be accepted during a summer term. Forms received by the Office of the Registrar by the end of the add and drop period will be effective as of the following semester/term.

Senior students should declare their second major no later than the end of the 10th week of classes of the semester preceding their graduation semester.

One of the two majors must be designated as the primary major, but the student's rights and responsibilities are the same in both majors. The advisor of the primary major will serve as the student's registration advisor. The student's degree and transcript will indicate all majors completed at the time of graduation.

For graduation information, please refer to Double Major Requirements under the Graduation Requirements section.

Change of Major

Students seeking to change their major within their college/school or to change their college/school must complete the Change of Major Form available from the Office of the Registrar. Requests for a change of major or change of college/school should be submitted to the office of the associate dean of the college/school housing the new major by the last day of the 12th week of classes of the fall or spring semester. Change of Major forms will not be accepted during a summer term. Forms received by the Office of the Registrar by the end of the add and drop period will be effective as of the following semester/term.

To be eligible for a change of major, a student must meet the requirements for admission to the new major. For details on the admission requirements of a major, please refer to the corresponding section under the college/school housing the major.

A change in major might entail a change in a student's catalog. Please refer to the Catalog section under Graduation Requirements for more details.

Minor Offerings

Listed below are the minors offered by the university. Detailed information about the various minors is given in the catalog section of the department offering the minor (refer to the index of this catalog).

College of Arts and Sciences
- Minor in Actuarial Mathematics
- Minor in American Studies
- Minor in Applied and Computational Mathematics
- Minor in Arabic Language and Literature
- Minor in Biology
- Minor in Education
- Minor in English/Arabic Translation
- Minor in English Language
- Minor in English Literature
- Minor in Environmental Policy
- Minor in Environmental Sciences
- Minor in Governmental Studies
- Minor in History
- Minor in International Studies
- Minor in Mass Communication
- Minor in Philosophy
- Minor in Psychology
- Minor in Women's Studies

College of Engineering
- Minor in Aerospace Engineering
- Minor in Biomedical Engineering
- Minor in Computer Engineering
- Minor in Computer Science
- Minor in Electrical Engineering
- Minor in Engineering Management
- Minor in Mechanical Engineering
- Minor in Mechatronics Engineering
- Minor in Petroleum Engineering
- Minor in Software Engineering and Security

School of Architecture and Design
- Minor in Architectural Studies
- Minor in Design Management
- Minor in Interior Design
- Minor in Landscape Architecture
- Minor in Urban Design
- Minor in Urban Planning

School of Business and Management
- Minor in Accounting
- Minor in Economics
- Minor in Finance
- Minor in International Business
- Minor in Management
- Minor in Management Information Systems
- Minor in Marketing
- Minor in Public Administration

Declaration of Minors

To be eligible to apply for a minor, students normally must have completed a minimum of 30 credits of course work and be in good academic standing. A student cannot declare a minor in his/her major field of study. A student cannot pursue more than two minors.

To declare a minor, a student must complete the Minor/Double Major Form (available at www.aus.edu/registration) and submit it to the office of the associate dean of the college/school housing the minor by the last day of the 12th week of classes of the fall or spring semester. Minor/Double Major forms will not be accepted during a summer term. Forms received by the Office of the Registrar by the end of the add and drop period will be effective as of the following semester/term.

Senior students should declare their minor no later than the end of the 10th week of classes of the semester preceding their graduation semester.

A student may drop a minor prior to graduation by submitting the Minor/Double Major Form to the Office of the Registrar no later than the end of the add and drop week of the semester of graduation.

Minors are noted on the student's transcript. They do not appear on the degree.

For information on completing a minor, please refer to Requirements for Minors in the Graduation Requirements section of this catalog.

Concentrations

Some majors allow students one or more areas of concentration. This option allows students more in-depth knowledge of a subject area. Please refer to the appropriate major section for relevant concentration requirements.

To declare a concentration, a student must complete the Change of Major Form and submit it to the office of their associate dean by the last day of the 12th week of classes of the fall or spring semester. Change of Major forms will not be accepted during a summer term. Forms received by the Office of the Registrar by the end of the add and drop period will be effective as of the following semester/term.

For programs where concentrations are a choice, students should declare their concentrations no later than the end of the 10th week of classes of the semester preceding their graduation semester.

Grades and Academic Standing

Examinations

Regular and common final examination schedules are published by the Office of the Registrar at www.aus.edu/registration. If a student is scheduled for more than two examinations in one day, or has a time conflict with common examinations, then the student must report to his/her associate dean by the end of week 11 of the semester to make the necessary adjustments to his/her schedule.

Grading System

The grade point average (GPA) is based on a four-point scale. Effective Fall 2009, the minimum passing grade for any course taken at AUS is C-.

The following grading system is used at AUS:

Excellent	
A	equals 4.00 grade points
A-	equals 3.70 grade points
Good	
B+	equals 3.30 grade points
B	equals 3.00 grade points
B-	equals 2.70 grade points
Satisfactory	
C+	equals 2.30 grade points
C	equals 2.00 grade points
C-	equals 1.70 grade points
Poor	
D	equals 1.00 grade points
Fail	
F	equals 0.00 grade points
Academic Integrity Violation Fail	
XF	equals 0.00 grade points
Withdrawal Fail	
WF	equals 0.00 grade points

Grades not calculated in the grade point average are:

AUD	Audit
AW	Administrative Withdrawal
I	Incomplete
IP	In Progress
N	No Grade
P	Pass; credits counted
TR	Transfer; credits counted
W	Withdrawal
WV	Waive; no credit

The grade appeals process is outlined in the Students Petitions and Appeals section herein.

Incomplete Grades and Make-Up Examinations

The work for a course must be completed by the end of the final exam day for that course. In the case of unexcused incomplete work, an F grade is given for the missing work and the course grade is computed accordingly. Only in exceptional cases, such as a compelling medical or other emergency certified in writing by a medical or other professional, is a student assigned an incomplete grade (I) in a given course. The instructor of the course will then process an Incomplete Grade Form through the college/school housing the course and submit it to the Office of the Registrar for final approval and implementation. The Incomplete Grade Form must be submitted within the final examinations period.

All incomplete work must be submitted before the end of the second full week of classes of the next regular semester. An I grade pending beyond this time limit will revert into either an F grade or the alternative grade indicated by the instructor of the course on the Incomplete Grade Form. It is the responsibility of the student to find out from his/her professor the specific dates by which requirements must be fulfilled.

Repeating Courses

A student may repeat any course, pending seat availability, up to two times without the approval of the student's academic dean. Students are allowed to repeat a preparatory course up to Sophomore I standing (less than 45 credits). Students are allowed to repeat WRI 101 or WRI 102 up to Junior I standing (less than 75 credits).

Intensive English Program (IEP) courses cannot be repeated after the student's matriculation into the major.

Effective June 2004, only the last entry of the repeated course is counted in the calculation of the cumulative GPA.

Students may not repeat at another institution a course they earned a D or F grade in at AUS with the aim of transferring credits.

Class Standing

The class standing of a student in a specific semester is determined by the number of credit hours the student has completed up until and excluding that semester. The following table summarizes the earned credit hours to class standing equivalencies:

Hours	Standing
0–29 credits	Freshman
30–59 credits	Sophomore
60–89 credits	Junior
90 and above credits	Senior

During the period of early registration, the credit hours of the courses in progress are considered when determining the class standing of a student who wishes to enroll in a course with a class standing restriction.

Grade Point Average

AUS uses two grade point averages: the semester grade point average (SGPA) and the cumulative grade point average (CGPA).

Quality Points

The quality points earned in a course are calculated by multiplying the grade

point value of the letter grade by the number of credits the course is worth.

The grades obtained in non-credit courses are not included in the computation of a grade point average. The grades of preparatory courses count in both the SGPA and the CGPA.

Effective June 2004, only the last entry of the repeated course is counted in the calculation of the CGPA.

Semester Grade Point Average (SGPA)

The SGPA is the grade point average of grades earned in a particular semester. It is calculated by dividing the sum of the quality points of courses taken in a particular semester by the total number of credits of the courses taken in that same semester.

SGPA=sum (quality points of courses taken in semester X)/sum (credit hours of courses taken in semester X)

Cumulative Grade Point Average (CGPA)

The CGPA is calculated by dividing the sum of the quality points of courses taken in all semesters by the total number of credits of all courses taken in all semesters.

CGPA=sum (quality points of courses taken in all semesters)/sum (credit hours of courses taken in all semesters)

Students who enroll in the Intensive English Program (IEP) prior to admission to the undergraduate level will have the last six credits of their IEP courses counted in the calculation of their undergraduate CGPA.

Effective June 2004, only the last entry of a repeated course is considered in the CGPA calculation.

Academic Standing

An undergraduate student's academic standing is determined by his/her CGPA. The academic standing of a student in the Intensive English Program (IEP) is determined by his/her SGPA.

Matriculated IEP students start their first undergraduate semester in good standing, regardless of their most recent IEP academic standing.

Good Standing

In order to be considered in good standing, an undergraduate student must maintain a CGPA of at least 2.00 out of 4.00. A student must be in good standing to be eligible for graduation.

A student in the IEP must achieve a SGPA of at least 2.00 to be considered in good academic standing.

Placement on Academic Probation

All undergraduate students are placed on academic probation at the end of a semester in which the CGPA falls below C (2.00). A full-time undergraduate student on probation for the first time is allowed to carry a load of five courses with a maximum of 16 credits. A full-time undergraduate student who is on a second consecutive probation may only register for four courses with a maximum of 13 credits. Thereafter, an undergraduate student must be in good academic standing (minimum CGPA of 2.00) to continue at AUS.

Undergraduate students placed on academic probation must sign a contract with the Academic Achievement Center. Probation students are expected to fulfill the obligations of their probation contract and meet on a regular basis with their academic achievement advisor.

IEP students will be placed on academic probation at the end of any semester in which their SGPA is below C (2.00).

Removal of Academic Probation

Undergraduate academic probation will be removed at the end of any semester in which the student attains a CGPA of 2.00. Students on probation are advised to repeat courses in which they have obtained failing grades.

IEP students on probation will have one semester in which to achieve a SGPA of 2.00 or higher. If they do so in the subsequent semester, they will be removed from academic probation.

Dismissal

An undergraduate student who fails to remove his/her probation by the end of the second semester on probation is academically dismissed and will not

be allowed to continue as a student at AUS.

An IEP student who fails to remove his/her academic probation by the end of the subsequent semester will be dismissed from the program.

For details on reinstatement after dismissal, refer to Registration/Reinstatement earlier in this section.

University Honors and Awards

Dean's List

The Office of the Registrar issues the Dean's List of honor students at the end of each semester. A notation of the Dean's List award is also added to the student's transcript in the corresponding semester. Dean's Lists are not issued for summer terms.

To be placed on the Dean's List, a student must

- have registered and completed a minimum of 15 credit hours in gradable courses in the semester
- have at least a 3.50 SGPA
- be in good academic standing
- have no failing grades in any of his/her courses during that semester
- have no incomplete grades
- have no disciplinary action against him/her

Chancellor's List

Students who have been placed on the Dean's List for both the fall and spring semesters of an academic year are further recognized by the Office of the Vice Chancellor for Academic Affairs. These students are placed on the Chancellor's List and are honored during the fall Honors Convocation of the following academic year.

Graduation Honors

The university grants Latin honors at graduation. For details on graduation honors, please see Graduation Honors in the Graduation/Graduation Procedures section.

Student Petitions and Appeals

Student Responsibility

All official university communications are distributed through the AUS-issued e-mail address. These are considered official notifications. Students are responsible for checking their AUS e-mail accounts and for responding to or acting upon messages accordingly.

Students should keep their own records of all transactions with the university (e.g., registration schedules and forms, grade reports, payment records, etc.). It is also advisable to keep copies of all tests, digital files, papers and so forth submitted in fulfillment of course work.

Petitions

Students may petition for exceptions to academic policies of the university. Petitions are processed through the Office of the Registrar. The Student Petition Form is available at www.aus.edu/registration.

Appeal of a Grade

Students are entitled to objective, professional evaluation of their academic work and to fair, equitable treatment in the course of their academic relationships with members of the faculty. These criteria are observed by the members of the AUS faculty as a part of their professional responsibilities.

A student who believes that he/she has a legitimate concern regarding an earned grade should discuss the matter with the professor responsible for the course. If a resolution cannot be reached, the student should contact the department head to discuss the matter. Every effort should be made to resolve the issue at the departmental level. If the dispute is over a final course grade and the matter cannot be resolved at the departmental level, the student may file a formal grade appeal with the college/school. Grade appeal requests must be submitted to the associate dean or designee no later than five working days after the last day of final examinations week. A grade appeal review will be conducted by the college/school, and the student and the professor responsible for the course will be notified of the outcome.

If a student believes that the grade appeal review by the college/school was affected by procedural errors or the lack of consideration of factors relevant to the case, then an appeal may be submitted to the Academic Appeals Review Committee through the Director of Graduate and Undergraduate Programs. The student must clearly state the reasons for the appeal and submit all relevant material to the Director of Graduate and Undergraduate Programs within five working days from the date of notice of the outcome of the grade appeal review by the college/school. The Academic Appeals Review Committee will consider the case to determine if due process was followed by the college/school and make a formal recommendation to the Vice Chancellor for Academic Affairs. The Office of the Vice Chancellor for Academic Affairs will notify the student and the college/school of the outcome.

Appeal of an XF Grade

In cases where a failing grade of XF was assigned to a course as a result of an academic offense penalty, a student may petition during the semester of graduation, or at complete withdrawal from AUS, to have the grade converted to an F on the academic transcript. The petition is submitted to the Office of the Registrar along with the Application for Graduation or the Complete Withdrawal Form. The final decision will be made by the Office of the Vice Chancellor for Academic Affairs.

The F grade resulting from an XF grade will be reverted back into an XF grade if the student reactivates his/her record at AUS.

Appeal of Other Academic-Related Issues

If a student wishes to discuss an issue pertaining to a course, an instructor or other academic-related issues, the student may direct his/her concern to the head of the department and/or dean of the college/school.

If, in the judgment of the dean of the college/school, the grievance is of such gravity or its resolution would have such impact on the welfare of students generally or on the conduct of professional responsibilities at the university as to require even more formal safeguards for the aggrieved student and faculty member involved, the dean will prescribe an appropriate procedure consonant with the university's mission or refer the matter to the Academic Appeals Review Committee through the Director of Graduate and Undergraduate Programs. Academic appeals requests must be submitted no later than the end of the first day of orientation week of the following semester.

Graduation

Graduation Requirements

Catalog

The graduation requirements for any individual student are normally determined by the catalog that was effective when the student matriculated in the major. A student may choose to follow the catalog effective for the semester when the student expects to complete his/her graduation requirements. To change catalogs, a student must file a Change of Academic Catalog Form (available at www.aus. edu/registration/all_forms.php) with the Office of the Registrar no later than the end of the 10th week of classes of the semester preceding the student's graduation semester. Every individual student is personally responsible for meeting all graduation requirements as detailed in his/her catalog year.

If a required course within a program changes its number of credits, then the number of credits required by the program for graduation may, at the discretion of the college/school, change by the same amount provided the minimum total number of credits for graduation is 120 and the CGPA is at least 2.00.

In case of substantial changes in course offerings, equivalent graduation requirements are determined by the dean of the student's college/school.

Caution: *The course offerings and requirements of American University of Sharjah are under continual examination and revision for improvement. This catalog is not a contract; it merely presents the requirements in effect at the time of publication and in no way guarantees that these requirements will not change. The student assumes full responsibility for compliance with all academic requirements.*

Courses

Courses are considered primary components of the curriculum and should not be split into individual credits to be counted in different areas of the degree audit.

Passing Grade Requirement

Effective Fall 2009, the minimum passing grade requirement for a course to meet any area of the graduation requirements and to satisfy any course prerequisites and/or corequisites is C-.

General Education Program

Mission Statement

Liberal studies form the core component of an AUS education. The General Education Program encourages intellectual discovery and critical reflection, promotes an appreciation of the various modes of human inquiry, and develops the knowledge and skills to succeed in and contribute to the Arab Gulf region and the world at large. The program fosters personal development by providing the foundation for lifelong engagement with the questions that shape individuals and societies. General education at AUS complements professional programs by offering opportunities for students to reflect on a diverse and increasingly interdependent world and their place within it.

Program Goals and Outcomes

The General Education Program provides students with opportunities to:

Goal A. Gain an understanding of the history and culture of the Arab World

Outcomes

- Explain the literary, artistic or scientific traditions of the Arab world
- Analyze the interdependencies between the Arab Gulf region, the Middle East and the world at large

Goal B. Examine the values and ideas that have shaped the Western intellectual and cultural traditions

Outcomes

- Describe intellectual and cultural traditions of the Western world
- Analyze and explain how Western traditions have influenced the present

Goal C. Explore how modes of human inquiry or expression enhances our understanding of culture

Outcomes

- Analyze cultural ideals and values in order to enhance self understanding and empathy for others
- Explain how societies are defined in relation to culture, nationality, race, ethnicity or gender
- Analyze and explain implied and expressed cultural values and attitudes in works of literature (literary perspectives)
- Analyze and explain the development of human institutions, ideas and social structures (historical perspectives)
- Analyze and explain philosophical works that present perspectives on social and cultural issues or problems (philosophical perspectives)

Goal D. Appreciate the roles of creative endeavors in enriching the human condition

Outcomes

- Identify, interpret and explain themes in works of literature or art (study of arts/literature)
- Explain how artistic and literary traditions have influenced individuals, cultures or societies (study of arts/ literature)
- Demonstrate an understanding of creative processes through the production of works of art or literature (engagement in arts/literature)
- Reflect upon and explain the decisions made during the creative process (engagement in arts/literature)

Goal E. Reflect on the consequences of individual and collective human action

Outcomes

- Explain the ways in which individuals, groups, institutions or societies behave and influence one another
- Analyze and describe how social, cultural, political or economic conditions affect individuals
- Analyze and explain human behavior in a variety of contexts

- Assess the ethical dimensions of actions and explain the relationships between individual moral choices and professional responsibility

Goal F. Recognize the value of the natural and physical sciences

Outcomes

- Explain how scientific hypotheses are conceived and tested
- Explain how basic scientific concepts are related to contemporary issues

Goal G. Employ quantitative reasoning as a conceptual tool for analysis and description

Outcomes

- Analyze data to identify quantitative and qualitative relationships
- Apply basic mathematical concepts
- Demonstrate proficiency in deductive reasoning and problem solving

Goal H. Develop the skills and abilities to thoughtfully seek information, critically analyze sources and clearly formulate complex ideas

Outcomes

- Communicate effectively in written English
- Communicate effectively in spoken English
- Evaluate written communication, identify key ideas and establish hierarchies of information
- Structure clear and persuasive arguments based on an analysis and presentation of evidence
- Analyze and explain how culture affects communication
- Identify and access information resources efficiently and effectively based upon the Association of College and Research Libraries standards

Goal I. Investigate how digital technology can facilitate inquiry and the advancement of knowledge

Outcomes

- Demonstrate how digital technology can contribute to understanding
- Demonstrate the ability to use digital technology to enhance analysis, description and presentation

General Education Requirements

Every student must successfully complete a minimum of 42 credits of the following general education requirements (GER) with a minimum grade of C- to graduate:

- Arabic heritage requirement (minimum of 3 credits)
- English language competency requirement (minimum of 12 credits)
- mathematics and/or statistics requirement (minimum of 6 credits)
- information literacy requirement (0 credits)
- computer literacy requirement (0 credits)
- science requirement (minimum of 6 credits)
- humanities and social sciences requirement (minimum of 15 credits)

A general education course cannot be counted twice in fulfilling the general education requirements.

Some general education courses may count toward the fulfillment of major requirements. In this case, the particular course cannot be counted as double credit for the fulfillment of the total credits required toward completing the degree requirements.

Students who transfer to AUS may satisfy parts or all of the GER by transferring approved credits from their previous institutions.

Arabic Heritage Requirement

The Arabic heritage requirement is designed to further students' understanding of the importance and relevance of the Arab culture and civilization in its historical development. Readings draw on Arabic texts from various literary genres and cultural topics.

All students must satisfy the Arabic heritage requirement by passing one of the following courses:

- ARA 101, ARA 102, ARA 201, ARA 202, ARA 206, ARA 207, ARA 302, ARA 303, ARA 304, ARA 310, ARA 312, ARA 320, ARA 321, ARA 401, ARA 402, ARA 405 and ARC 225 (for non-SA&D students)
- any other Arabic literature course, for a minimum of three credits, with the approval of the Dean of the College of Arts and Sciences prior to registering for the course

English Language Competency Requirement

All students must be able to write with a level of mastery equal to the demands of university course work. In addition, students need to acquire the critical reading and comprehension skills necessary for all their courses. To this effect, students are required to complete a minimum of 12 credits in ENG/WRI courses at the freshman level (100 level) or above. All matriculating students must take the English Placement Test to determine which WRI (writing) course they are to be placed into (001, 101 or 102). WRI 101 Academic Writing and WRI 102 Writing and Reading across the Curriculum should be completed in the first year (freshman) or before completion of 30 credits and cannot be repeated once the student is at the Junior II level. Students are strongly advised to complete their 12 credits in ENG/WRI courses by the end of their second year (sophomore) or before the completion of 60 credits. The specific courses needed for each program are established by the college/school housing that program.

Mathematics and/or Statistics Requirement

All students must have mastery of quantitative reasoning and university-level mathematical skills. Students are urged to satisfy this requirement by the end of the second year (sophomore). Students may satisfy the mathematics and statistics requirement by passing any two mathematics courses or one mathematics and one statistics course for a minimum of six credits. The specific courses needed for each program are established by the college/school housing that program. Preparatory MTH courses do not meet the mathematics and/or statistics requirement.

Information Literacy Requirement

Information literacy refers to a set of critical research skills that enable students to identify, locate, retrieve and evaluate information resources in a variety of formats. Information literacy competencies are gained through WRI 102, ENG 203 or ENG 204.

Computer Literacy Requirement

All AUS students must be computer literate. Although computer skills are taught within the context of many courses, students may be required to take additional specific computer courses depending on the requirements of their degree program. Courses satisfying the computer literacy requirement include BIS 101, DES 100, MCM 100, MTH 103, MTH 111, MTH 341, STA 201 and STA 202.

Science Requirement

All AUS students must have university-level knowledge of scientific reasoning and the experimental sciences. Students may satisfy the science requirement by passing any two courses at the freshman level (100 level) or above for a minimum of six credits from the disciplines of biology (BIO), chemistry (CHM), environmental sciences (ENV) and physics (PHY). The specific courses needed for each program are established by the college/school housing that program.

Humanities and Social Sciences Requirement

Participation in the global community and the global economy requires understanding of various cultures. Therefore, AUS students need to become thoroughly grounded in the humanities and social sciences to compete successfully in the global market. Students must satisfy the humanities (H) and social sciences (SS) requirement by completing at least 15 credits at the freshman level (100 level) or above of which at least six credits must be in the humanities and at least six credits must be in the social sciences.

Humanities (H)
- American studies (AMS)
- Arabic literature (ARA)
- education (EDU)
- English language and/or literature (ENG)*
- French (FRN)
- history (HIS)
- philosophy (PHI)
- theme courses (THM)

- women's studies (WST)

***Note**: ENG 203, ENG 204, ENG 207, ENG 208, ENG 225 and ENG 231 do not count as humanities.*

Social Sciences (SS)
- American studies (AMS)
- economics (ECO)
- education (EDU)
- geography (GEO)
- international studies (INS)
- political science (POL)
- psychology (PSY)
- sociology (SOC)
- theme courses (THM)
- women's studies (WST)

In addition, the following specific courses may be counted as humanities: ARC 225 (for non-SA&D students), ART 101, ART 203, DES 121, DES 122, DES 231, ENG 320, FLM 101, FLM 102, FLM 260, HRM 201, HRM 202, INS 205, MCM 102, MCM 320, MUS 101, MUS 200, MUS 201, MUS 202 and THE 101.

Major Requirements

Each student in a degree program must complete at least 36 credits in major and major-related courses. The specific major requirements of a major are listed under the corresponding program section in this catalog. Some major requirements may count toward fulfilling general education requirements; credits of such courses will not double count.

Double Major Requirements

To complete a double major, students must satisfy all the degree requirements of the two majors requested. Some courses may be counted toward the fulfillment of both degrees' requirements. The catalog in effect for the student's primary major will be followed for the degree audit of the second major.

Double Concentration Requirement

Certain degree programs offer students the choice of a double concentration.

In cases where the two concentrations have common courses, courses used to fulfill the requirements of the first concentration can double count toward the second concentration.

Because the second concentration is not a degree requirement, it is considered a free choice of the student. As such, courses used toward the second concentration can double count as free electives.

Minor Requirements

Most minor programs consist of a minimum of 18 credits including at least 50 percent of the credits in courses at or above the 300 level in the discipline of the approved minor. At least six credits of the courses at or above the 300 level in the discipline must be taken in residence at AUS. Fifty percent of all credits required for the minor must be completed in residence at AUS.

Students must meet the prerequisite requirements for courses required for the minor.

The catalog in effect for the student's major will normally be followed for the audit of the minor. If the minor is not listed in the student's designated catalog, then the first catalog in which the minor is listed will be applied. Graduation requirements for both the major and the minor must be completed at the same time. The minimum cumulative GPA for minor courses is 2.00.

For those programs offering a minor, the specific course requirements constituting a minor are listed under the corresponding program section in this catalog.

All courses used for the major and/or the double major degree requirements may also be used toward the minor. To complete an additional minor, students must satisfy all the requirements of the two minors.

Free Electives Requirement

To satisfy the free electives requirement, students must complete at least two courses with a minimum of six credits of free electives. Courses taken to satisfy a double concentration requirement can

count toward free electives. Preparatory courses (i.e., IEP courses, preparatory 00X courses) do not fulfill the free electives requirement. Some colleges/schools may restrict the choice of free electives. For more details, please refer to the degree requirements section of the corresponding program section later in this catalog.

As of Fall 2009, a grade of C- or higher is required for any course taken to satisfy the free electives requirement. Courses completed with D grades prior to Fall 2009 will meet the free electives graduation requirement.

Internships

Internships that contribute to meeting graduation requirements must be a minimum of five consecutive weeks with a minimum of 200 work hours. Internship offerings and requirements are listed under the various program requirements.

For information on internship registration, please see Registration and Course Information/Internship Registration earlier in this section of the catalog.

Graduation Residence Requirements

Candidates for the bachelor's degree are expected to complete their last semester in residence at the university unless registered in an AUS-recognized semester exchange program. A minimum of 36 credits of 300- and/or 400-level course work must be successfully completed in residence at AUS to obtain a bachelor's degree.

Transfer students must successfully complete at least 50 percent of the required credits for a degree in residence at AUS.

Time Limit on Duration of Study

Regardless of the catalog by which the student's graduation requirements are governed, all degree requirements must be completed within eight years of admission to AUS as an undergraduate student or matriculation from IEP, inclusive of any leave.

Academic Standing Requirement

A student must be in good academic standing to be eligible for graduation.

Graduation Procedures

Participation in the Commencement Ceremony

The university holds two commencement exercises: a fall commencement ceremony at the end of the fall semester and a spring commencement ceremony at the end of the spring semester.

Prospective candidates for graduation in a summer term or a fall semester are eligible to participate in the corresponding fall commencement ceremony. Likewise, prospective candidates for graduation in a spring semester are eligible to participate in the corresponding spring commencement ceremony.

Students registered at the 11th week of a semester for courses/project/internship necessary to complete their degrees may participate in commencement at the end of that semester.

Students who do not wish to participate in the commencement exercises of their semester of graduation must complete an Absentia Form available at www.aus.edu/registration or www.aus.edu/commencement. Absentia graduates are not eligible to participate in another semester commencement ceremony.

Application for Graduation

Candidates for degrees file an Application for Graduation form in the Office of the Registrar during the registration period of the last expected semester/term of study. The Application for Graduation form is available at www.aus.edu/registration or www.aus.edu/commencement. The deadlines for application submission are published in the academic calendar at the front section of this catalog, as well as at www.aus.edu/commencement/time_line.php. Only after an Application for Graduation form has been filed can the Office of the Registrar begin processing the necessary information for final certification for graduation.

Students who fail to complete all degree requirements by the end of the term for which they apply to graduate need not reapply for graduation. Their previous application will be automatically moved to the following semester.

Conferral of Degrees

Only students who have successfully completed degree requirements and have no holds by the end of the term for which they have applied to graduate are certified for conferral of a degree.

Degrees are conferred at the end of the semester in which requirements have been met. Conferral of the degree is noted on the academic transcript of the graduate with the date of graduation.

Names on Degrees

The names of AUS students will be spelled in English exactly as they appear on their passports or identity cards when printed on degrees. If a name on a passport or an identity card does not appear in English, then the spelling of the name will be printed according to the personal preference of the student concerned.

Graduation Honors

The university grants Latin honors at graduation. To be eligible for graduation honors, students must have achieved the requisite CGPA. These are:

Summa cum laude: 3.90–4.00 CGPA

Magna cum laude: 3.70–3.89 CGPA

Cum laude: 3.50–3.69 CGPA

Latin honors are noted on the student's diploma and transcript.

Attestation of Degrees and Transcripts

The Office of the Registrar offers the service of attesting degrees and transcripts with the UAE Ministry of Higher Education and Scientific Research once at the end of every semester. The office also provides all information relevant to the attestation process to assist graduates who wish pursue this process individually.

For details, please see www.aus.edu/commencement.

AUS
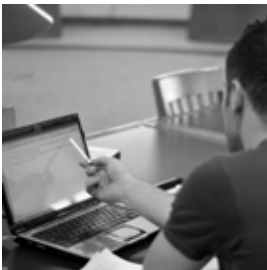
Tuition, Grants and Scholarships

Tuition and Fees

Tuition for full-time undergraduate students is given in the table below. The full-time course load is 12 to 16 credits. Students registering for more than 16 credits are charged a supplementary fee per credit over 16. Part-time students are charged per credit regardless of their major. Additional undergraduate fees and housing charges are given in the tables that follow.

Non-degree, transient and visiting students must pay the same tuition and fees as regular students. Tuition payment for exchange students attending AUS is governed by the specific terms of the agreement between AUS and their home universities.

The tuition payment of AUS students studying abroad at universities with which AUS has a semester exchange program is governed by the agreement between AUS and the exchange program host university. For details on payment procedures, please check with the Study Abroad Department.

AUS students who have received approval to study abroad at a university that does not have an semester exchange program with AUS make their payments directly to their study abroad host universities.

Undergraduate Tuition

Total Credits	Major	Rate A Per Semester (AED)	Rate B Per Semester (AED)	Fees for Summer Term (AED)
Less than 12 credits	All majors except IEP	2,970 per credit hour	3,090 per credit hour	2,970 per credit hour
	Intensive English Program	23,710	30,750	7,510
12 to 16 credits	All majors	33,820	35,360	-
Over 16 credits	All majors	33,820 + 2,250 per credit hour exceeding 16 credit hours	35,360 + 2,360 per credit hour exceeding 16 credit hours	-

Rate A: For continuing undergraduate and IEP students, and undergraduate students matriculated from IEP, with uninterrupted registration from Spring 2007.
Rate B: For first-time undergraduate and IEP students admitted after Spring 2007 and for students returning in or after Fall 2008 after not attending AUS for at least one regular semester (spring or fall).

Undergraduate Fees

Fee Type	Compulsory	Per Course (AED)	Per Semester (AED)	For Summer Term (AED)
Lab/Technology Fee Rate A	Applies for each registered course that has Fee Rate A attached (check Course Description section)	560	-	-
Lab/Technology Fee Rate B	Applies for each registered course that has Fee Rate B attached (check Course Description section)	770	-	-
Textbook Fee	For all full-time undergraduate students, excluding IEP; redeemable only at the AUS Bookstore	-	1,250	-
Reinstatement Fee	If applicable	-	1,000	1,000
Late Registration	If applicable	-	400	200
Late Payment	If applicable	-	400	200
Health Insurance: Plan I	AUS sponsored students	-	600	-
Plan II	For all students who are not on Plan I	-	300	-

Student Housing Fees			
AUS has twelve residence halls (eight for men and four for women). Living on campus is optional. Students should contact the Office of Student Affairs for information regarding individual cases.			
Room		**Per Semester (AED)**	**Per Summer Term (AED)**
Private	Single occupancy with private bath and kitchenette	13,900	5,560
Semi-Private	Single occupancy with a shared bath and kitchenette	9,850	3,940
Sharing	Double occupancy with a shared bath and kitchenette	5,400	2,160
Single	Single occupancy with a common bath and no kitchenette (men only)	5,240	-
Double	Double occupancy with a common bath and no kitchenette (men only)	3,200	-
Other Fees			
Refundable Dorm Damage Deposit	1,000 AED. Compulsory for all students residing in dormitories. Paid once at first occupancy and refunded, less deductions due to any missing or damaged items, at dormitory clearance time.		
Utilities Service Fee	Compulsory for all students residing in dormitories; will be added to the respective room rate when charged to the student account	140	-

Payment Methods

Tuition and fees are due each semester at or before the time of registration and form an integral part of registration. For information on the deferment of tuition and fees, please see the Deferment of Tuition and Fees section below.

AUS accepts the following methods of payment:

- cash in UAE Dirhams (AED) only
- checks drawn on local banks in UAE Dirhams (If two or more checks return due to insufficient funds, checks will no longer be accepted.)
- banker's drafts in UAE Dirhams
- credit cards (including online payment)
- direct transfers to Sharjah Islamic Bank Account No. 0029-200170-001 (student's name and ID number must be noted on transfer)

A charge of AED 500 is added if a check is returned for insufficient funds or if a credit card authorization payment is declined.

All student financial transactions with the university are processed through the Student Accounts Office located on the mezzanine floor of the Main Building. Questions concerning student accounts should be directed to the Student Accounts Office by calling 515 2282/515 2039 or sending an e-mail to studentaccounts@aus.edu.

Deferment of Tuition and Fees

Students are expected to pay their tuition and fees or to make arrangements for deferred payment during the registration period. The deferment of tuition and fees is approved only if all of the following conditions are met:

- At least 60 percent of the tuition and fees have been paid by the payment deadline.
- The student does not have access to checks or credit cards.
- The student has a clean payment history.
- The Fee Deferment Request Form is completed and signed by the student and is authorized by a Finance Department official. The form is available from Student Accounts www.aus.edu/admin/forms/.

Late Fees and Fines

All university students must adhere to university deadlines, rules and regulations. Late fees and fines may apply for late book returns, parking violations, breakage/replacement charges, late tuition payment, etc.

Grants and Scholarships

Located on the mezzanine floor of the Main Building, the Office of Financial Grants and Scholarships provides a range of grants and scholarship packages that help undergraduate students finance their education.

Students may apply for grants and scholarships regardless of their race, color, gender, religion, disabilities, age or national origin. Applications for grants and scholarships may be collected directly from the Office of Financial Grants and Scholarships (Main Building MM01). Specific forms, as indicated in the appropriate sections below, can also be printed from the website at www.aus.edu/registration/all_forms.php. For more information, please call 515 2005/2055/2060/2072 or visit www.aus.edu/registration/financial_grant.php.

AUS students studying abroad at universities with which AUS has a semester exchange program may continue to use their AUS grants and/or scholarships for that semester abroad. Students must obtain approval from the Office of Financial Grants and Scholarships before starting the semester abroad at the host university.

Grants

Chancellor's Scholars

First-time students who meet the following requirements may apply for the highly competitive Chancellor's Scholars Award:

- outstanding personal qualities and leadership abilities in school and the community
- scientific or literary contributions to the community
- special school or community honors or awards
- community service and school extracurricular activities
- a minimum average of 95 percent or equivalent in the last three years of secondary education
- limited financial resources

The award is offered in fall semesters only and is granted for the academic year. It covers 75 to 100 percent of the student's tuition and lab/technology fees.

Application for the Chancellor's Scholars Award is available at http://www.aus.edu/registration/all_forms.php. Applicants for the Fall 2009 semester must submit their applications to the Office of Grants and Scholarships by July 29, 2009.

Conditions for Maintaining Chancellor's Scholars Award

Recipients of the Chancellor's Scholars Award who wish to maintain it for the upcoming year must submit a renewal application (available from the Office of Financial Grants and Scholarships) by the enrolled students' deadlines. Please refer to the Office of Financial Grants and Scholarships website (www.aus.edu/registration/financial_grant.php) for the actual dates.

To maintain the award for the upcoming year, students must:

- achieve a minimum semester GPA of 3.00 in each of the fall and spring semesters
- achieve a minimum cumulative GPA of 3.30

- maintain a full-time student status with a minimum of 15 credits in each of the fall and spring semesters
- not be suspended or placed on conduct probation

In addition to meeting the above conditions, students applying to renew their Chancellor's Scholars Award must provide evidence of limited financial resources.

Family Tuition Grant

For families with more than one child enrolled simultaneously at AUS as full-time undergraduates in a degree program, a tuition discount of 25 percent is given to each sibling after the first. The 25 percent discount is granted for both tuition (for a maximum of 16 credit hours) and lab/technology fees. Family tuition grants are awarded for fall and spring semesters.

To receive the family tuition grant, students must complete the Family Tuition Grant Application form available at http://www.aus.edu/registration/all_forms.php. Applications must be received by the end of the first week of classes.

In the event that any sibling withdraws below 12 credits or is dismissed from the university in any given semester, the family grant will be discontinued the next regular semester the awarded sibling is registered.

Financial Grant

AUS financially assists undergraduate students with limited financial resources in the form of a financial grant. A financial grant is normally awarded for fall and/or spring semesters. Financial grants apply to summer terms, provided the student was on financial grant in the spring semester and is registered for credited summer term courses at AUS.

Financial grants normally apply toward students' tuition for a maximum of 16 credit hours. Students on financial grant who live on campus in double or sharing rooms may be granted partial assistance toward their residential hall fees.

First-time Students

First-time students with limited financial resources who demonstrate academic excellence by achieving a minimum cumulative average grade score of 85 percent or the equivalent in the last three years of secondary education may apply for a financial grant. In addition, students must have paid the seat reservation deposit by the deadline specified on the letter of admission.

The awarded grant amount depends on the financial need and academic qualifications of the applicant.

The Financial Grant Application is available at http://www.aus.edu/registration/all_forms.php. Financial grant applications for new students must be submitted to the Office of Financial Grants and Scholarships by the following deadlines:

- Fall 2009 applications: July 29, 2009
- Spring 2010 applications: December 13, 2009.

Enrolled Students

Enrolled full-time students with limited financial resources who have completed a minimum of 12 credits at AUS and who achieve a minimum cumulative GPA of 2.25 may apply for a financial grant.

The awarded grant amount depends on the financial need and academic qualifications of the applicant.

Financial grant applications for enrolled students are available from the Office of Financial Grants and Scholarships. Applications must be submitted to the Office of Financial Grants and Scholarships by the following deadlines:

- Fall 2009 applications: May 10, 2009
- Spring 2010 applications: November 15, 2009

Maintaining the Financial Grant

Financial grants are awarded for the academic year. Students who wish to maintain their financial grant must submit, each year, a renewal application (available from the Office of Financial

Grants and Scholarships) by the enrolled students' deadlines above.

In order to maintain their aid for an upcoming year, students on financial grant must meet the following conditions:

- achieve a minimum cumulative GPA of 2.25
- maintain a full-time student status in both the fall and spring semesters (minimum of 12 credits)
- not be suspended or placed on conduct probation

In addition to meeting the above conditions, students applying to renew their financial grant must provide evidence of limited financial resources.

Scholarships

Athletic Scholarships
Athletic scholarships are offered by the Office of Student Affairs with the aim of providing assistance to current full-time AUS student-athletes with limited financial resources who demonstrate athletic excellence and outstanding sports qualities.

Athletic scholarships are granted to eligible student-athletes on a renewable semester basis subject to terms and conditions of the AUS Athletic Scholarship Program. For more information on this scholarship, please contact the Office of Student Affairs or e-mail studentaffairs@aus.edu.

Dean's List Scholarship
Subject to available budget, students placed on the Dean's List at the end of the fall or spring semesters are eligible for a Dean's List Scholarship, which provides a tuition remission of up to 5 percent including lab/technology fees. This remission is applicable to the semester immediately following the semester when the student was placed on the Dean's List, provided that in this semester the student is enrolled as a full-time student and is receiving no more than 90 percent of student financial grant and/or scholarship from AUS and other external sponsors.

Application forms are not required. The Dean's List Scholarship is awarded during the third or fourth

week of classes of the fall and spring semesters; it is not available in the summer.

Merit Scholarship
First-time students who demonstrate academic excellence by achieving a minimum cumulative average grade score of 95 percent or its equivalent in the final year of their secondary education may be eligible for a Merit Scholarship.

Application forms are not required. First-time students are evaluated for eligibility at admission time by the Office of Enrollment Management/Undergraduate Admissions. Merit Scholarships of enrolled students are automatically renewed as long as the conditions for maintaining it are met.

The scholarship is granted by semester. It covers 10 percent of both tuition (for a maximum of 16 credit hours) and the lab/technology fees. Continuing students who meet the conditions for maintaining the Merit Scholarship at the end of a spring semester are granted this scholarship for the next summer term provided they are registered for credited summer term courses at AUS.

Conditions for Maintaining the Merit Scholarship

- achieve a minimum semester GPA of 2.50
- achieve a minimum cumulative GPA of 3.00
- maintain a full-time student status (minimum of 12 credits)
- Students who are placed on conduct probation at any time during the semester may not be eligible for the award in the following semester.

Petrofac Endowment Scholarship
The Petrofac Endowment Scholarship provides assistance for junior and senior students in the College of Engineering who have limited financial resources and who demonstrate academic excellence and exemplify the hallmark traits that characterize American University of Sharjah—honor, integrity, leadership and service to others.

The scholarship provides up to 50

percent of tuition and is awarded yearly in the fall semester. This scholarship does not cover AUS residential hall fees or summer term courses.

Students applying for this scholarship must hold the passport of a country in which Petrofac operates. A list of these is available from the Office of Financial Grants and Scholarships. Applications must be submitted to the Office of Financial Grants and Scholarships by May 10, 2009.

Conditions for Maintaining a Petrofac Endowment Scholarship

- achieve a minimum cumulative GPA of 3.25
- maintain a full-time student status (minimum of 12 credits)
- not be suspended or placed on conduct probation

Sheikh Khalifa Scholarship
The Sheikh Khalifa Scholarship, awarded to juniors and seniors, recognizes academic excellence, leadership potential, service to community, demonstrated talent in the field of study, and participation in extracurricular and university activities.

The Sheikh Khalifa Scholarship is awarded through an annual competition conducted within each college/school. It is granted for up to four consecutive semesters or until graduation requirements are complete, whichever occurs first, provided the continuation conditions are met. This scholarship is not awarded for the summer term.

Conditions for Maintaining the Sheikh Khalifa Scholarship

- achieve a minimum semester GPA of 3.25
- maintain a full-time student status (minimum of 12 credits)
- not be suspended or placed on conduct probation

University of Exeter Scholarship
The University of Exeter Scholarship recognizes academic excellence, community service and leadership potential in students. It covers the tuition for one AUS or University of

Sharjah graduate enrolled in any of the one-year master's degree programs at the University of Exeter in England. A list of these degree programs can be found at www.ex.ac.uk/postgraduate/degrees. Applicants for this scholarship should meet the following academic criteria:

- graduate by June of the application academic year
- achieve a cumulative GPA of 3.50

Applications for the University of Exeter Scholarship should be e-mailed to the head of the student's department. Students are encouraged to apply no later than March 1 of each year.

Sponsorship Liaison

The Sponsorship Liaison Division coordinates and communicates with external organizations sponsoring students to study at AUS.

The division provides various support services to both the sponsoring organizations and their sponsored students, including admission coordination, orientation, academic follow-up, progress reports, guidance, housing assistance and financial matters.

Moreover, the division is the main link for sponsors to communicate messages to sponsored students. It also coordinates the on- and off-campus annual meetings with sponsors and their students.

For further assistance and information, please contact the Sponsorship Liaison Officer, 515 1016, sponsors@aus.edu.

IEP
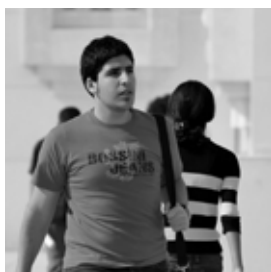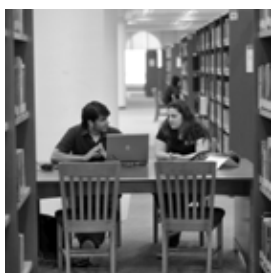
Intensive English Program

Head and Director
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Faculty
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Aftab Ahmed
Raja Mallek Bahloul
Richard Mark Brown
Halina Campa
Edward Carlstedt
Kelley Fast
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Lina Hejjawi
David Jeffrey
Jessica March
Richard McClane
Laurial Mehdi
Babak Moghaddam
Anne Marie Papadakis
Tahani Qadri
Olivia Riordan
Scott Rousseu
Mark Stevens
Jennifer Vahanian
Angela Waigand
Amanda Ward
Krystie Wills
Deborah Wilson

Students, faculty and staff of the Intensive English Program are members of the College of Arts and Sciences.

All AUS policies apply to IEP students except for differences as noted in this section. IEP students are strongly encouraged to become familiar with the Academic Policies and Regulations section of this catalog.

Mission Statement
English is the medium of instruction at American University of Sharjah. Competence in the English language is a prerequisite for student success. The mission of the Intensive English Program (IEP) is to develop learners' English language proficiency to a level necessary to matriculate into and excel in their majors.

Program Goals
To fulfill its mission, the program strives to:

- prepare students to be able to read and understand English texts intended for first-year university courses
- equip students with writing and grammar skills appropriate for

communicating ideas clearly

- train students to comprehend English aurally and articulate ideas orally in a variety of personal and academic settings
- build students' active and passive vocabulary
- improve students' study skills to facilitate a smooth transition to first-year studies
- provide intermediate to advanced students with specific knowledge of and strategies for taking the TOEFL

Program Outcomes
Upon successful completion of the IEP, students will be able to:

- demonstrate comprehension of English texts intended for first-year university courses
- write grammatically correct complex sentences within sophisticated paragraphs
- accurately understand spoken English and express thoughts and information orally in a logical manner
- demonstrate understanding and accurate use of vocabulary from the General Service List and Academic Word List
- apply time-management, organizational and study skills to their university courses
- attain the minimum TOEFL score at a level specified by the university

Admission and Placement

Students who achieve an International TOEFL score below 71 iBT/530 Institutional TOEFL and who qualify for admission to AUS are eligible to take the IEP Placement Test. Placement in one of the six proficiency levels of the program is based on the IEP Placement Test scores. Students may not choose their level of study in the IEP.

Note: *IEP students may not take any AUS courses outside of the IEP.*

Program Structure

The IEP consists of six levels that are sequenced in terms of language proficiency. The aim of instruction is to improve the English language skills of each student in the areas of reading,

writing, listening and speaking, and in the use of grammar and vocabulary. Also, the IEP courses are designed to develop students' academic preparation, independent learning and computer skills while meeting the individual needs of students.

Pedagogical Format

The focus of instruction at the lower levels is on general English. As language proficiency increases, IEP courses become more academic in nature. By the Advanced Level, course work begins to simulate credit-bearing undergraduate courses. Each level comprises multiple components, and reading and writing skills are reinforced at all levels of the program.

Reading
The goals of the reading component are twofold: to improve reading comprehension and to increase reading speed. These goals are met through the extended practice of a variety of reading skills within a diverse range of text forms and genres. Students also gain an understanding of, and an appreciation for, the importance of reading both inside and outside the academic setting.

Writing
The writing component leads students through the various steps of the writing process, from generating and organizing ideas to writing, editing and revising written work. Students develop a range of skills necessary to produce academic texts, from basic sentences to university papers. The emphasis of instruction is placed on developing fluency, grammatical accuracy and lexical accuracy by analyzing and practicing in the various rhetorical modes needed for academic writing.

Listening
The primary goal of the listening component is to develop and improve the ability of each student to effectively comprehend English in academic and social settings. This goal is met through practice in interactive listening activities,

which focus on understanding spoken English. The emphasis in lower-level courses is on understanding conversations, determining main ideas and details, and comprehending short lectures. The emphasis in higher-level courses is on improving comprehension of longer and more complex academic lectures, developing clear and accurate methods of taking notes, and organizing information in a useful format.

Speaking

The speaking component prepares students to communicate successfully in both the social and academic environments of the university. Improving both fluency and accuracy are the goals of all courses in this area. Instruction is given in how to express an opinion articulately, to agree or disagree effectively and to persuade and argue a point convincingly. The courses help students develop the ability to make speeches and oral presentations, to gather information, to participate in classroom and panel discussions, and to use computer technology for research and presentations.

Grammar

The aim of this component is to integrate grammar into four language skills: reading, writing, listening and speaking. The goal is to develop grammatical accuracy within written and oral contexts and to increase comprehension within listening and reading contexts. Emphasis is placed not only on knowing the forms but also on understanding the functions of grammatical structures in order to produce accurate language in appropriate contexts.

Labs

The focus of the IEP lab classes is to develop active learning, vocabulary acquisition strategies and basic computing skills. The lab classes support both individual and group learning, and provide additional contexts for the reinforcement of all language skills. Instruction focuses on general English at the lower proficiency levels and gradually moves along a continuum toward more academic, content-based language at the higher levels.

Instruction and Evaluation

Instructional Time

Students receive a minimum of 18 hours of classroom instruction a week.

Methods

All instructors are specially trained and experienced in teaching English across the curriculum. The methods, materials and equipment used are targeted to meet student needs.

Evaluation

Progress tests are administered regularly. Practice tests, quizzes, midterms and final examinations are given to assess progress in the courses. Promotion to a higher level in the program is determined by course grades and instructor assessment.

IEP Credit Hours

Each level of study in the IEP carries three credit hours. The credits earned are not part of a student's degree requirements. The grades of the last two semesters of IEP count toward a student's cumulative grade point average.

Attendance

Classes meet Sunday through Thursday. Because of the intensive nature of the program, regular attendance in all courses is expected, and as a matter of AUS policy, students are required to attend 85 percent or more of all IEP courses. A student who misses 15 percent of classes for any IEP course receives an automatic grade of WF and is dropped from the course. If a student misses 15 percent or more of all IEP classes for the semester, he/she will be dismissed from the program.

Absence

No absences are excused. Therefore, missing class for any reason (e.g., illness, traffic accident, visa problem) will count as an absence from class.

Lateness

Classes begin on time and students are expected to be in class on time. Students

who arrive late disrupt whatever activity is being performed. Three occasions of lateness equal one absence.

Progressing through the Program

Students must have a semester GPA of 2.00 (C) or better to be promoted to a higher level in the IEP. Students with a GPA below 2.00 in any semester in the IEP will be placed on academic probation and will be required to repeat that level. A student who has a semester GPA of 2.00 or higher but receives a grade of D or F in any component of the course may be required to repeat that component at that same level while being promoted to a higher level in all other components.

Additionally, for promotion to the next level, students may also be required to achieve certain scores on the Written English Test (WET) administered each semester to all students of the IEP. Teacher recommendations are also considered in promotion decisions.

Duration of IEP Study

The length of time required to achieve the admissions TOEFL requirement varies with the linguistic background, prior knowledge, work and study habits, and language aptitude of each student. Students who enter the IEP with TOEFL scores below 38 iBT/425 Institutional TOEFL will most likely require more than two semesters to achieve the TOEFL score required for admission.

Students may study in the IEP for a maximum of four semesters (not including the summer session). Students who have not matriculated after four semesters will be dismissed from the IEP.

Exit from the IEP

Students study English in the IEP until they achieve the TOEFL score required at the time of their admission to matriculate into their chosen major.

If the TOEFL score required for admittance to AUS is raised before an IEP student matriculates, the student will be allowed for the first academic year (two regular semesters) after

the new higher score is required to matriculate at the lower score required at the time he/she enrolled in the IEP. This applies only to IEP students who are continuously enrolled in the IEP for the two semesters.

If a student has not matriculated on the old score within one academic year after the adoption of a new TOEFL score, the student will be required to meet the TOEFL requirement in place at the time of matriculation.

American University of Sharjah reserves the right to require students in the IEP to retake a TOEFL exam deemed to be unreliable. This re-examination must be done in the AUS Testing Center at the student's expense. The results of the re-examination will determine matriculation in the university.

In a case where it is established beyond a reasonable doubt that a student has knowingly submitted a test score with the intention to deceive, this will be considered a violation of the Academic Integrity Code, and the case will be subject to the process and penalties of adjudication of academic offenses, as outlined in the Academic Integrity/Adjudication of Academic Offenses section found earlier in this catalog.

Matriculated IEP students start their first undergraduate semester in good standing, regardless of their most recent IEP academic standing.
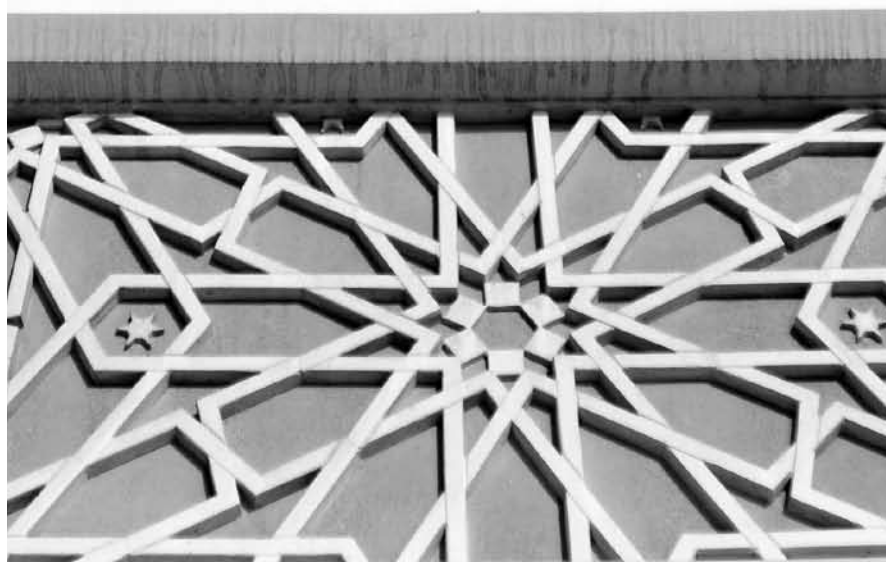
Repeating Courses

Students may not choose to repeat courses in the IEP. Students repeat courses only when required to do so by the IEP. Once they matriculate into the major, students will not be permitted to repeat IEP courses.

IEP Academic Probation Policy

IEP students will be placed on academic probation at the end of any semester in which their semester GPA is below a 2.00 (C), and they may be required to repeat the level.

Students on probation must achieve a semester GPA of 2.00 (C) or higher in their next semester in the IEP. If they do so, they will be removed from academic probation. Failure to do

so will result in dismissal from the program.

Matriculated IEP students start their first undergraduate semester in good standing, regardless of their most recent IEP academic standing

Course Descriptions

IEP 001 Novice Level (3 credits). Involves the presentation of large amounts of language. The primary goals are to improve student fluency in both the conversational and written modes, to increase vocabulary as rapidly as possible, to develop basic reading skills and to introduce the mechanics of writing at the sentence and paragraph level.

IEP 002 Elementary Level (3 credits). Moves from functional, survival English to academic discourse. To that end, important reading skills such as skimming, scanning and predicting are practiced and writing activities extend beyond the sentence to the paragraph. Grammatical concepts involving time relationships are also introduced, note taking from academic materials is practiced and oral presentations are given.

IEP 003 Intermediate Level (3 credits). Instruction takes on an overtly academic quality. High-level reading skills such as inferencing and synthesizing information from more than one source are introduced, while writing instruction involves the exploration of various rhetorical modes. Students are also expected to develop an awareness of contextual clues, an understanding of speaker purpose, a recognition of idiomatic usage and an accurate and fluent speech production.

IEP 004 Advanced Level (3 credits). Prepares students for university studies, although the focus is still on the major language skills rather than the actual content being covered. Students are required to read longer texts and to write longer essays. They study complex grammatical usage at the clause level. Finally, public speaking skills are refined through the discussion of complex source material and through oral presentations on topics involving persuasion and argumentation skills.

IEP 005 Bridge Level (3 credits). Simulates credit-bearing instruction at the university by integrating academic listening, speaking, reading and writing into the daily classroom pedagogy. Extensive reading is expected and major reading skills are reviewed and reinforced through large amounts of practice. The instruction includes an introduction to writing term papers.

IEP 006 Transition Level (3 credits). Prepares students to successfully function in freshman courses. Students practice language and critical thinking skills through academic, content-based courses. Students develop their English language competency and strategies for academic success through the use of readings and assignments from authentic college textbooks. The instruction includes how to synthesize information from a variety of sources and apply this knowledge in written reports and discussions.

CAS

College of Arts and Sciences

Dean
William Heidcamp

Associate Deans
Ibrahim El-Sadek
Timothy Walters

The mission of the College of Arts and Sciences is to provide students with the intellectual, cultural and scientific foundation for academic and professional education and training. Its programs are designed to inspire and invigorate the intellectual and creative potential of students and encourage them to conceptualize, reflect and act. Students examine the varied aspects of Arab, Islamic, Western and non-Western cultures; master written and oral expression in English; and develop the critical analysis. Finally, they build an understanding of moral and ethical foundations for individual and collective lifelong decisions.

Graduates of the College of Arts and Sciences will be prepared to achieve their personal and professional aspirations. They will be well qualified to pursue professional training and/or graduate degrees of their choice.

Degree Offerings

The College of Arts and Sciences offers the following undergraduate degree programs:

- Bachelor of Arts in English Language and Literature
- Bachelor of Arts in International Studies
- Bachelor of Arts in Mass Communication
- Bachelor of Science in Biology
- Bachelor of Science in Chemistry
- Bachelor of Science in Environmental Sciences
- Bachelor of Science in Mathematics

For information on the college's graduate programs, please see the *AUS Graduate Catalog*.

Minor Offerings

The College of Arts and Sciences offers the following minors:

- actuarial mathematics
- American studies
- applied and computational mathematics
- Arabic language and literature
- biology
- education
- English/Arabic translation
- English language
- English literature
- environmental policy
- environmental sciences
- governmental studies
- history
- international studies
- mass communication
- philosophy
- psychology
- women's studies

Department of Arabic and Translation Studies

Teirab AshShareef, Head

Faculty
Ahmed Ali
Wesam Al-Assadi
Muhsin Al-Musawi
Said Faiq
Basil Hatim (sabbatical Spring 2010)
Peter Heath
Lobna Ismail
Sattar Izwaini
Ghada Jayyusi-Lehn
Bouthaina Khaldi
Iskandar Mansour
Mujeeb Najim
Imed Nsiri
Gavin Picken
Olatunbosun Tijani

The mission of the Department of Arabic and Translation Studies is to cultivate students' knowledge and understanding of Arabic language and literature, Arab and Islamic studies, and Arabic/English translation and intercultural studies with the aim of preparing its graduates for academic and professional success. For Arabic language and literature (including comparative literature) and Arab and Islamic studies, students will acquire the necessary linguistic, literary, historical and cultural knowledge of Arabic and associated cultural contexts, and develop the ability to reflect critically on these areas. For Arabic/English translation and intercultural studies, students will acquire the knowledge of and the tools for the use of the two languages effectively in a variety of media, genres and contexts that pertain to translation as intercultural communication. The department offers minors in Arabic language and literature and in English/Arabic translation. It also houses the graduate program in Arabic/English/Arabic translation and interpreting (see the *AUS Graduate Catalog*).

Minor in Arabic Language and Literature

The minor in Arabic language and literature aims to enhance students' awareness and appreciation of the language, culture and literature of the Arab world. The minor is ideally suited for students in the humanities and social sciences, as well as students in applied sciences and business pursuing research or employment opportunities anywhere in the Arab world. The minor provides for a better understanding of Arabic language and literature in a global context. Furthermore, it meets the increasing regional and global demand for degree-holders proficient in Arabic language and culture.

Students enrolling in the Arabic language and literature minor should have normally completed a minimum of 30 credits of course work and be in good academic standing.

The following rules apply:

- The minor consists of a minimum of 18 credits, including at least nine credits in courses at or above the 300 level.
- At least nine credits of the 18 credits required for the minor must be taken in residence at AUS.
- At least six credits of the nine credits at or above the 300 level must be taken in residence at AUS.
- A grade of at least C- in each course and a GPA of at least 2.00 must be earned in courses taken to satisfy the minor.

Students seeking a minor in Arabic language and literature must complete the following courses or their equivalent. All course prerequisites must be satisfied.

Minor Requirements (6 credits)
- ARA 101 Readings in Arabic Heritage I (Arabic or English) or
  ARA 102 Readings in Arabic Heritage II (Arabic or English)
- ARA 200 Arabic as a Second Language II or
  ARA 210 Composition for Native Speakers of Arabic

Minor Electives (minimum of 12 credits)
Students must complete a minimum of 12 credits from any 200-level or above ARA and/or WST courses, nine of which must be at the 300 level or above.

Minor in English/Arabic Translation

To qualify for a minor in English/Arabic translation, students must demonstrate fluency in English and Arabic. In tandem with a solid grounding in communicative skills and linguistic analysis, the minor in translation focuses on written translation skills in a variety of settings and across disciplines. It also offers an insight into interpreting with a focus on the community. Throughout the program, students are provided with relevant theoretical input that establishes a framework for the study of translation and offers the tools to identify, analyze and resolve translation problems. This program of study will enable AUS students from any discipline to further enhance their employability chances and, more importantly, to be able to mediate in English between the world of their education and their community.

Students enrolling in the English/Arabic translation minor should have normally completed a minimum of 30 credits of course work and be in good academic standing.

The following rules apply:
- The minor consists of a minimum of 18 credits, including at least nine credits in

courses at or above the 300 level.
- At least nine credits of the 18 credits required for the minor must be taken in residence at AUS.
- At least six credits of the nine credits at or above the 300 level must be taken in residence at AUS.
- A grade of at least C- in each course and a GPA of at least 2.00 must be earned in courses taken to satisfy the minor.

Students seeking a minor in English/Arabic translation must complete the following courses or their equivalent. All course prerequisites must be satisfied.

Minor Requirements (6 credits)
- TRA 210 Introduction to Translation
- TRA 220 Theoretical and Practical Issues in Translation or
  TRA 230 Translating Arabic Literary Texts

Minor Electives (minimum of 12 credits)
Students must complete a minimum of 12 credits in courses selected from the following list:
- TRA 301 Modern Media Translation
- TRA 303 Interpreting: Focus on the Community
- TRA 394/494 Special Topics in Translation
- TRA 401 Translation Evaluation and History

Department of Biology and Chemistry

Fawwaz Jumean, Head

Faculty
Mohamed Abouleish
Imad Abu-Yousef
Mohamed Al-Sayah
Aaron Bartholomew
Oussama El-Kadri
Yehya El-Sayed
William Heidcamp
Sofian Kanan
Sandra Knuteson
Amin Majdalawieh
John Mosbo
Lucia Pappalardo
Dennis Russell
Fatin Samara

Bachelor of Science in Biology (BSB)

The mission of the Bachelor of Science in Biology program is to provide students with a broadly-based, rigorous education in a variety of biology areas. These include environmental biology, ecosystems management, environmental protection, species conservation, physiology, microbiology, molecular biology, genetics, health research, immunology and teaching.

Program Goals
The Bachelor of Science in Biology program seeks to:
- provide students with an integrated knowledge of contemporary principles and applications of biology that will prepare them for advanced degrees and careers in teaching, research, consulting and business
- provide a high-quality, laboratory-rich learning environment where students will learn proper laboratory protocols, plan and conduct experiments in various areas of biology, practice the scientific method, analyze data, and reach logical and reasonable conclusions
- provide opportunities for interested and qualified students to participate in meaningful research projects of their own, under the guidance of the biology faculty
- provide pre-professional education and training for students who wish to pursue careers in related fields such as medicine, genetic engineering, biotechnology and research
- maintain a dynamic curriculum that reflects the needs of a changing world
- foster motivation and opportunities for lifelong learning

Program Outcomes
Upon graduation from the Bachelor of Science in Biology program, students will be able to:
- participate effectively in practical, experience-based learning, through conferences, field experiences, workshops and independent research projects
- apply technologies and become proficient in the use of modern instrumentation

- identify and carry out thoughtful approaches to biology-related problems, including ethical issues and biological threats to the environment
- define simple research tasks, carry them out and use appropriate statistical analysis in the treatment of data
- develop competence in critical thinking, communications, teamwork, information technology and adaptation to change
- produce written and oral reports in the style most commonly used in scientific literature
- demonstrate knowledge of the fundamentals of various molecular, cell and ecological techniques, instruments and equipment

Career Opportunities

Graduates of the Bachelor of Science in Biology program will have the training necessary to work in many areas including genetic research laboratories, immunology research, human genetics counseling, agriculture, horticulture, soil science, marine aquaculture, fisheries, forestry, science education and teaching at all levels, scientific journalism, veterinary medicine, drug and biotechnology, ecosystems management, conservation law enforcement, bioinformatics database companies, pharmaceutical sales and production, university and hospital research centers, natural history museums, nature parks and zoological gardens, government wildlife management, centers for disease control, epidemiology, virology, food testing, public health, and medical and blood testing laboratories.

Degree Requirements

A minimum of 121 credits, including the following, is required:

- a minimum of 44 credits in general education requirements, including a minimum of 12 credits in English language competency (including ENG 203 or ENG 204), a minimum of 15 credits in humanities and social sciences, a minimum of 3 credits in Arabic heritage, 8 credits in science (BIO 101 and CHM 101) and 6 credits in mathematics and statistics (MTH 103 and STA 201)
- 38 credits of major requirements
- a minimum of 24 credits of major electives
- a minimum of 15 credits of free electives in courses at the 100 level or above, excluding MTH 101

Major Requirements (38 credits)
- BIO 102 General Biology II
- BIO 251 Environmental Ecology
- BIO 260 Genetics
- BIO 332 Cell Biology
- BIO 335 Microbiology
- BIO 361 Evolution and Biodiversity
- CHM 102 General Chemistry II
- CHM 215 Organic Chemistry I
- CHM 216 Organic Chemistry II
- CHM 217 Organic Chemistry Lab I
- ENV 400 Environmental Physiology Systems
- PHY 101 Physics I
- PHY 101L General Physics Laboratory I

Major Electives (minimum of 24 credits)
Students must complete a minimum of 24 credits in courses selected from the following list:
- BIO 330 Ecosystems Management
- BIO 394/494 Special Topics in Biology
- BIO 421 Aquatic Environments
- BIO 461 Desert and Maritime Plants
- BIO 491/ENV 491 Senior Project I
- BIO 492/ENV 492 Senior Project II
- CHM 350 Introduction to Biochemistry
- ENV 352 Environmental Toxicology

Proposed Sequence of Study
Bachelor of Science in Biology (BSB)

FIRST YEAR (28 credit hours)			
Term	**Course #**	**Course Title**	**Credit**
Fall	MTH 103	Calculus I	3
	WRI 101	Academic Writing	3
	BIO 101	General Biology I	4
	CHM 101	General Chemistry I	4
		Total	**14**
Spring	STA 201	Introduction to Statistics for Engineering and Natural Sciences	3
	BIO 102	General Biology II	4
	WRI 102	Writing and Reading Across the Curriculum	3
	CHM 102	General Chemistry II	4
		Total	**14**

SECOND YEAR (32 credit hours)			
Term	**Course #**	**Course Title**	**Credit**
Fall	CHM 215	Organic Chemistry I	3
	BIO 251	Environmental Ecology	3
	ENG 203 or ENG 204	Writing about Literature or Advanced Academic Writing	3
	HSS XXX	Humanities/Social Sciences	3
	ARA XXX	Arabic Heritage	3
		Total	**15**
Spring	CHM 216	Organic Chemistry II	3
	CHM 217	Organic Chemistry Laboratory I	1
	BIO 260	Genetics	3
	PHY 101	General Physics I	3
	PHY 101L	General Physics Laboratory I	1
	MJE XXX	Major Elective	3
	ELC XXX	English Language Competency	3
		Total	**17**

THIRD YEAR (31 credit hours)			
Term	**Course #**	**Course Title**	**Credit**
Fall	BIO 332	Cell Biology	3
	HSS XXX	Humanities/Social Sciences	3
	MJE XXX	Major Elective	3
	MJE XXX	Major Elective	3
	FRE XXX	Free Elective	3
		Total	**15**
Spring	BIO 361	Evolution and Biodiversity	3
	BIO 335	Microbiology	4
	MJE XXX	Major Elective	3
	HSS XXX	Humanities/Social Sciences	3
	FRE XXX	Free Elective	3
		Total	**16**

FOURTH YEAR (30 credit hours)			
Term	**Course #**	**Course Title**	**Credit**
Fall	ENV 400	Environmental Physiology Systems	3
	MJE XXX	Major Elective	3
	MJE XXX	Major Elective	3
	HSS XXX	Humanities/Social Sciences	3
	FRE XXX	Free Elective	3
		Total	**15**
Spring	MJE XXX	Major Elective	3
	MJE XXX	Major Elective	3
	HSS XXX	Humanities/Social Sciences	3
	FRE XXX	Free Elective	3
	FRE XXX	Free Elective	3
		Total	**15**

Bachelor of Science in Chemistry (BSC)

The mission of the Bachelor of Science in Chemistry program is to provide graduates with technical and problem-solving skills in an exciting and central area of scientific knowledge. Graduates will be prepared to pursue careers in industry, consulting, teaching and research.

Program Goals

The Bachelor of Science in Biology program seeks to:

- provide students with an integrated knowledge of contemporary principles and applications of chemistry that will prepare them for advanced degrees and careers in research, industry, education and business

- provide a high-quality, laboratory-rich learning environment where students will learn proper laboratory protocols, plan and conduct experiments in various areas of chemistry, practice the scientific method, analyze data, and reach logical and reasonable conclusions

- provide opportunities for interested and qualified students to participate in meaningful and significant research projects of their own, under the guidance of the chemistry faculty

- provide pre-professional education and training for students who wish to pursue careers in related fields such as medicine, pharmaceuticals, industry, petrochemicals and research

- maintain a dynamic curriculum that reflects the needs of a changing world

- foster motivation and opportunities for lifelong learning

Program Outcomes

Upon graduation from the Bachelor of Science in Chemistry program, students will be able to:

- participate effectively in practical, experience-based learning, through conferences, field experiences, workshops and independent research projects

- apply technologies and use advanced chemical instrumentation such as nuclear magnetic resonance (NMR), high pressure liquid chromatography (HPLC), inductively coupled plasma spectrometry (ICP) and Fourier-transform infrared spectrometry (FTIR)

- identify and carry out thoughtful approaches to chemistry-related problems, including ethical issues and the proper disposal of chemical waste

- define simple research tasks, carry them out and use appropriate statistical analysis in the treatment of data

- develop competence in critical thinking, communications, teamwork, information technology and adaptation to change

- produce written and oral reports in the style most commonly used in scientific literature

Career Opportunities

Chemists have the ability to work in a wide range of industries such as the following: agricultural companies, chemical distributors, chemical laboratories, chemical manufacturing plants, chemistry consulting firms, cosmetic companies, food and beverage companies, government, health protection branches, hospital research laboratories, industrial laboratories, mineral and metal industries, oil companies, petroleum refineries, pharmaceutical/biotechnology industries, police laboratories, pulp and paper industries, quality control laboratories, research centers/institutes, textile manufacturers and waterworks departments.

Degree Requirements

A minimum of 120 credits, including the following, is required:

- a minimum of 44 credits in general education requirements, including a minimum of 12 credits in English language competency (including ENG 203 or ENG 204), a minimum of 15 credits in humanities and social sciences, a minimum of 3 credits in Arabic heritage, 8 credits in science (CHM 101, PHY 101 and PHY 101L) and 6 credits in mathematics and/or statistics (MTH 103 and STA 201)

- 52 credits of major requirements

- a minimum of 9 credits of major electives

- a minimum of 15 credits of free electives in courses at the 100 level or above, excluding MTH 101

- a minimum CGPA of 2.00

Major Requirements (52 credits)
- CHM 102 General Chemistry II
- CHM 215 Organic Chemistry I
- CHM 216 Organic Chemistry II
- CHM 217 Organic Chemistry Laboratory I
- CHM 218 Organic Chemistry Laboratory II
- CHM 221 Basic Concepts of Inorganic Chemistry
- CHM 241 Quantitative Analysis
- CHM 315 Organic Chemistry III
- CHM 321 Chemistry of Transition Metals
- CHM 330 Physical Chemistry I
- CHM 331 Physical Chemistry II
- CHM 335 Physical Chemistry Laboratory
- CHM 345 Instrumental Analysis
- CHM 350 Introduction to Biochemistry
- ENV 252 Environmental Chemistry
- MTH 104 Calculus II
- MTH 205 Differential Equations
- PHY 102 General Physics II
- PHY 102L General Physics Laboratory II

Major Electives (minimum of 9 credits)
Students must complete a minimum of nine credits in courses selected from the following list:
- CHE 467 Corrosion
- CHM 332 Physical Chemistry III
- CHM 394/494 Special Topics in Chemistry
- CHM 415 Spectroscopy in Organic Chemistry
- CHM 431 Biophysical Chemistry
- CHM 491 Senior Research Project I
- CHM 492 Senior Research Project II
- ENV 352 Environmental Toxicology
- ENV 452 Soil and Water Chemistry
- ENV 453 Environmental Monitoring and Analysis Techniques

Proposed Sequence of Study
Bachelor of Science in Chemistry (BSC)

FIRST YEAR (28 credit hours)			
Term	**Course #**	**Course Title**	**Credit**
Fall	MTH 103	Calculus I	3
	PHY 101	General Physics I	3
	PHY 101L	General Physics Laboratory I	1
	CHM 101	General Chemistry I	4
	ELC XXX	English Language Competency	3
		Total	**14**
Spring	MTH 104	Calculus II	3
	PHY 102	General Physics II	3
	PHY 102L	General Physics Laboratory II	1
	CHM 102	General Chemistry II	4
	ELC XXX	English Language Competency	3
		Total	**14**

SECOND YEAR (31 credit hours)			
Term	**Course #**	**Course Title**	**Credit**
Fall	MTH 205	Differential Equations	3
	CHM 215	Organic Chemistry I	3
	CHM 241	Quantitative Analysis	3
	ARA XXX	Arabic Heritage	3
	ELC XXX	English Language Competency	3
		Total	**15**
Spring	CHM 216	Organic Chemistry II	3
	CHM 217	Organic Chemistry Laboratory I	1
	CHM 221	Basic Concepts of Inorganic Chemistry	3
	STA 201	Introduction to Statistics for Engineering and Natural Sciences	3
	ELC XXX	English Language Competency	3
	HSS XXX	Humanities/Social Sciences	3
		Total	**16**

THIRD YEAR (30 credit hours)			
Term	**Course #**	**Course Title**	**Credit**
Fall	CHM 345	Instrumental Analysis	3
	CHM 330	Physical Chemistry I	3
	CHM 218	Organic Chemistry Laboratory II	1
	ENV 252	Environmental Chemistry	3
	HSS XXX	Humanities/Social Sciences	3
	FRE XXX	Free Elective	3
		Total	**16**
Spring	CHM 335	Physical Chemistry Laboratory	2
	CHM 331	Physical Chemistry II	3
	MJE XXX	Major Elective	3
	HSS XXX	Humanities/Social Sciences	3
	FRE XXX	Free Elective	3
		Total	**14**

FOURTH YEAR (31 credit hours)			
Term	**Course #**	**Course Title**	**Credit**
Fall	CHM 321	Chemistry of Transition Metals	4
	MJE XXX	Major Elective	3
	MJE XXX	Major Elective	3
	HSS XXX	Humanities/Social Sciences	3
	FRE XXX	Free Elective	3
		Total	**16**
Spring	CHM 315	Organic Chemistry III	3
	CHM 350	Introduction to Biochemistry	3
	MJE XXX	Major Elective	3
	HSS XXX	Humanities/Social Sciences	3
	FRE XXX	Free Elective	3
		Total	**15**

Bachelor of Science in Environmental Sciences (BSES)

The mission of the Bachelor of Science in Environmental Sciences program is to provide graduates with qualifications for meaningful employment in the ever-expanding environmental field. This multidisciplinary program integrates biology, chemistry and other related sciences so as to enable students to identify and understand environmental issues and devise solutions.

Program Goals

The Bachelor of Science in Environmental Sciences program seeks to:

- provide students with an integrated knowledge of contemporary principles and applications of environmental science that will prepare them for advanced degrees and careers in research, industry, education and business
- provide a high-quality, laboratory-rich learning environment where students will learn proper laboratory protocols, plan and conduct experiments, practice the scientific method, analyze data, and reach logical and reasonable conclusions
- provide opportunities for interested and qualified students to participate in meaningful research projects of their own, under the guidance of the environmental sciences faculty
- provide students with adequate background in the basic natural sciences, which will form the basis for their environmental studies
- foster motivation and opportunities for lifelong learning
- maintain a dynamic curriculum that reflects the needs of a changing world
- present students with opportunities for awareness of environmental issues within a global context

Program Outcomes

Upon graduation from the Bachelor of Science in Environmental Sciences program, students will be able to:

- participate effectively in practical, experience-based learning, through conferences, field experiences, workshops and independent research projects
- gain ability to work as a research team member and become proficient in the use of advanced equipment used in environmental analysis, including gas chromatography (GC), high pressure liquid chromatography (HPLC), ion chromatography (IC) and inductively coupled plasma spectrometry (ICP)
- evaluate and discuss sources of local and regional environmental threats and perform impact assessment studies
- define simple research tasks and carry them out, and assist in more complex research tasks as required for professional work
- demonstrate knowledge of the fundamentals of environmental modeling, environmental monitoring techniques and risk assessment
- evaluate the ethical, social, civic, cultural and political dimensions as they relate to environmental issues
- produce written and oral reports in the style most commonly used in scientific literature

Career Opportunities

Recent events and current issues have raised major concerns related to the preservation of the environment. Local governments and private industries have begun to recognize the importance of conservation, recycling and environmental awareness. The Bachelor of Science in Environmental Sciences program at American University of Sharjah gives students an understanding of these issues, the skills needed to function as an environmental science professional and the necessary undergraduate education to pursue a graduate program in environmental sciences. Environmental scientists, biologists, chemists and physicists participate in the instruction of the core and concentration requirements for this major.

Environmental scientists can work in four general areas:

- environmental protection, which targets air, water and land quality and often has a human and environmental health and safety perspective
- conservation and protection of natural resources, which deal both with park, fisheries and wildlife management and the operation of resource-based industries such as oil, mining, forestry and agriculture
- environmental education and communications, which are relevant to both the public and private sectors
- environmental research, which includes developing analytical methods for detecting environmental pollutants and improving prediction of environmental and geophysical changes. Job opportunities are available in public and academic-supported research facilities.

Employers of environmental scientists include government, the natural resources sector, utilities, manufacturers and industry, as well as small business. Governments at all levels need environmental scientists in the areas of enforcing regulations, writing public information, writing and researching regulations, and ensuring government departmental compliance with existing regulations. The natural resource/utility sector (i.e., oil, mining, forestry, agriculture and hydro) is interested in having environmental scientists consult on the sustainability of their operations; monitor and mitigate environmental effects on wildlife, fisheries, the watershed and natural beauty; and advise them on liability issues. Manufacturers (particularly those involved in the production of chemicals, plastics, paints, pesticides, etc.) employ environmental scientists due to concerns that include smokestack specifications and volatile emissions, wastewater quality, minimization and disposal of hazardous waste, and health and safety issues. The service sector, including banks, real estate companies, lawyers and insurance companies, also relies on environmental scientists to accurately describe environmental risk so that they can assess potential liability. Businesses have been formed that service all these sectors in such areas as environmental impact consulting, compliances, recycling and waste management.

Currently, most work in the environmental sector is responsive to existing or anticipated problems, such as treating or monitoring effluent or gaseous emissions; preparing environmental impact statements, assessments and audits as required by law; conducting land reclamation and remediation; and completing public consultations. People with an entrepreneurial inclination to take a proactive approach to environmental stewardship and sustainable development have the opportunity to innovate current practices. There are ample prospects for individuals to generate inventions and ideas that would fundamentally change the way business, society and technology function through the creation of realistic alternatives to environmentally hazardous practices.

Degree Requirements

Environmental sciences majors must choose among the following options:
- a concentration in biology and ecosystems
- a concentration in environmental chemistry and analysis
- a double concentration in the two above areas

A minimum of 121 credits, including the following, is required:
- a minimum of 44 credits in general education requirements, including ENG 203 or ENG 204, CHM 101, CHM 102, MTH 103 and STA 201
- 33 credits of major requirements
- a minimum of 29 credits of concentration requirements and concentration electives
- a minimum of 15 credits of free electives in courses at the 100 level or above, excluding MTH 101
- six to eight weeks of full-time, satisfactory internship in environmental sciences with a business or governmental organization
- a minimum CGPA of 2.00

Major Requirements (33 credits)

Basic Mathematics and Sciences (11 credits)
- BIO 101 General Biology I
- MTH 104 Calculus II
- PHY 101 General Physics I
- PHY 101L General Physics Laboratory I

Core Requirements (22 credits)
- CHM 215 Organic Chemistry I
- CHM 217 Organic Chemistry Laboratory I
- CHM 241 Quantitative Analysis
- CHM 345 Instrumental Analysis
- ENV 201 Fundamentals of Environmental Science
- ENV 311 Environmental Modeling
- ENV 411 Environmental Assessment and Management
- ENV 453 Environmental Monitoring and Analysis Techniques
- ENV 497 Internship in Environmental Science

Concentration in Environmental Biology and Ecosystems (minimum of 29 credits)

Concentration Requirements (17 credits)
- BIO 102 General Biology II
- BIO 251 Environmental Ecology
- BIO 260 Genetics
- BIO 335 Microbiology
- BIO 361 Evolution and Biodiversity

Concentration Electives (minimum of 12 credits)

Students must complete a minimum of 12 credits in courses selected from the following list:
- BIO 330 Ecosystems Management
- BIO 394/494 Special Topics in Biology
- BIO 421 Aquatic Environments
- CHM 216 Organic Chemistry II
- CHM 218 Organic Chemistry Laboratory II
- CHM 221 Basic Concepts of Inorganic Chemistry

- CHM 350 Introduction to Biochemistry
- CHM 394/494 Special Topics in Chemistry
- ENV 252 Environmental Chemistry
- ENV 261 Physical Geography
- ENV 352 Environmental Toxicology
- ENV 394/494 Special Topics in Environmental Sciences
- ENV 400 Environmental Physiology Systems
- ENV 451 Waste Treatment
- ENV 491 Senior Research Project I
- ENV 492 Senior Research Project II
- PHY 251 Meteorology
- PHY 301 Energy Sources
- one course at the 200 level or above in BIO/CHM/ENV/PHY approved by the department

Proposed Sequence of Study
Bachelor of Science in Environmental Sciences (BSES)
Concentration: Environmental Biology and Ecosystems

FIRST YEAR (28 credit hours)			
Term	**Course #**	**Course Title**	**Credit**
Fall	MTH 103	Calculus I	3
	BIO 101	General Biology I	4
	CHM 101	General Chemistry I	4
	ELC XXX	English Language Competency	3
		Total	**14**
Spring	MTH 104	Calculus II	3
	PHY 101	General Physics I	3
	PHY 101L	General Physics Laboratory I	1
	CHM 102	General Chemistry II	4
	ELC XXX	English Language Competency	3
		Total	**14**

SECOND YEAR (32 credits hours)			
Term	**Course #**	**Course Title**	**Credit**
Fall	BIO 102	General Biology II	4
	CHM 215	Organic Chemistry I	3
	ENV 201	Fundamentals of Environmental Science	3
	CHM 241	Quantitative Analysis	3
	ELC XXX	English Language Competency	3
		Total	**16**
Spring	BIO 251	Environmental Ecology	3
	CHM 217	Organic Chemistry Laboratory I	1
	CNE XXX	Concentration Elective	3
	HSS XXX	Humanities/Social Sciences	3
	ELC XXX	English Language Competency	3
	ARA XXX	Arabic Heritage	3
		Total	**16**

THIRD YEAR (31 credits hours)			
Term	**Course #**	**Course Title**	**Credit**
Fall	BIO 260	Genetics	3
	ENV 311	Environmental Modeling	3
	STA 201	Introduction to Statistics for Engineering and Natural Sciences	3
	CNE XXX	Concentration Elective	3
	HSS XXX	Humanities/Social Sciences	3
		Total	**15**
Spring	BIO 361	Evolution and Biodiversity	3
	BIO 335	Microbiology	4
	CHM 345	Instrumental Analysis	3
	HSS XXX	Humanities/Social Sciences	3
	FRE XXX	Free Elective	3
		Total	**16**
Summer	ENV 497	Internship in Environmental Science	0

FOURTH YEAR (30 credit hours)			
Term	**Course #**	**Course Title**	**Credit**
Fall	ENV 453	Environmental Monitoring and Analysis Techniques	3
	CNE XXX	Concentration Elective	3
	HSS XXX	Humanities/Social Sciences	3
	FRE XXX	Free Elective	3
	FRE XXX	Free Elective	3
		Total	**15**
Spring	ENV 411	Environmental Assessment and Management	3
	CNE XXX	Concentration Elective	3
	HSS XXX	Humanities/Social Sciences	3
	FRE XXX	Free Elective	3
	FRE XXX	Free Elective	3
		Total	**15**

Concentration in Environmental Chemistry and Analysis (minimum of 29 credits)

Concentration Requirements (15 credits)

- CHM 221 Basic Concepts of Inorganic Chemistry
- CHM 330 Physical Chemistry I
- ENV 252 Environmental Chemistry
- ENV 451 Waste Treatment
- ENV 452 Soil and Water Chemistry

Concentration Electives (minimum of 14 credits)

Students must complete a minimum of 14 credits in courses selected from the following list:

- BIO 335 Microbiology
- BIO 394/494 Special Topics in Biology
- CHE 467 Corrosion
- CHM 216 Organic Chemistry II
- CHM 218 Organic Chemistry Laboratory II
- CHM 331 Physical Chemistry II
- CHM 335 Physical Chemistry Laboratory
- CHM 350 Introduction to Biochemistry
- CHM 394/494 Special Topics in Chemistry
- ENV 261 Physical Geography
- ENV 352 Environmental Toxicology
- ENV 394/494 Special Topics in Environmental Sciences
- ENV 491 Senior Research Project I
- ENV 492 Senior Research Project II
- PHY 251 Meteorology
- PHY 303 Atmospheric Physics
- one course at the 200 level or above in BIO/CHM/ENV/PHY approved by the department

Proposed Sequence of Study
Bachelor of Science in Environmental Sciences (BSES)
Concentration: Environmental Chemistry and Analysis

FIRST YEAR (28 credit hours)			
Term	Course #	Course Title	Credit
Fall	MTH 103	Calculus I	3
	BIO 101	General Biology I	4
	CHM 101	General Chemistry I	4
	ELC XXX	English Language Competency	3
		Total	14
Spring	MTH 104	Calculus II	3
	PHY 101	General Physics I	3
	PHY 101L	General Physics Laboratory I	1
	CHM 102	General Chemistry II	4
	ELC XXX	English Language Competency	3
		Total	14

SECOND YEAR (31 credit hours)			
Term	Course #	Course Title	Credit
Fall	CHM 215	Organic Chemistry I	3
	ENV 201	Fundamentals of Environmental Science	3
	CHM 241	Quantitative Analysis	3
	ELC XXX	English Language Competency	3
	HSS XXX	Humanities/Social Sciences	3
		Total	15
Spring	CHM 217	Organic Chemistry Lab I	1
	CHM 221	Basic Concepts of Inorganic Chemistry	3
	CNE XXX	Concentration Elective	3
	CNE XXX	Concentration Elective	3
	ARA XXX	Arabic Heritage	3
	ELC XXX	English Language Competency	3
		Total	16

THIRD YEAR (30 credit hours)			
Term	Course #	Course Title	Credit
Fall	STA 201	Introduction to Statistics for Engineering and Natural Sciences	3
	ENV 311	Environmental Modeling	3
	CNE XXX	Concentration Elective	3
	HSS XXX	Humanities/Social Sciences	3
	HSS XXX	Humanities/Social Sciences	3
		Total	15
Spring	ENV 252	Environmental Chemistry	3
	CHM 345	Instrumental Analysis	3
	CHM 330	Physical Chemistry I	3
	HSS XXX	Humanities/Social Sciences	3
	FRE XXX	Free Elective	3
		Total	15
Summer	ENG 497	Internship in Environmental Science	0

FOURTH YEAR (32 credit hours)			
Term	Course #	Course Title	Credit
Fall	ENV 453	Environmental Monitoring and Analysis Techniques	3
	ENV 451	Waste Treatment	3
	ENV 452	Soil and Water Chemistry	3
	FRE XXX	Free Elective	3
	FRE XXX	Free Elective	3
		Total	15
Spring	ENV 411	Environmental Assessment and Management	3
	CNE XXX	Concentration Elective	3
	CNE XXX	Concentration Elective	2
	HSS XXX	Humanities/Social Sciences	3
	FRE XXX	Free Elective	3
	FRE XXX	Free Elective	3
		Total	17

Double Concentration in Environmental Biology and Ecosystems, and Chemistry and Analysis

Students must fulfill the requirements of both concentrations, as detailed in the respective previous sections. Courses used to fulfill the requirements of the first concentration can double count toward the second concentration. Once the degree requirements are met, any shortage in credits may be fulfilled by free electives. Double-concentration students generally require more than 120 credits to meet graduation requirements.

Minor in Biology

A minor in biology trains students in the most important aspects of ecology and genetics, which makes them better qualified to enter professions that require knowledge of living organisms and the environment.

Students enrolling in the biology minor should have normally completed a minimum of 30 credits of course work and be in good academic standing.

The following rules apply:
- The minor consists of a minimum of 20 credits, including at least nine credits in courses at or above the 300 level.
- At least nine credits of the 20 credits required for the minor must be taken in residence at AUS.
- At least six credits of the nine credits at or above the 300 level must be taken in residence at AUS.
- A grade of at least C- in each course and a GPA of at least 2.00 must be earned in courses taken to satisfy the minor.

Students seeking a minor in biology must complete the following courses or their equivalent. All course prerequisites must be satisfied.

The minor is not open to environmental sciences students in the environmental biology and ecosystems concentration.

Minor Requirements (8 credits)
- BIO 101 General Biology I
- BIO 102 General Biology II

Minor Electives (minimum of 12 credits)
Students must complete a minimum of 12 credits in courses selected from the following list:

- BIO 210 Introduction to Anatomy and Physiology
- BIO 251 Environmental Ecology
- BIO 260 Genetics
- BIO 330 Ecosystems Management
- BIO 332 Cell Biology
- BIO 335 Microbiology
- BIO 361 Evolution and Biodiversity
- BIO 394/494 Special Topics in Biology
- BIO 421 Aquatic Environments
- BIO 461 Desert and Maritime Plants

Minor in Environmental Policy

This interdisciplinary minor draws on the resources and expertise of several departments. Students enrolling in the environmental policy minor should have normally completed a minimum of 30 credits of course work and be in good academic standing.

The following rules apply:
- The minor consists of a minimum of 18 credits, including at least nine credits in courses at or above the 300 level.
- At least nine credits of the 18 credits required for the minor must be taken in residence at AUS.
- At least six credits of the nine credits at or above the 300 level must be taken in residence at AUS.
- A grade of at least C- in each course and a GPA of at least 2.00 must be earned in courses taken to satisfy the minor.

Students seeking a minor in environmental policy must complete the following courses or their equivalent. All course prerequisites must be satisfied.

Minor Requirements (9 credits)
- CHM 105 Chemistry and the Environment or
  ENV 100 Principles of Environmental Science or
  ENV 201 Fundamentals of Environmental Science
- ENV 381 Environmental Strategies and Regulations or
  ENV 411 Environmental Assessment and Management or
  ENV 412 Concepts and Models in Environmental Management Systems
- SOC 302 Environmental Sociology

Minor Electives (9 credits)
Students must complete a minimum of nine credits in courses selected from the following list:

- ARC 374 Environmentally Sustainable Design
- BIO 330 Ecosystems Management
- ECO 404 Economics of Environmental and Natural Resources
- ENV 294/394/494 Special Topics in Environmental Sciences
- PBA 411 Foundations of Public Policy Analysis
- PHI 309 Ethics and the Environment
- POL 201 Introduction to Political Studies
- POL 304 International Organizations or POL 305 Public International Law
- SOC 380 Urban Sociology

Minor in Environmental Sciences

This minor draws on the resources and expertise of several disciplines. Students enrolling in the environmental sciences minor should have normally completed a minimum of 30 credits of course work and be in good academic standing.

The following rules apply:
- The minor consists of a minimum of 18 credits, including at least nine credits in courses at or above the 300 level.
- At least nine credits of the 18 credits required for the minor must be taken in residence at AUS.
- At least six credits of the nine credits at or above the 300 level must be taken in residence at AUS.
- A grade of at least C- in each course and a GPA of at least 2.00 must be earned in courses taken to satisfy the minor.

The minor is not open to environmental sciences students.

Minor Requirements (6 credits)
- ENV 201 Fundamentals of Environmental Science
- ENV 411 Environmental Assessment and Management

Minor Electives (12 credits)
Students must complete a minimum of 12 credits in courses selected from the following list:
- BIO 330 Ecosystems Management
- BIO 335 Microbiology
- CHE 461 Air Pollution
- CHE 467 Corrosion
- CHE 472 Water and Wastewater Treatment Design
- CHM 345 Instrumental Analysis
- any 200-level or above ENV course, excluding ENV 201 and ENV 411

Department of English

Fatima Badry, Head (sabbatical Spring 2010)

Faculty

Khawlah Ahmed
Naghmana Ali
Ahmad Al-Issa
Anderson Araujo
Maher Bahloul (sabbatical Spring 2010)
Judith Caesar
Peter Crompton
John Elliott
Nawar Al-Hassan Golley
Cindy Gunn
William Haney II
Nicholas Karavatos
Betty Lanteigne
Aisha Mohamed-Sayidina
Laila Noman
David Prescott
Rana Raddawi
Rodney Tyson

Bachelor of Arts in English Language and Literature (BAELL)

The Department of English offers a Bachelor of Arts in English Language and Literature with concentrations in language or literature. The Department of English also offers minors in education, English language and English literature in addition to a Master of Arts degree in Teaching English to Speakers of Other Languages (TESOL). For more details on the master's degree, please refer to the *AUS Graduate Catalog*.

The Department of English teaches many courses in the humanities, social sciences and rhetoric that apply to the AUS General Education Program. Courses in literature and language describe intellectual and cultural traditions of the Western world; analyze and explain how Western traditions have influenced the present; analyze cultural ideals and values in order to enhance self-understanding and empathy for others; explain how societies are defined in relation to culture, nationality, race, ethnicity and gender; and analyze and explain implied and expressed cultural values and attitudes in works of literature, as well as explain the development of human institutions, ideas and social structures. The literature and linguistics courses are also related to

the social sciences, elucidating ideas in the following areas: sociology, psychology, history, language theory, political science and cultural studies. The rhetoric courses help students develop their oral and written communication skills in English.

Mission Statement

The mission of the AUS Department of English is based on a liberal arts and humanities approach to education that aims to prepare students academically in English language and literature. Its programs are designed to foster creative and critical abilities and skills that will enable students to use English in both their academic and professional lives.

The mission of the Bachelor of Arts in English Language and Literature program is to provide students with a broad knowledge of the ways in which literature explores the human experience and how language conveys meaning, preparing students for careers in writing and teaching and for graduate study.

Department and Program Goals

General Education

The goals of the Department of English with respect to general education are to:

- increase students' oral and written English proficiency in a variety of media, genres and contexts
- prepare students to think critically and analyze information objectively as well as subjectively
- develop students' ability to synthesize information from sources in a variety of disciplines
- teach students how language evokes meaning, emotion and insight into themselves and human culture
- foster independent thought and creativity
- develop students' understanding of, and sensitivity to, the English language and its structure
- foster the close analysis of literary texts within the context of the societies in which they were written

Bachelor of Arts in English Language and Literature

The goals of the Bachelor of Arts in English Language and Literature are to:

- provide knowledge of the linguistic structure of English and its literary use
- enable students to understand English within its historical, theoretical and cultural context

- provide students with insights into the complexity of human thought, emotion and interaction
- teach students the research tools, critical processes and analytical skills necessary for advanced study in diverse fields

Concentration in English Language

The goals of the concentration in English language are to:

- help students develop a critical approach to linguistic analysis
- help students realize the power of language in cross-cultural communication
- increase students' awareness of the relationship between language, thought and culture
- explain the history and development of Modern English
- develop students' understanding of, and sensitivity to, the English language and its structure
- provide an understanding of the interrelationship between society and language
- enable students to appreciate the role of pragmatics in language use

Concentration in English Literature

The goals of the concentration in English literature are to:

- help students understand how ideas and literary styles change from one period to another in response to technological changes, historical events and philosophical concepts
- develop an understanding of the exchange of ideas from one culture to another
- explore the richness and nuances of the English language and British, American and other Anglophone literature
- expose students to the styles and elements of various genres
- teach the basic elements of critical and creative writing
- show the ways in which literature evokes aesthetic experience and insight into human nature
- explore the philosophical and critical theories that underlie both the understanding and the writing of literature
- foster the close analysis of literary texts within the context of the societies in which they were written

Program Outcomes

Concentration in English Language

Upon graduation from the Bachelor of

Arts in English Language and Literature program, students with a concentration in English language will be able to:

- apply standard linguistic techniques to analysis and description of language
- distinguish prescriptive and descriptive approaches to language analysis
- analyze language from a sociocultural perspective
- understand the dynamics of language as a tool of communication
- recognize the power of the word and the power of language in general
- explore how cultures influence communication
- recognize cultural differences in nonverbal communication
- explain the extent to which language and thought are intertwined
- explain how the use of linguistic devices affects interpretations of events
- identify means by which language influences beliefs about self and others
- be aware of cultural variation around the world in the arts, sciences and humanities
- examine representative literary works from Old, Middle, Early Modern and Late Modern English periods
- connect events in English language history with changes in English
- demonstrate knowledge of the rules governing sound systems
- analyze morphemic structures of language
- investigate a variety of phrase and sentence structures
- distinguish between various degrees of grammaticality of language
- research linguistic components of oral or written language
- examine variables in language variation within speech communities
- investigate distinctions between language and dialect, diglossia and multilingualism
- recognize the variety and complexity of world languages
- use language effectively in a variety of communicative purposes
- investigate the role of conversational implicature, presupposition, deixis and speech acts in communication
- identify cross-cultural differences in pragmatics
- research the pragmatics of manipulative or emancipatory language use
- examine background knowledge, cohesion and coherence in written and oral texts

Concentration in English Literature

Upon graduation from the Bachelor of Arts in English Language and Literature, program, students with a concentration in English literature will be able to:

- explain the specific rhetorical devices (irony, allusion, connotation, etc.) by which writers convey meaning and evoke emotion
- explain the ways in which the structure of a work, from the sentence level to the overall organization, expresses meaning
- describe the methods by which literature evokes insight
- analyze the ways in which literature interacts with the reader to create an aesthetic experience
- articulate the ways in which literature provides insight into the human condition
- explain the differences between literary movements and periods and their predecessors
- recognize the ways in which major writers were influenced by the ideas and events of their time
- identify ideas and concepts that led to changes in literary practice in Anglophone literature
- explain the interchange of ideas that led to such international literary movements as romanticism, realism, modernism and postmodernism
- summarize the influence of non-Western literary and philosophical traditions on Anglophone literature
- discuss the effect of the colonial experience on the Anglophone literature of both the colonizer and the colonized
- demonstrate various theoretical approaches to literature
- explain the philosophies that led to the development of various literary theories
- explain the various theories of human understanding that influenced writers at various times
- assess the degree to which various theories lead to an aesthetic experience of a work
- demonstrate an understanding of the functions of dialogue, setting, voice, tone, atmosphere, narrative structure, imagery, rhythm and metaphor in creative prose and poetry
- evaluate creative work by specific criteria
- employ effective patterns of organization in all critical and creative work
- demonstrate primary and secondary

support for all critical interpretations
- evaluate the effectiveness of literary interpretations in scholarly writing
- demonstrate knowledge of how drama evokes meaning and emotion
- explain the fundamentals of poetic expression
- explain the elements of fiction
- produce a comprehensive critical study revealing an in-depth knowledge of an individual author, literary movement and theoretical approach

Admission to the Program

Admission to the program follows the AUS undergraduate admission requirements. AUS students transferring into the program must have a cumulative GPA of 2.00 or higher.

Students seeking to major in English language and literature must select a concentration in either English language or English literature.

Degree Requirements

Students majoring in English language and literature must choose one of the following two concentrations:

- a concentration in English language
- a concentration in English literature

A minimum of 120 credits, including the following, is required:

- a minimum of 42 credits of general education requirements, including ENG 203 or ENG 204, MTH 100 and STA 202
- a minimum of 51 credits of major requirements and major electives
- 12 credits of concentration requirements
- a minimum of 15 credits of free electives
- a minimum CGPA of 2.00

Major Requirements (30 credits)
- ENG 210 Introduction to Literature
- ENG 214 Nineteenth Century American Literature
- ENG 215 Contemporary World Literature
- ENG 223 Introduction to Language Study
- ENG 224 English Grammar
- ENG 226 Development of the English Language
- ENG 234 Language in Society
- ENG 300 Introduction to Literary Theory
- ENG 302 Stylistics
- ENG 312 English Poetry and Prose I: Beginnings to 1800

**Major Electives
(minimum of 21 credits)**

Students must complete a minimum of 21 credits from any 300-level and above courses in education (EDU) and English (ENG) not listed as major requirements or concentration requirements in the student's chosen concentration.

**English Language Concentration
Requirements (12 credits)**

- ENG 331 The Sound Patterns of Language
- ENG 332 The Psychology of Language
- ENG 385 Language and Gender or
  ENG 401 Advanced English Grammar
- ENG 405 Discourse Analysis or
  ENG 495 Seminar in English Language

**English Literature Concentration
Requirements (12 credits)**

- ENG 313 English Poetry and Prose II: 1800 to Present or
  ENG 316 Modern Drama and Beyond
- ENG 410 The American Novel or
  ENG 421 Early English Novel or
  ENG 430 Modern British Novel
- ENG 490 Senior Research Project
- ENG 495 Seminar in English Literature

**Proposed Sequence of Study
Bachelor of Arts in English Language and Literature (BAELL)
Concentrations: Language and Literature**

FIRST YEAR (30 credit hours) Language and Literature Concentrations			
Term	**Course #**	**Course Title**	**Credit**
Fall	WRI 101	Academic Writing	3
	MTH 100	Fundamentals of Logic and Geometry	3
	HSS XXX	Humanities/Social Sciences	3
	SCI XXX	Science	3
	ARA XXX	Arabic Heritage	3
		Total	**15**
Spring	WRI 102	Writing and Reading Across the Curriculum	3
	STA 202	Introduction to Statistics for Social Sciences	3
	HSS XXX	Humanities/Social Sciences	3
	SCI XXX	Science	3
	FRE XXX	Free Elective	3
		Total	**15**

SECOND YEAR (30 credit hours) Language and Literature Concentrations			
Term	**Course #**	**Course Title**	**Credit**
Fall	ENG 203 or ENG 204	Writing about Literature or Advanced Academic Writing	3
	ENG 223	Introduction to Language Study	3
	ENG 224	English Grammar	3
	HSS XXX	Humanities/Social Sciences	3
	FRE XXX	Free Elective	3
		Total	**15**
Spring	ENG 210	Introduction to Literature	3
	ENG 302	Stylistics	3
	ENG 226	Development of the English Language	3
	ELC XXX	English Language Competency	3
	HSS XXX	Humanities/Social Sciences	3
		Total	**15**

THIRD YEAR (30 credit hours) — Language Concentration			
Term	**Course #**	**Course Title**	**Credit**
Fall	ENG 214	Nineteenth Century American Literature	3
	ENG 234	Language in Society	3
	ENG 312	English Poetry and Prose I: Beginnings to 1800	3
	ENG 215	Contemporary World Literature	3
	HSS XXX	Humanities/Social Sciences	3
		Total	**15**
Spring	ENG 331	The Sound Patterns of Language	3
	ENG 300	Introduction to Literary Theory	3
	ENG 332	The Psychology of Language	3
	MJE XXX	Major Elective	3
	MJE XXX	Major Elective	3
		Total	**15**

FOURTH YEAR (30 credit hours) — Language Concentration			
Term	**Course #**	**Course Title**	**Credit**
Fall	ENG 405 or ENG 495	Discourse Analysis or Seminar in English Language	3
	ENG 385 or ENG 401	Language and Gender or Advanced English Grammar	3
	MJE XXX	Major Elective	3
	MJE XXX	Major Elective	3
	FRE XXX	Free Elective	3
		Total	**15**
Spring	MJE XXX	Major Elective	3
	MJE XXX	Major Elective	3
	MJE XXX	Major Elective	3
	FRE XXX	Free Elective	3
	FRE XXX	Free Elective	3
		Total	**15**

THIRD YEAR (30 credit hours) — Literature Concentration			
Term	**Course #**	**Course Title**	**Credit**
Fall	ENG 214	Nineteenth Century American Literature	3
	ENG 215	Contemporary World Literature	3
	ENG 312	English Poetry and Prose I: Beginnings to 1800	3
	MJE XXX	Major Elective	3
	HSS XXX	Humanities/Social Sciences	3
		Total	**15**
Spring	ENG 234	Language in Society	3
	ENG 300	Introduction to Literary Theory	3
	ENG 313 or ENG 316	English Poetry and Prose II: 1800 to Present or Modern Drama and Beyond	3
	MJE XXX	Major Elective	3
	MJE XXX	Major Elective	3
		Total	**15**

FOURTH YEAR (30 credit hours) — Literature Concentration			
Term	**Course #**	**Course Title**	**Credit**
Fall	ENG 410 or ENG 421 or ENG 430	The American Novel or Early English Novel or Modern British Novel	3
	MJE XXX	Major Elective	3
	MJE XXX	Major Elective	3
	MJE XXX	Major Elective	3
	FRE XXX	Free Elective	3
		Total	**15**
Spring	ENG 490	Senior Research Project	3
	ENG 495	Seminar in English Literature	3
	MJE XXX	Major Elective	3
	FRE XXX	Free Elective	3
	FRE XXX	Free Elective	3
		Total	**15**

Minor in Education

Cindy Gunn, Coordinator

The minor in education prepares students to be lifelong learners adopting a self-reflective approach. Education courses prepare students to critically analyze and reflect upon a variety of global and regional issues in education.

Students enrolling in the education minor should have normally completed a minimum of 30 credits of course work and be in good academic standing.

The following rules apply:

- The minor consists of a minimum of 18 credits, including at least nine credits in courses at or above the 300 level.
- At least nine credits of the 18 credits required for the minor must be taken in residence at AUS.
- At least six credits of the nine credits at or above the 300 level must be taken in residence at AUS.
- A grade of at least C- in each course and a GPA of at least 2.00 must be earned in courses taken to satisfy the minor.

Students seeking a minor in education must complete the following courses or their equivalents. All course prerequisites must be satisfied.

Minor Requirements (6 credits)
- EDU 210 Philosophy of Education
- EDU 220 Introduction to Teaching

**Minor Electives
(minimum of 12 credits)**
Students must complete a minimum of 12 credits in courses selected from the following list:

- EDU 225 Globalization and Education
- EDU 294/394/494 Special Topics in Education
- EDU 307 Teaching and Learning in an Electronic Environment
- EDU 309 Classroom Discourse
- EDU 319 Teaching and Learning in a Foreign Language
- EDU 325 Methodology and Materials Development
- EDU 329 Curriculum Development
- PSY 302 Developmental Psychology

Minor in English Language

The minor in English language is for all students pursuing other majors who are interested in the nature of language, the tool of communication that makes us human. It provides training in linguistic analysis and enhances students' cross-disciplinary interests in language-related issues.

A minor in English language:

- helps students to understand the history and structure of English
- helps students to understand the relationship between society and language
- equips students with the necessary tools to compare languages across cultures in a multilingual and multicultural world

Students enrolling in the English language minor should have normally completed a minimum of 30 credits of course work and be in good academic standing.

The following rules apply:

- The minor consists of a minimum of 18 credits, including at least nine credits in courses at or above the 300 level.
- At least six credits of the nine credits at or above the 300 level must be taken in residence at AUS.
- At least nine credits of the 18 credits required for the minor must be taken in residence at AUS.
- A grade of at least C- in each course and a GPA of at least 2.00 must be earned in courses taken to satisfy the minor.

Students seeking a minor in English language must complete the following courses or their equivalent. All course prerequisites must be satisfied.

This minor is not open to English language and literature students.

Minor Requirements (9 credits)
- ENG 223 Introduction to Language Study
- ENG 224 English Grammar
- ENG 226 Development of the English Language or
  ENG 234 Language in Society

**Minor Electives
(minimum of 9 credits)**
Students must complete a minimum of nine credits in courses selected from the following list:

- ENG 302 Stylistics
- ENG 331 The Sound Patterns of Language
- ENG 332 The Psychology of Language
- ENG 385 Language and Gender
- ENG 394/494 Special Topics in English Language

- ENG 401 Advanced English Grammar
- ENG 405 Discourse Analysis
- ENG 495 Seminar in English Language

Minor in English Literature

The minor in English literature enables students in other majors to experience the ways in which literature expands our knowledge of human nature and our capacity for empathy. It also provides rigorous training in closely reading literary texts; constructing complex, sophisticated arguments; and analyzing the nuances of language.

A minor in English literature:

- increases students' awareness of the complexity and diversity of the literary culture of the English-speaking world
- increases awareness of the origins of the literary traditions and beliefs that continue to shape and reflect the global English-speaking community

Students enrolling in the English literature minor should have normally completed a minimum of 30 credits of course work and be in good academic standing.

The following rules apply:

- The minor consists of a minimum of 18 credits, including at least nine credits in courses at or above the 300 level.
- At least nine credits of the 18 credits required for the minor must be taken in residence at AUS.
- At least six credits of the nine credits at or above the 300 level must be taken in residence at AUS.
- A grade of at least C- in each course and a GPA of at least 2.00 must be earned in courses taken to satisfy the minor.

Students seeking a minor in English literature must complete the following courses or their equivalent. All course prerequisites must be satisfied.

This minor is not open to English language and literature students.

Minor Requirements (6 credits)
- ENG 210 Introduction to Literature
- ENG 215 Contemporary World Literature

**Minor Electives
(minimum of 12 credits)**
Students must complete any four courses at or above the 300 level in English literature for a minimum of 12 credits, including ENG 320/MCM 320, MCM 378 and MCM 393.

Department of International Studies

Stephen Keck, Head

Faculty

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Bachelor of Arts in International Studies (BAIS)

Sharjah's history as an important trading center and meeting place of many cultures makes American University of Sharjah an especially appropriate place for international studies. The interdisciplinary program in international studies offers students a unique opportunity to prepare for an increasingly complex global political and business environment. Weaving together strands from all the social sciences, as well as international law, cultural studies and literature, into a coherent and comprehensive program, the international studies curriculum assists students in acquiring a broad understanding of world cultures and events. This understanding, supplemented with the specialized study provided in the international relations, international economics, Arab studies and Western studies concentrations, prepares students who are uniquely qualified for positions in international business, international agencies and government service.

Program Mission

The Department of International Studies offers opportunities to develop an appreciation for and fuller understanding of global issues within the context of a diverse multidisciplinary curriculum. Courses encourage students to develop a critical awareness of the ways in which global forces shape and transform regional, national, political, social, cultural and economic change. The Bachelor of Arts in International Studies degree program seeks to provide a foundation for assuming leadership roles in international organizations. Concentrations within the degree program encourage students to deepen their engagement with one or more of the areas introduced in the core requirements.

Program Goals

The Bachelor of Arts in International Studies program seeks to:

- provide an introduction to the disciplines that focus on how global forces influence political, social, cultural and economic change
- enable students to think critically about global issues from a variety of disciplinary perspectives
- provide opportunities to consider the place of the Middle East and the Arab world in international affairs and the study of international relations
- demonstrate an understanding of the roles of governmental and non-governmental organizations
- create a challenging intellectual environment that encourages the development of the problem-solving capabilities necessary for dealing with change in a global context

Program Outcomes

Bachelor of Arts in International Studies

Upon graduation from the Bachelor of Arts in International Studies program, students will be able to:

- demonstrate an understanding of the basic concepts, analytical perspectives and methodologies employed in the disciplines of anthropology, economics, history, geography and political science
- employ the critical skills necessary for evaluating primary and secondary sources for their validity, accuracy and biases
- identify and explain key political, historical and cultural developments in the Arab world and the Middle East
- reflect on coursework to improve professional skills and better define career aspirations
- demonstrate the capacity for research in one of the major areas of study

Concentration in International Relations

Upon graduation from the Bachelor of Arts in International Studies program, students with a concentration in international relations will also be able to:

- assess the impact of economic activity upon local, regional, national and international developments
- illustrate the function, range and impact of international organizations
- explain the complex and diverse origins of wars and conflicts
- describe the relationship between law, politics and legal institutions in a global context

Concentration in International Economics

Upon graduation from the Bachelor of Arts in International Studies program, students with a concentration in international economics will also be able to:

- demonstrate proficiency in selected modeling frameworks and quantitative skills necessary for economic analysis
- identify and analyze the trade and monetary issues raised by a country's connections with the rest of the world
- explain the major differences between standards of living in developed and developing countries

Concentration in Arab Studies in a Global Context

Upon graduation from the Bachelor of Arts in International Studies program, students with a concentration in Arab studies in a global context will also be able to:

- identify seminal events and trends that have contributed to the formation of the contemporary Arab world
- employ sources from literature, history and political science to analyze the Arab world within a global context
- explain the developments that led to the formation of the Arab Gulf states

Concentration in Western Studies

Upon graduation from the Bachelor of Arts in International Studies program, students with a concentration in Western studies will also be able to:

- assess major philosophical ideas and political dynamics that have shaped Western understanding
- distinguish the basic components of the American political system
- explain the cultural and political dynamics that shape East/West encounters

Degree Requirements

Students seeking a degree in international studies must choose one of the following concentrations:

- international relations
- international economics
- Arab studies in a global context
- Western studies

A minimum of 120 credits, including the following, is required:

- a minimum of 42 credits of general education requirements, including ENG 203 or ENG 204, MTH 100 or MTH 101, and STA 202
- a minimum of 39 credits in major requirements and major electives
- a minimum of 24 credits in concentration requirements and concentration electives
- a minimum of 15 credits of free electives
- a six-week internship in international studies (INS 497)
- a minimum CGPA of 2.00

Major Requirements (27 credits)

- ECO 201 Principles of Microeconomics
- ECO 202 Principles of Macroeconomics
- GEO 201 World Cultural Geography
- HIS 205 World History I [up to 1500] or
  HIS 206 World History II [1500 to present]
- HIS 221 History of Science and Technology or
  PHI 201 Introduction to Philosophy
- INS 205 World Cultures or
  SOC 201 Introduction to Sociology
- INS 322 Global Political Economy

- INS 497 Internship in International Studies
- POL 201 Introduction to Political Studies
- POL 202 Introduction to International Relations

Students are expected to have completed at least four of the ten core courses, including ECO 201 and ECO 202, by the end of the sophomore year.

**Major Electives
(minimum of 12 credits)**

Students must complete a minimum of 12 credits of major electives selected in consultation with their advisor. At least nine of these credits must be at the 300 level or above. Electives may be:

- any course from the following disciplines that is not required in the student's chosen concentration:
  - economics
  - education
  - geography
  - heritage management
  - history
  - international studies
  - philosophy
  - political science
  - psychology
  - public administration
  - sociology
  - theme
- any of the following courses:
  - ENG 225 Writing for Business
  - ENG 320/MCM 320 Intercultural Communication
  - ENV 100 Principles of Environmental Science
  - ENV 201 Fundamentals of Environmental Science
  - ENV 261 Physical Geography
  - ENV 411 Environmental Assessment and Management
  - MCM 150 Introduction to Mass Communication Studies
  - MCM 225 Theories of Mass Communication
  - MCM 265 Principles of Public Relations
  - MCM 275 Principles of Journalism
  - MCM 300 Mass Communication Research Methods

  - MCM 329 Mass Communication and Society
  - MCM 360 Crisis and Conflict Management
  - MCM 371 News Writing
  - MCM 374 Feature Writing
  - MCM 380 Persuasive Communication
  - MCM 383 Organizational Communication and Leadership
  - MCM 463 International Public Relations
  - MCM 467 Public Relations for Non-Profit Organizations
  - MCM 471 Advanced News Writing
  - MCM 481 International Mass Communication

Concentration in International Relations (minimum of 24 credits)

Students who select the international relations concentration will examine the many ways in which the people of different cultures and nations interact with each other. This concentration provides students with an opportunity to acquire an informed perspective on national and international policies, public international law, world trade patterns, causes and remedies for conflict between nations, and the social and cultural interactions between nations. Students who select this course of study will be prepared for careers in law and diplomacy, international organizations, government, international business, travel and tourism, and the media.

*Concentration Requirements
(18 credits)*

- ECO 305 International Trade or
  ECO 321 Comparative Economic Systems or
  ECO 333 Islamic Economics or
  ECO 345 Public Choice
- INS 301 Globalization
- INS 495 Senior Seminar
- POL 302 Law and Diplomacy or
  POL 305 Public International Law
- POL 304/SOC 304 International Organizations
- POL 307 Wars, Conflicts and Diplomacy

*Concentration Electives
(minimum of 6 credits)*

Students must complete a minimum of six credits in courses selected from the following list:

- ECO 306 International Monetary Economics
- ECO 310 Development Economics

- INS 325 Imperialism
- INS 394/494 Special Topics in International Studies
- INS 400 Ethnic Politics in the Developing World
- INS 413 Political Economy of the Arab World
- INS 414 Political Economy of the Asia Pacific Region

- INS 415 War and Peace in the Middle East
- PHI 305 Advanced Social Political Philosophy
- POL 300 Comparative Politics
- POL 308 American Foreign Policy
- POL 309 The American Political System

**Proposed Sequence of Study
Bachelor of Arts in International Studies (BAIS)
Concentration: International Relations**

FIRST YEAR (30 credit hours)			
Term	**Course #**	**Course Title**	**Credit**
Fall	WRI 101	Academic Writing	3
	ECO 201	Principles of Microeconomics	3
	MTH 100 or MTH 101	Fundamentals of Logic and Geometry or Mathematics for Business I	3
	ARA XXX	Arabic Heritage	3
	SCI XXX	Science	3
		Total	**15**
Spring	GEO 201	World Cultural Geography	3
	WRI 102	Writing and Reading Across the Curriculum	3
	ECO 202	Principles of Macroeconomics	3
	STA 202	Introduction to Statistics for Social Sciences	3
	SCI XXX	Science	3
		Total	**15**

SECOND YEAR (30 credit hours)			
Term	**Course #**	**Course Title**	**Credit**
Fall	POL 201	Introduction to Political Studies	3
	ENG 203 or ENG 204	Writing About Literature or Advanced Academic Writing	3
	HIS 205 or HIS 206	World History I [up to 1500] or World History II [1500 to present]	3
	HSS XXX	Humanities/Social Sciences	3
	HSS XXX	Humanities/Social Sciences	3
		Total	**15**
Spring	POL 202	Introduction to International Relations	3
	PHI 201 or HIS 221	Introduction to Philosophy or History of Science and Technology	3
	INS 205 or SOC 201	World Cultures or Introduction to Sociology	3
	ELC XXX	English Language Competency	3
	FRE XXX	Free Elective	3
		Total	**15**

THIRD YEAR (30 credit hours)			
Term	**Course #**	**Course Title**	**Credit**
Fall	POL 304/ SOC 304	International Organizations	3
	POL 307	Wars, Conflicts and Diplomacy	3
	ECO 305 or ECO 321 or ECO 333	International Trade or Comparative Economic Systems or Islamic Economics	3
	INS 301	Globalization	3
	HSS XXX	Humanities/Social Sciences	3
		Total	**15**
Spring	POL 302 or POL 305	Law and Diplomacy or Public International Law	3
	INS 322	Global Political Economy	3
	CNE XXX	Concentration Elective	3
	HSS XXX	Humanities/Social Sciences	3
	HSS XXX	Humanities/Social Sciences	3
		Total	**15**
Summer	INS 497	Internship in International Studies	0

FOURTH YEAR (30 credit hours)			
Term	**Course #**	**Course Title**	**Credit**
Fall	INS 495	Senior Seminar	3
	MJE XXX	Major Elective	3
	MJE XXX	Major Elective	3
	CNE XXX	Concentration Elective	3
	FRE XXX	Free Elective	3
		Total	**15**
Spring	MJE XXX	Major Elective	3
	MJE XXX	Major Elective	3
	FRE XXX	Free Elective	3
	FRE XXX	Free Elective	3
	FRE XXX	Free Elective	3
		Total	**15**

Concentration in International Economics (minimum of 24 credits)

The international economics concentration offers students a sound foundation in the principles of economics combined with specialized study in international trade, finance, political economy and economic development. The objective of the program is twofold. First, for terminal degree students, the objective is to deal with the numerous complex issues raised by a country's economic connections with the rest of the world, with special emphasis on a country that has not yet reached the status of being "developed" as defined by the standards of international economics. Second, for students planning to pursue graduate studies, the objective is to prepare them for the more rigorous requirements of graduate programs in international economics and related subjects.

Concentration Requirements (18 credits)

- ECO 301 Intermediate Microeconomics
- ECO 302 Intermediate Macroeconomics
- ECO 305 International Trade
- ECO 306 Monetary Economics
- ECO 310 Development Economics
- INS 495 Senior Seminar

Concentration Electives (minimum of 6 credits)

Students must complete a minimum of six credits in courses selected from the following list:

- ECO 315 Economics of the Middle East
- ECO 325 Public Economics
- ECO 326 Economics and the Law
- ECO 351 Introduction to Econometrics
- ECO 404 Economics of Environmental and Natural Resources
- INS 301 Globalization
- INS 394/494 Special Topics in International Studies
- INS 413 Political Economy of the Arab World
- INS 414 Political Economy of the Asia Pacific Region
- POL 302 Law and Diplomacy
- POL 304/SOC 304 International Organizations
- POL 305 Public International Law

Proposed Sequence of Study
Bachelor of Arts in International Studies (BAIS)
Concentration: International Economics

FIRST YEAR (30 credit hours)			
Term	Course #	Course Title	Credit
Fall	WRI 101	Academic Writing	3
	ECO 201	Principles of Microeconomics	3
	MTH 100 or MTH 101	Fundamentals of Logic and Geometry or Mathematics for Business I	3
	ARA XXX	Arabic Heritage	3
	SCI XXX	Science	3
		Total	15
Spring	WRI 102	Writing and Reading Across the Curriculum	3
	ECO 202	Principles of Macroeconomics	3
	STA 202	Introduction to Statistics for Social Sciences	3
	MJE XXX	Major Elective	3
	SCI XXX	Science	3
		Total	15

SECOND YEAR (30 credit hours)			
Term	Course #	Course Title	Credit
Fall	POL 201	Introduction to Political Studies	3
	ENG 203 or ENG 204	Writing about Literature or Advanced Academic Writing	3
	HIS 205 or HIS 206	World History I [up to 1500] or World History II [1500 to present]	3
	INS 205 or SOC 201	World Cultures or Introduction to Sociology	3
	GEO 201	World Cultural Geography	3
		Total	15
Spring	POL 202	Introduction to International Relations	3
	HIS 221 or PHI 201	History of Science and Technology or Introduction to Philosophy	3
	ELC XXX	English Language Competency	3
	HSS XXX	Humanities/Social Sciences	3
	FRE XXX	Free Elective	3
		Total	15

THIRD YEAR (30 credit hours)			
Term	Course #	Course Title	Credit
Fall	ECO 302	Intermediate Macroeconomics	3
	ECO 305	International Trade	3
	CNE XXX	Concentration Elective	3
	HSS XXX	Humanities/Social Sciences	3
	HSS XXX	Humanities/Social Sciences	3
		Total	15
Spring	ECO 301	Intermediate Microeconomics	3
	ECO 306	International Monetary Economics	3
	ECO 310	Development Economics	3
	INS 322	Global Political Economy	3
	HSS XXX	Humanities/Social Sciences	3
		Total	15
Summer	INS 497	Internship in International Studies	0

FOURTH YEAR (30 credit hours)			
Term	Course #	Course Title	Credit
Fall	INS 495	Senior Seminar	3
	CNE XXX	Concentration Elective	3
	HSS XXX	Humanities/Social Sciences	3
	FRE XXX	Free Elective	3
	FRE XXX	Free Elective	3
		Total	15
Spring	MJE XXX	Major Elective	3
	MJE XXX	Major Elective	3
	MJE XXX	Major Elective	3
	FRE XXX	Free Elective	3
	FRE XXX	Free Elective	3
		Total	15

Concentration in Arab Studies in a Global Context (minimum of 24 credits)

Arab Studies in a Global Context is an interdisciplinary program that aims to enhance understanding, especially among non-Arab students, of the Arab world, its people, history, economy, social life and culture. Unlike most Western programs in Arab studies, this concentration studies the Arab peoples, culture and institutions from an intellectually oriented Arab perspective. Students who select this concentration will be prepared for

careers in journalism and the media, diplomacy, government, international business and travel and tourism.

Concentration Requirements (minimum of 18 credits)
- ARA 310 Images of America in Arabic Literature and Film
- ARA 303 Classical Arab/Islamic Culture
- HIS 310 Modern Gulf History
- INS 413 Political Economy of the Arab World
- INS 495 Senior Seminar
- PHI 394/494 Special Topics in Philosophy

Concentration Electives (minimum of 6 credits)

Students must complete a minimum of six credits in courses selected from the following list:
- ARA 405 Literature of the Arabian Gulf
- ENG 315 East Meets West: Colonial and Post-Colonial Encounters
- HIS 307 Modern Palestinian History
- INS 394/494 Special Topics in International Studies

Proposed Sequence of Study
Bachelor of Arts in International Studies (BAIS)
Concentration: Arab Studies in a Global Context

FIRST YEAR (30 credit hours)			
Term	**Course #**	**Course Title**	**Credit**
Fall	WRI 101	Academic Writing	3
	ECO 201	Principles of Microeconomics	3
	MTH 100 or MTH 101	Fundamentals of Logic and Geometry or Mathematics for Business I	3
	ARA XXX	Arabic Heritage	3
	SCI XXX	Science	3
		Total	**15**
Spring	GEO 201	World Cultural Geography	3
	WRI 102	Writing and Reading Across the Curriculum	3
	ECO 202	Principles of Macroeconomics	3
	STA 202	Introduction to Statistics for Social Sciences	3
	SCI XXX	Science	3
		Total	**15**

SECOND YEAR (30 credit hours)			
Term	**Course #**	**Course Title**	**Credit**
Fall	POL 201	Introduction to Political Studies	3
	INS 205 or SOC 201	World Cultures or Introduction to Sociology	3
	ENG 203 or ENG 204	Genre Analysis or Advanced Academic Writing	3
	HIS 205 or HIS 206	World History I [up to 1500] or World History II [1500 to present]	3
	HSS XXX	Humanities/Social Sciences	3
		Total	**15**
Spring	POL 202	Introduction to International Relations	3
	ARA 310	Images of America in Arabic Literature and Film	3
	HIS 310	Modern Gulf History	3
	PHI 201 or HIS 221	Introduction to Philosophy or History of Science and Technology	3
	ELC XXX	English Language Competency	3
		Total	**15**

THIRD YEAR (30 credit hours)			
Term	**Course #**	**Course Title**	**Credit**
Fall	PHI 394/494	Special Topics in Philosophy	3
	INS 322	Global Political Economy	3
	MJE XXX	Major Elective	3
	HSS XXX	Humanities/Social Sciences	3
	FRE XXX	Free Electives	3
		Total	**15**
Spring	ARA 303	Classical Arab/Islamic Culture	3
	INS 413	Political Economy of the Arab World	3
	HSS XXX	Humanities/Social Sciences	3
	HSS XXX	Humanities/Social Sciences	3
	HSS XXX	Humanities/Social Sciences	3
		Total	**15**
Summer	INS 497	Internship in International Studies	0

FOURTH YEAR (30 credit hours)			
Term	**Course #**	**Course Title**	**Credit**
Fall	INS 495	Senior Seminar	3
	CNE XXX	Concentration Elective	3
	CNE XXX	Concentration Elective	3
	FRE XXX	Free Elective	3
	FRE XXX	Free Elective	3
		Total	**15**
Spring	MJE XXX	Major Elective	3
	MJE XXX	Major Elective	3
	MJE XXX	Major Elective	3
	FRE XXX	Free Elective	3
	FRE XXX	Free Elective	3
		Total	**15**

Concentration in Western Studies (minimum of 24 credits)

Despite its importance, there is no institution or academic program in the Arab world devoted to the systematic, scholarly study of the West. This concentration seeks to fill this gap with a course of study focused on the West: its ideologies, systems of belief, history, political and administrative systems, economics, social life, culture and traditions. Designed especially for students from the Arab world, this course of study will give students an understanding of Western societies and peoples. Students who select this concentration will be prepared for careers in law and diplomacy, international business, travel and tourism, government and the media. Students will also be prepared for graduate studies in Western academic institutions.

Concentration Requirements (15 credits)

- ENG 315 East Meets West: Colonial and Post-Colonial Encounters
- INS 301 Globalization
- INS 495 Senior Seminar
- PHI 303 Political Philosophy
- POL 309 The American Political System

Concentration Electives (minimum of 9 credits)

Students must complete a minimum of nine credits in courses selected from the following list:

- ECO 305 International Trade
- ECO 306 International Monetary Economics
- HIS 201 Western Cultural Studies I
- HIS 202 Western Cultural Studies II
- HIS 210 The Making of Modern Europe
- INS 394/494 Special Topics in International Studies
- PBA 302 Comparative Public Administration Systems
- POL 302 Law and Diplomacy
- POL 304/SOC 304 International Organizations
- POL 305 Public International Law

Proposed Sequence of Study
Bachelor of Arts in International Studies (BAIS)
Concentration: Western Studies

FIRST YEAR (30 credit hours)			
Term	**Course #**	**Course Title**	**Credit**
Fall	WRI 101	Academic Writing	3
	ECO 201	Principles of Microeconomics	3
	MTH 100 or MTH 101	Fundamentals of Logic and Geometry or Mathematics for Business I	3
	ARA XXX	Arabic Heritage	3
	SCI XXX	Science	3
		Total	15
Spring	GEO 201	World Cultural Geography	3
	WRI 102	Writing and Reading Across the Curriculum	3
	ECO 202	Principles of Macroeconomics	3
	STA 202	Introduction to Statistics for Social Sciences	3
	SCI XXX	Science	3
		Total	15

SECOND YEAR (30 credit hours)			
Term	**Course #**	**Course Title**	**Credit**
Fall	POL 201	Introduction to Political Studies	3
	ENG 203 or ENG 204	Writing about Literature or Advanced Academic Writing	3
	HSS XXX	Humanities/Social Sciences	3
	HIS 205 or HIS 206	World History I [up to 1500] or World History II [1500 to present]	3
	HSS XXX	Humanities/Social Sciences	3
		Total	15
Spring	POL 202	Introduction to International Relations	3
	INS 205 or SOC 201	World Cultures or Introduction to Sociology	3
	PHI 201 or HIS 221	Introduction to Philosophy or History of Science and Technology	3
	ELC XXX	English Language Competency	3
	FRE XXX	Free Elective	3
		Total	15

THIRD YEAR (30 credit hours)			
Term	**Course #**	**Course Title**	**Credit**
Fall	POL 309	The American Political System	3
	ENG 315	East Meets West: Colonial and Post-Colonial Encounters	3
	CNE XXX	Concentration Elective	3
	HSS XXX	Humanities/Social Sciences	3
	HSS XXX	Humanities/Social Sciences	3
		Total	15
Spring	INS 322	Global Political Economy	3
	PHI 303	Political Philosophy	3
	INS 301	Globalization	3
	CNE XXX	Concentration Elective	3
	HSS XXX	Humanities/Social Sciences	3
		Total	15
Summer	INS 497	Internship in International Studies	0

FOURTH YEAR (30 credit hours)			
Term	**Course #**	**Course Title**	**Credit**
Fall	INS 495	Senior Seminar	3
	CNE XXX	Concentration Elective	3
	MJE XXX	Major Elective	3
	MJE XXX	Major Elective	3
	FRE XXX	Free Elective	3
		Total	15
Spring	MJE XXX	Major Elective	3
	MJE XXX	Major Elective	3
	FRE XXX	Free Elective	3
	FRE XXX	Free Elective	3
	FRE XXX	Free Elective	3
		Total	15

Minor in American Studies

The minor in American studies seeks to give students a broad understanding of American society, culture and politics. Students completing the minor will have studied both the development and character of the United States and its international impact through courses selected across academic disciplines.

Students enrolling in the American studies minor should have normally completed a minimum of 30 credits of course work and be in good academic standing.

The following rules apply:

- The minor consists of a minimum of 18 credits, including at least nine credits in courses at or above the 300 level.
- At least nine credits of the 18 credits required for the minor must be taken in residence at AUS.
- At least six credits of the nine credits at or above the 300 level must be taken in residence at AUS.
- A grade of at least C- in each course and a GPA of at least 2.00 must be earned in courses taken to satisfy the minor.

Students seeking a minor in American studies must complete the following courses or their equivalent. All course prerequisites must be satisfied.

Minor Requirements (9 credits)
- HIS 240 Introduction to American History
- POL 208 Introduction to American Government
- SOC 220 American Society

Minor Electives (minimum of 9 credits)

Students must complete a minimum of nine credits in courses selected from the following list:

- AMS 394/494 Special Topics in American Studies
- ENG 314 Twentieth Century American Literature
- ENG 410 The American Novel
- HIS 311 America and the Middle East
- POL 308 American Foreign Policy
- POL 309 The American Political System

Minor in Governmental Studies

The minor in governmental studies allows students to acquire more specialized training in political studies. It prepares students for graduate work in political science and international relations, as well as in careers in foreign service, international and regional organizations, and public policy making.

Students enrolling in the governmental studies minor should have normally completed a minimum of 30 credits of course work and be in good academic standing.

The following rules apply:

- The minor consists of a minimum of 18 credits, including at least nine credits in courses at or above the 300 level.
- At least nine credits of the 18 credits required for the minor must be taken in residence at AUS.
- At least six credits of the nine credits at or above the 300 level must be taken in residence at AUS.
- A grade of at least C- in each course and a GPA of at least 2.00 must be earned in courses taken to satisfy the minor.

Students seeking a minor in governmental studies must complete the following courses or their equivalent. All course prerequisites must be satisfied.

This minor is not open to international studies students.

Minor Requirements (9 credits)
- POL 201 Introduction to Political Studies
- POL 202 Introduction to International Relations
- POL 300 Comparative Politics

Minor Electives (9 credits)

Students must complete a minimum of nine credits in courses selected from the following list:

- INS 301 Globalization
- INS 322 Global Political Economy
- INS 495 Senior Seminar
- PHI 303 Political Philosophy
- POL 302 Law and Diplomacy
- POL 304/SOC 304 International Organizations
- POL 305 Public International Law
- POL 307 Wars, Conflicts and Diplomacy
- POL 309 The American Political System

Minor in History

The minor in history enables students to encounter the academic exploration of humanity's past. Students are introduced to both ancient and modern history, and they will also investigate both global and regional history. The minor also provides students with basic comprehension of historical method by exposing them to the sustained study of primary sources and theories of historical interpretation and by requiring them to become cognizant of independent historical research.

Students enrolling in the history minor should have normally completed a minimum of 30 credits of course work and be in good academic standing.

The following rules apply:

- The minor consists of a minimum of 18 credits, including at least nine credits in courses at or above the 300 level.
- At least nine credits of the 18 credits required for the minor must be taken in residence at AUS.
- At least six credits of the nine credits at or above the 300 level must be taken in residence at AUS.
- A grade of at least C- in each course and a GPA of at least 2.00 must be earned in courses taken to satisfy the minor.

Students seeking a minor in history must complete the following courses or their equivalent. All the course prerequisites must be satisfied.

Minor Requirements (9 credits)
- HIS 205 World History I [up to1500]
- HIS 206 World History II [1500 to present]

Students will take one of the following regional options:

- HIS 204 Modern Arab History or

  HIS 210 The Making of Modern Europe or

  HIS 240 Introduction to American History

Minor Electives (minimum of 9 credits)

Students must complete a minimum of nine credits in courses selected from the following list:

- any HIS courses at the 300 level or above
- INS 325 Imperialism
- INS 394/494 Special Topics in International Studies (for topics with a historical focus)
- INS 415 War and Peace in the Middle East

Minor in International Studies

The minor in international studies introduces students to the interdisciplinary exploration of social issues at the individual, local, national, international and global levels. Theoretical and applied aspects of citizenship, civil society, governance and the domestic/international interface are explored in a variety of societal and organizational contexts.

Students enrolling in the international studies minor should have normally completed a minimum of 30 credits of course work and be in good academic standing.

The following rules apply:

- The minor consists of a minimum of 18 credits, including at least nine credits in courses at or above the 300 level.
- At least nine credits of the 18 credits required for the minor must be taken in residence at AUS.
- At least six credits of the nine credits at or above the 300 level must be taken in residence at AUS.
- A grade of at least C- in each course and a GPA of at least 2.00 must be earned in courses taken to satisfy the minor.

Students seeking a minor in international studies must complete the following courses or their equivalent. All course prerequisites must be satisfied.

This minor is not open to international studies students.

Minor Requirements (9 credits)

- INS 205 World Cultures or
  GEO 201 World Cultural Geography or
  SOC 201 Introduction to Sociology
- HIS 205 World History I [up to 1500] or
  HIS 206 World History II [1500 to present] or
  PHI 201 Introduction to Philosophy

- POL 201 Introduction to Political Studies

Minor Electives (9 credits)

Students must complete a minimum of nine credits in courses selected from the following list:

- INS 301 Globalization
- INS 322 Global Political Economy
- INS 495 Senior Seminar
- POL 302 Law and Diplomacy
- POL 304/SOC 304 International Organizations
- POL 305 Public International Law
- POL 307 Wars, Conflicts and Diplomacy

Minor in Philosophy

The philosophy minor develops students' natural reasoning. It also introduces students to the unanswered questions of the Western, Middle Eastern and Eastern traditions of wisdom.

Students enrolling in the philosophy minor should have normally completed a minimum of 30 credits of course work and be in good academic standing.

The following rules apply:

- The minor consists of a minimum of 18 credits, including at least nine credits in courses at or above the 300 level.
- At least nine credits of the 18 credits required for the minor must be taken in residence at AUS.
- At least six credits of the nine credits at or above the 300 level must be taken in residence at AUS.
- A grade of at least C- in each course and a GPA of at least 2.00 must be earned in courses taken to satisfy the minor.

Students seeking a minor in philosophy must complete the following courses or their equivalent. All course prerequisites must be satisfied.

Minor Requirements (9 credits)

- PHI 201 Introduction to Philosophy
- PHI 202 Introduction to Islamic Philosophy
- PHI 204 Ethics for Professionals or
  PHI 206 Ethics and Information Technology or

CMP 235 Ethics for Computing and Information Technology

Minor Electives (minimum of 9 credits)

Students must complete a minimum of nine credits in courses selected from the following list:

- ARA 402 Qur'anic Studies
- PHI 303 Political Philosophy
- PHI 304 Themes in Western Thought
- PHI 305 Advanced Social Political Philosophy
- PHI 309 Ethics and the Environment
- PHI 394/494 Special Topics in Philosophy
- PSY 305 Cognitive Psychology

Minor in Psychology

The minor in psychology develops students' sense of the psychological processes underlying people's behavior. It also introduces students to the theories and practices of experimental and clinical psychology, which prepares them for graduate work in various fields.

Students enrolling in the psychology minor should have normally completed a minimum of 30 credits of course work and be in good academic standing.

The following rules apply:

- The minor consists of a minimum of 18 credits, including at least nine credits in courses at or above the 300 level.
- At least nine credits of the 18 credits required for the minor must be taken in residence at AUS.
- At least six credits of the nine credits at or above the 300 level must be taken in residence at AUS.
- A grade of at least C- in each course and a GPA of at least 2.00 must be earned in courses taken to satisfy the minor.

Students seeking a minor in psychology must complete the following courses or their equivalent. All course prerequisites must be satisfied.

Minor Requirements (9 credits)

- PSY 101 General Psychology
- PSY 210 Scientific Method in Psychology

- STA 201 Introduction to Statistics for Engineering and Natural Sciences or

  STA 202 Introduction to Statistics for Social Sciences or

  QBA 201 Quantitative Business Analysis or

  NGN 111 Introduction to Statistical Analysis plus one to three credits in PSY courses

**Minor Electives
(minimum of 9 credits)**
Students must complete a minimum of nine credits in PSY courses at the 300 level or above.

Minor in Women's Studies

Nawar Golley, Coordinator

The minor in women's studies aspires to promote an understanding of women's achievements, contributions and experiences in their historical and social contexts. Women's studies courses provide students with opportunities to critically analyze theoretical frameworks related to women but within multicultural and multidisciplinary contexts.

The following rules apply:

- The minor consists of a minimum of 18 credits, including at least nine credits in courses at or above the 300 level.
- At least nine credits of the 18 credits required for the minor must be taken in residence at AUS.
- At least six credits of the nine credits at or above the 300 level must be taken in residence at AUS.
- A grade of at least C- in each course and a GPA of at least 2.00 must be earned in courses taken to satisfy the minor.

Students seeking a minor in women's studies must complete the following courses or their equivalents. All course prerequisites must be satisfied.

Minor Requirements (9 credits)
- HIS 208 Women in History
- WST 240 Introduction to Women's Studies
- WST 250 Women's Voices Across Cultures

**Minor Electives
(minimum of 9 credits)**
In addition to the minor requirements, students must complete three courses selected from any WST course and/or ENG 385 for a minimum of nine credits.

Department of Mass Communication

Timothy Walters, Acting Head

Faculty
Ilhem Allagui
Abeer Al-Najjar
Ralph Berenger
Peggy Bieber-Roberts
Harris Breslow
Ana Milena Gavassa
Joseph Gibbs
Mahboub Hashem
Mohammed Ibahrine
Don Love
Hania Nashef
Tina Richardson
Susan Smith
Mustafa Taha

Bachelor of Arts in Mass Communication (BAMC)

The Bachelor of Arts in Mass Communication fulfills the AUS mission by providing students with state-of-the-art knowledge in their areas of concentration and the discipline of mass communication in general in order to serve the needs of the region and to encourage students' personal and professional growth and development. The Bachelor of Arts in Mass Communication is modeled on similar degree programs found in the United States and is adapted to the specific pedagogic challenges and requirements of the GCC region. Additionally, the Department of Mass Communication strives to maintain close contact with its students and alumni in order to foster their personal and professional growth, their maturity and their sense of social responsibility with particular reference to the profound social and cultural influence they will have as members of the mass media industry.

Program Mission
The mission of the Department of Mass Communication is to provide students with a balanced foundation of both technical and academic knowledge of the discipline of mass communication in general and the specific professional concentrations offered by the department: advertising, journalism

and public relations. By offering academic and practical knowledge, the department's curriculum aims to facilitate the development of professionally skilled students who bring a critically informed perspective to their future careers.

Program Goals
The Bachelor of Arts in Mass Communication program strives to:

- provide students with a thorough grounding in the variety of perspectives found in the academic discipline of mass communication, thus fostering students' critical and analytical faculties with respect to the mass media
- furnish students with the requisite theoretical and strategic knowledge required of professionals in the mass media industry
- prepare students for positions in the mass media industry requiring a high degree of technical proficiency
- equip graduates with the required competencies to assume entry-level positions in their chosen fields of endeavor in the mass media industry

The Bachelor of Arts in Mass Communication program's concentration in advertising strives to facilitate the development of professionally skilled students for positions in the field of advertising

The Bachelor of Arts in Mass Communication program's concentration in journalism strives to facilitate the development of professionally skilled students for positions in the fields of print and broadcast journalism

The Bachelor of Arts in Mass Communication program's concentration in public relations strives to facilitate the development of professionally skilled students for positions in the field of public relations.

Program Outcomes

Bachelor of Arts in Mass Communication

Upon graduation from the Bachelor of Arts in Mass Communication program, students should be able to:

- differentiate, articulate and critically analyze the dominant quantitative

and qualitative research methods and paradigms found in the discipline of mass communication and to employ these research methods in their professional careers

- understand and articulate the role that the mass media play in the production of everyday experience, culture and belief, and critically analyze the content of the mass media by explaining the nature of its production, meaning and effects
- employ digital technology in the production of mass media content for print, web and/or broadcast media

Concentration in Advertising

Upon graduation from the Bachelor of Arts in Mass Communication program, students with a concentration in advertising should also be able to:

- demonstrate knowledge of the latest institutional, methodological and professional developments in the field of advertising
- skillfully employ best practices found in the field of advertising

Concentration in Journalism

Upon graduation from the Bachelor of Arts in Mass Communication program, students with a concentration in journalism should also be able to:

- demonstrate knowledge of the latest institutional, methodological and professional developments in the fields of print and broadcast journalism
- skillfully employ best practices found in the fields of print and broadcast journalism

Concentration in Public Relations

Upon graduation from the Bachelor of Arts in Mass Communication program, students with a concentration in public relations should also be able to:

- demonstrate knowledge of the latest institutional, methodological and professional developments in the field of public relations
- skillfully employ best practices found in the field of public relations

Achievement of Outcomes

The outcomes of the Bachelor of Arts

in Mass Communication program are achieved through a combination of:

- coursework related to the academic discipline of mass communication
- practicum-based courses related to the students' chosen professional concentrations
- capstone courses that function as tests of students' cumulative knowledge in their chosen professional concentrations and/or academic interests
- internships/field work in students' chosen professional concentrations and/or academic interests in fulfillment of students' university internship requirements

Curriculum

The Department of Mass Communication offers students the opportunity to specialize in one of three professional concentrations—advertising, journalism and public relations—as well as the option of a general mass communication program. Students can also choose to specialize in a combination of any two of the professional concentrations.

Advertising

Students selecting the advertising concentration receive exposure to an integrated marketing communication approach to advertising and strategic communication. A combination of advertising, public relations and marketing courses prepare students for careers as advertising account executives, creative specialists, media planners, media sales representatives and marketing communication researchers.

Journalism

The journalism concentration prepares students for careers in newspapers, magazines, broadcasting, wire services, special interest publications and online publications. This curriculum offers students additional preparation to find careers as print and broadcast reporters, editors, producers, copywriters, scriptwriters, news/project managers, copy editors,

correspondents, columnists or editorial writers.

Public Relations

Students selecting the public relations concentration receive exposure to a wide range of integrated communication methods and practices. Students are also led through an extensive examination of theoretical and pragmatic communication knowledge designed to prepare them for successful strategic management careers in corporate, government and non-profit organizations worldwide. The profession has experienced substantial growth and heightened stature over the past several decades—a global trend that is projected to continue throughout the 21st century.

Admission to the Program

Admission to the program follows the university's undergraduate admission requirements. AUS students transferring into the program must have a cumulative GPA of 2.00 or higher.

Degree Requirements

A minimum of 120 credits, including the following, is required:

- a minimum of 42 credit hours of general education requirements
- a minimum of 36 credit hours of MCM major requirements and major electives
- a minimum of 27 credit hours of concentration requirements and concentration electives for students selecting a concentration or a minimum of 27 credits hours of general mass communication requirements for students who select the general mass communication program
- six weeks or 240 hours of on-the-job training (MCM 497) with a professional firm
- a minimum of 15 credit hours of free electives from courses at the 100 level or above
- a minimum CGPA of 2.00

General Education Requirements (minimum of 42 credits)

Every student must successfully complete a minimum of 42 credits of the following general education requirements (GERs) with a minimum grade of C- to graduate:

- English language competency requirement (minimum of 12 credits)
- Arabic heritage requirement (minimum of 3 credits)
- Mathematics and statistics requirement (minimum of 6 credits)
- Science requirement (minimum of 6 credits)
- Humanities and social science requirement (minimum of 15 credits)

Students must successfully complete the following courses as part of their GER:

- ENG 203 Writing about Literature, or ENG 204 Advanced Academic Writing
- ENG 208 Public Speaking
- MTH 100 Fundamentals of Logic and Geometry
- STA 202 Introduction to Statistics for Social Sciences

Major Requirements (18 credits)

- MCM 150 Introduction to Mass Communication Studies
- MCM 225 Theories of Mass Communication
- MCM 231 Writing for Mass Communication
- MCM 300 Mass Communication Research Methods
- MCM 320/ENG 320 Intercultural Communication
- MCM 321 Mass Communication Law and Ethics
- MCM 497 Mass Communication Internship (0 credit)

Mass Communication Internship (MCM 497)

The internship comprises six weeks or 240 hours of on-the-job training with a professional firm. All students in the Department of Mass Communication must fulfill the internship requirement. Depending on their program concentrations, students will choose to do their internship in media companies, advertising agencies or in public relations companies to add practical training to their academic learning.

For details on internship eligibility and registration, please refer to Internship Registration in the Academic Policies and Regulations section earlier in this catalog.

Major Electives (minimum of 18 credits)

Students must complete six courses, for a minimum of 18 credits, at the 200 level or above from any courses in DES, ECO, ENG, INS, MCM, MGT, MKT, MUM, POL, TRA or VIS.

Concentration in Advertising (minimum of 27 credits)

Concentration Requirements (21 credits)

- MCM 100 Introduction to Digital Media Design
- MCM 255 Principles of Advertising
- MCM 351 Advertising Copy and Layout
- MCM 431 Strategic Communications Research
- MCM 453 Advertising Media Planning
- MCM 455 Advertising Campaigns or

  MCM 485 Integrated Marketing Communication Campaigns
- MKT 201 Fundamentals of Marketing

Concentration Electives (minimum of 6 credits)

Students must complete a minimum of six credits in courses selected from the following list:

- MCM 265 Principles of Public Relations
- MCM 353 Direct Response Advertising
- MCM 394/494 Special Topics in Mass Communication
- MCM 401 Media Publications
- MCM 454 Case Studies in Advertising
- MCM 463 International Public Relations
- MCM 465 Public Relations Campaigns
- MCM 490 Senior Project
- MKT 301 Consumer Behavior
- MKT 302 Marketing Research
- MKT 303 E-Commerce

Proposed Sequence of Study
Bachelor of Arts in Mass Communication (BAMC)
Concentration: Advertising

FIRST YEAR (30 credit hours)			
Term	Course #	Course Title	Credit
Fall	MTH 100	Fundamentals of Logic and Geometry	3
	MCM 100	Introduction to Digital Media Design	3
	WRI 101	Academic Writing	3
	ARA XXX	Arabic Heritage	3
	SCI XXX	Science	3
		Total	**15**
Spring	WRI 102	Writing and Reading Across the Curriculum	3
	STA 202	Introduction to Statistics for Social Sciences	3
	ECO 201 (HSS)	Principles of Microeconomics	3
	HSS XXX	Humanities/Social Sciences	3
	SCI XXX	Science	3
		Total	**15**

SECOND YEAR (30 credit hours)			
Term	Course #	Course Title	Credit
Fall	ENG 203 or ENG 204	Writing About Literature or Advanced Academic Writing	3
	MCM 150	Introduction to Mass Communication Studies	3
	MKT 201	Fundamentals of Marketing	3
	HSS XXX	Humanities/Social Sciences	3
	HSS XXX	Humanities/Social Sciences	3
		Total	**15**
Spring	ENG 208	Public Speaking	3
	MCM 225	Theories of Mass Communication	3
	MCM 231	Writing for Mass Communication	3
	ENG 320/ MCM 320	Intercultural Communication	3
	HSS XXX	Humanities/Social Sciences	3
		Total	**15**

THIRD YEAR (30 credit hours)			
Term	Course #	Course Title	Credit
Fall	MCM 255	Principles of Advertising	3
	MCM 300	Mass Communication Research Methods	3
	MJE XXX	Major Elective	3
	MJE XXX	Major Elective	3
	FRE XXX	Free Elective	3
		Total	**15**
Spring	MCM 321	Mass Communication Law and Ethics	3
	MCM 351	Advertising Copy and Layout	3
	CNE XXX	Concentration Elective	3
	MJE XXX	Major Elective	3
	FRE XXX	Free Elective	3
		Total	**15**
Summer	MCM 497	Mass Communication Internship	0

FOURTH YEAR (30 credit hours)			
Term	Course #	Course Title	Credit
Fall	MCM 431	Strategic Communications Research	3
	MCM 453	Advertising Media Planning	3
	MJE XXX	Major Elective	3
	MJE XXX	Major Elective	3
	FRE XXX	Free Elective	3
		Total	**15**
Spring	MCM 455 or MCM 485	Advertising Campaigns or Integrated Marketing Communication Campaigns	3
	CNE XXX	Concentration Elective	3
	MJE XXX	Major Elective	3
	FRE XXX	Free Elective	3
	FRE XXX	Free Elective	3
		Total	**15**

**Concentration in Journalism
(minimum of 27 credits)**

*Concentration Requirements
(21 credits)*

- MCM 100 Introduction to Digital Media Design
- MCM 275 Principles of Journalism
- MCM 371 News Writing
- MCM 370 Broadcast Journalism
- MCM 470 Writing and Reporting for Broadcast News
- MCM 471 Advanced News Writing
- MCM 472 Editorial and Critical Writing

*Concentration Electives
(minimum of 6 credits)*

Students must complete a minimum of six credits in courses selected from the following list:

- MCM 281 Principles of Media Production and Performance
- MCM 374 Feature Writing
- MCM 375 Editing for the Print Media
- MCM 377 Photojournalism
- MCM 378/ENG 378 Literature as Film
- MCM 393/ENG 393 Shakespeare on Film
- MCM 394/494 Special Topics in Mass Communication

- MCM 401 Media Publications
- MCM 410 Media Producing and Project Management
- MCM 411 Multiple Camera Studio Production
- MCM 473 Writing for Multimedia
- MCM 475 Writing and Producing for Documentaries
- MCM 480 Critical Analysis of the Mass Media
- MCM 481 International Mass Communication
- MCM 491 Print Media Project

**Proposed Sequence of Study
Bachelor of Arts in Mass Communication (BAMC)
Concentration: Journalism**

FIRST YEAR (30 credit hours)			
Term	Course #	Course Title	Credit
Fall	WRI 101	Academic Writing	3
	MTH 100	Fundamentals of Logic and Geometry	3
	MCM 100	Introduction to Digital Media Design	3
	ARA XXX	Arabic Heritage	3
	SCI XXX	Science	3
		Total	**15**
Spring	WRI 102	Writing and Reading Across the Curriculum	3
	STA 202	Introduction to Statistics for Social Sciences	3
	HSS XXX	Humanities/Social Sciences	3
	HSS XXX	Humanities/Social Sciences	3
	SCI XXX	Science	3
		Total	**15**

SECOND YEAR (30 credit hours)			
Term	Course #	Course Title	Credit
Fall	ENG 203 or ENG 204	Writing About Literature or Advanced Academic Writing	3
	MCM 150	Introduction to Mass Communication Studies	3
	HSS XXX	Humanities/Social Sciences	3
	HSS XXX	Humanities/Social Sciences	3
	MJE XXX	Major Elective	3
		Total	**15**
Spring	ENG 208	Public Speaking	3
	MCM 225	Theories of Mass Communication	3
	MCM 231	Writing for Mass Communication	3
	ENG 320/ MCM 320	Intercultural Communication	3
	HSS XXX	Humanities/Social Sciences	3
		Total	**15**

THIRD YEAR (30 credit hours)			
Term	Course #	Course Title	Credit
Fall	MCM 275	Principles of Journalism	3
	MCM 300	Mass Communication Research	3
	MJE XXX	Major Elective	3
	MJE XXX	Major Elective	3
	FRE XXX	Free Elective	3
		Total	**15**
Spring	MCM 321	Mass Communication Law and Ethics	3
	MCM 371	News Writing	3
	MCM 370	Broadcast Journalism	3
	MJE XXX	Major Elective	3
	FRE XXX	Free Elective	3
		Total	**15**
Summer	MCM 497	Mass Communication Internship	0

FOURTH YEAR (30 credit hours)			
Term	Course #	Course Title	Credit
Fall	MCM 470	Writing and Reporting for Broadcast News	3
	MCM 471	Advanced News Writing	3
	CNE XXX	Concentration Elective	3
	MJE XXX	Major Elective	3
	FRE XXX	Free Elective	3
		Total	**15**
Spring	MCM 472	Editorial and Critical Writing	3
	CNE XXX	Concentration Elective	3
	MJE XXX	Major Elective	3
	FRE XXX	Free Elective	3
	FRE XXX	Free Elective	3
		Total	**15**

Concentration in Public Relations (minimum of 27 credits)

Concentration Requirements (21 credits)

- MCM 100 Introduction to Digital Media Design
- MCM 265 Principles of Public Relations
- MCM 361 Case Studies in Public Relations
- MCM 369 Public Relations Writing
- MCM 431 Strategic Communications Research
- MCM 465 Public Relations Campaigns or

MCM 485 Integrated Marketing Communication Campaigns

- MCM 469 Advanced Public Relations Writing

Concentration Electives (minimum of 6 credits)

Students must complete a minimum of six credits in courses selected from the following list:

- INS 301 Globalization
- MCM 255 Principles of Advertising
- MCM 275 Principles of Journalism
- MCM 329 Mass Communication and Society
- MCM 360 Crisis and Conflict Management
- MCM 371 News Writing
- MCM 377 Photojournalism
- MCM 380 Persuasive Communication
- MCM 394/494 Special Topics in Mass Communication
- MCM 401 Media Publications
- MCM 455 Advertising Campaigns
- MCM 463 International Public Relations
- MCM 467 Public Relations for Non-Profit Organizations
- MCM 490 Senior Project
- MGT 201 Fundamentals of Management
- MKT 201 Fundamentals of Marketing

Proposed Sequence of Study
Bachelor of Arts in Mass Communication (BAMC)
Concentration: Public Relations

FIRST YEAR (30 credit hours)

Term	Course #	Course Title	Credit
Fall	WRI 101	Academic Writing	3
	MTH 100	Fundamentals of Logic and Geometry	3
	MCM 100	Introduction to Digital Media Design	3
	ARA XXX	Arabic Heritage	3
	SCI XXX	Science	3
		Total	15
Spring	WRI 102	Writing and Reading Across the Curriculum	3
	STA 202	Introduction to Statistics for Social Sciences	3
	HSS XXX	Humanities/Social Sciences	3
	HSS XXX	Humanities/Social Sciences	3
	SCI XXX	Science	3
		Total	15

SECOND YEAR (30 credit hours)

Term	Course #	Course Title	Credit
Fall	ENG 203 or ENG 204	Writing About Literature or Advanced Academic Writing	3
	MCM 150	Introduction to Mass Communication Studies	3
	HSS XXX	Humanities/Social Sciences	3
	HSS XXX	Humanities/Social Sciences	3
	CNE XXX	Concentration Elective	3
		Total	15
Spring	ENG 208	Public Speaking	3
	MCM 225	Theories of Mass Communication	3
	MCM 231	Writing for Mass Communication	3
	ENG 320/ MCM 320	Intercultural Communication	3
	HSS XXX	Humanities/Social Sciences	3
		Total	15

THIRD YEAR (30 credit hours)

Term	Course #	Course Title	Credit
Fall	MCM 265	Principles of Public Relations	3
	MCM 300	Mass Communication Research Methods	3
	MJE XXX	Major Elective	3
	MJE XXX	Major Elective	3
	FRE XXX	Free Elective	3
		Total	15
Spring	MCM 321	Mass Communication Law and Ethics	3
	MCM 361	Case Studies in Public Relations	3
	MCM 369	Public Relations Writing	3
	MJE XXX	Major Elective	3
	FRE XXX	Free Elective	3
		Total	15
Summer	MCM 497	Mass Communication Internship	0

FOURTH YEAR (30 credit hours)

Term	Course #	Course Title	Credit
Fall	MCM 431	Strategic Communications Research	3
	MJE XXX	Major Elective	3
	MJE XXX	Major Elective	3
	CNE XXX	Concentration Elective	3
	FRE XXX	Free Elective	3
		Total	15
Spring	MCM 465 or MCM 485	Public Relations Campaigns or Integrated Marketing Communication Campaigns	3
	MCM 469	Advanced Public Relations Writing	3
	CNE XXX	Concentration Elective	3
	MJE XXX	Major Elective	3
	FRE XXX	Free Elective	3
	FRE XXX	Free Elective	3
		Total	15

Double Concentration

Students enrolled in the mass communication major may pursue a double concentration. Such students must fulfill the course requirements in both concentration areas. Courses used to fulfill the requirements of the first concentration can double count toward the second concentration. Once the degree requirements are met, any shortage of credits may be fulfilled by free electives. Double-concentration students generally require more than 120 credits to meet graduation requirements.

General Mass Communication Program (minimum of 27 credits)

Students who select the general mass communication program option must complete nine courses for a minimum of 27 credits from any of the mass communication (MCM) courses not listed in the major requirements.

Proposed Sequence of Study
Bachelor of Arts in Mass Communication (BAMC)
General Mass Communication Program

FIRST YEAR (30 credit hours)			
Term	Course #	Course Title	Credit
Fall	WRI 101	Academic Writing	3
	MTH 100	Fundamentals of Logic and Geometry	3
	MCM 100	Introduction to Digital Media Design	3
	ARA XXX	Arabic Heritage	3
	SCI XXX	Science	3
		Total	15
Spring	WRI 102	Writing and Reading Across the Curriculum	3
	STA 202	Introduction to Statistics for Social Sciences	3
	HSS XXX	Humanities/Social Sciences	3
	HSS XXX	Humanities/Social Sciences	3
	SCI XXX	Science	3
		Total	15

SECOND YEAR (30 credit hours)			
Term	Course #	Course Title	Credit
Fall	ENG 203 or ENG 204	Writing About Literature or Advanced Academic Writing	3
	MCM 150	Introduction to Mass Communication Studies	3
	HSS XXX	Humanities/Social Sciences	3
	HSS XXX	Humanities/Social Sciences	3
	MJE XXX	Major Elective	3
		Total	15
Spring	ENG 208	Public Speaking	3
	MCM 225	Theories of Mass Communication	3
	MCM 231	Writing for Mass Communication	3
	ENG 20/ MCM 320	Intercultural Communication	3
	HSS XXX	Humanities/Social Sciences	3
		Total	15

THIRD YEAR (30 credit hours)			
Term	Course #	Course Title	Credit
Fall	MCM 300	Mass Communication Research Methods	3
	MJE XXX	Major Elective	3
	CNE XXX	Concentration Elective	3
	CNE XXX	Concentration Elective	3
	FRE XXX	Free Elective	3
		Total	15
Spring	MCM 321	Mass Communication Law and Ethics	3
	CNE XXX	Concentration Elective	3
	CNE XXX	Concentration Elective	3
	MJE XXX	Major Elective	3
	FRE XXX	Free Elective	3
		Total	15
Summer	MCM 497	Mass Communication Internship	0

FOURTH YEAR (30 credit hours)			
Term	Course #	Course Title	Credit
Fall	CNE XXX	Concentration Elective	3
	CNE XXX	Concentration Elective	3
	MJE XXX	Major Elective	3
	MJE XXX	Major Elective	3
	FRE XXX	Free Elective	3
		Total	15
Spring	CNE XXX	Concentration Elective	3
	CNE XXX	Concentration Elective	3
	MJE XXX	Major Elective	3
	FRE XXX	Free Elective	3
	FRE XXX	Free Elective	3
		Total	15

Minor in Mass Communication

Students applying to the mass communication minor should have normally completed a minimum of 30 credits of course work and be in good academic standing.

The following rules apply:

• The minor consists of a minimum of 18 credits, including at least nine credits in courses at or above the 300 level.

• At least nine credits of the 18 credits required for the minor must be taken in residence at AUS.

• At least six credits of the nine credits at or above the 300 level must be taken in residence at AUS.

• A grade of at least C- in each course and a GPA of at least 2.00 must be earned in courses taken to satisfy the minor.

Students seeking a minor in mass communication must complete the following courses or their equivalent. All course prerequisites must be satisfied.

This minor is not open to mass communication students.

Minor Requirements (9 credits)
• MCM 150 Introduction to Mass Communication Studies
• MCM 225 Theories of Mass Communication
• MCM 231 Writing for Mass Communication

Minor Electives (minimum of 9 credits)

Students must complete a minimum of nine credits in MCM courses at the 300 level or above.

Department of Mathematics and Statistics

Mahmoud Anabtawi, Head

Faculty

Zayid AbdulHadi
Taher Abualrub
Marwan Abukhaled
Yusuf Abu-Muhanna
Ghada Alobaidi
Diana Audi
Ayman Badawi
Ibrahim El-Sadek
James Griffin
Gajath Gunatillake
Abdul Salam Jarrah
Suheil Khoury
Saadia Khouyibaba
Ismail Kucuk
Guillaume Leduc
Timothy Marshall
Mujo Mesanovic
Gergely Orosi
David Radnell
Ali Saifi (sabbatical Fall 2009)
Padmapani Seneviratne
Shou-Hsing Shih
Hana Sulieman
Thomas Wunderli

The Department of Mathematics and Statistics seeks to develop, campus-wide, the level of mathematical skills and quantitative and logical reasoning required for individuals to make informed decisions and excel in their chosen disciplines. It also seeks to develop these same skills in the larger community. The department aims to provide students with the mathematical ability needed to fulfill future leadership roles. Innovative teaching and learning environments provide opportunities for students to develop critical thinking and general problem-solving strategies. The Department of Mathematics and Statistics specifically strives to ensure success in finding appropriate employment as well as success in graduate work for those desiring to further pursue their formal education

Bachelor of Science in Mathematics (BSMTH)

The mission of the Bachelor of Science in Mathematics program is to expose students to the theoretical foundations of mathematics, to provide them with understanding of the broad outlines of modern mathematics and its applications in a variety of disciplines, to stimulate their interest in research and to prepare them for the future work.

Program Goals

The Bachelor of Science in Mathematics program seeks to provide students with:

- a strong background in calculus-based courses, including advanced calculus and differential equations
- the skills needed to successfully produce mathematical proofs expected at the undergraduate level
- exposure to diverse areas of mathematics, such as analysis, algebra, applied mathematics, discrete mathematics, and probability and statistics
- an understanding of algorithmic foundation, modeling tools, discrete phenomena and digital information environments
- the ability to think critically and independently about problems to facilitate the development of an aptitude for mathematical reasoning
- the mathematical and computing skills necessary to describe and solve technical problems that arise in business and industry
- a solid foundation in mathematics necessary for future development and/or graduate study

Program Outcomes

Upon completion of the Bachelor of Science in Mathematics program, graduates should be able to:

- demonstrate knowledge and understanding of diverse areas in mathematics such as analysis, algebra, discrete mathematics and applied mathematics
- construct and effectively communicate valid mathematical arguments

- demonstrate a solid grounding in the ideas and techniques of mathematics
- apply mathematical analysis and mathematical skills to problems in other disciplines
- use discrete mathematical concepts in a variety of contexts such as algorithm development, computer programming and network development and implementation
- demonstrate the ability to identify and carry out thoughtful approaches to problem solving
- define and execute simple research tasks, and assist in more complex research tasks as required for professional work
- formulate a problem in mathematical terms from descriptions written in language specific to disciplines associated with engineering, finance and the natural and physical sciences
- obtain the research skills necessary to adapt to change and remain current in the field and continue to learn new information, skills and concepts

Admission

Formal admission to the program follows the university's undergraduate admission requirements. AUS students transferring into the program must have a cumulative GPA of 2.00 or higher and permission of the head of the Department of Mathematics and Statistics.

Degree Requirements

A minimum of 122 credits, including the following, is required:

- a minimum of 44 credits of general education requirements including a minimum of 12 credits in English language competency (including ENG 203 or ENG 204), 6 credits in mathematics and statistics (MTH 103 and STA 201) and a minimum of 8 credits in science (any two courses from BIO 101, BIO 102, CHM 101, CHM 102, PHY 101and PHY 101L, PHY 102 and PHY 102L)

- a minimum of 63 credits of major requirements and major electives
- a minimum of 15 credits of free electives
- a minimum CGPA of 2.00

Major Requirements (33 credits)
- MTH 104 Calculus II
- MTH 203 Calculus III
- MTH 205 Differential Equations
- MTH 213 Discrete Mathematics
- MTH 221 Linear Algebra
- MTH 311 Intermediate Analysis
- MTH 312 Advanced Calculus
- MTH 320 Modern Algebra with Applications

- MTH 343 Numerical Analysis
- MTH 350 Introduction to Probability
- MTH 490 Senior Project

Major Electives (minimum of 30 credits)

Math Electives (minimum of 15 credits)

After consulting with their academic advisors, students should complete a minimum of 15 credit hours of major electives at the 300 level or above, with at least 6 at the 400 level, from any MTH/STA courses not listed as major requirements.

Electives in Related Areas (minimum of 15 credits)

Students must also complete a minimum of 15 credit hours at the 200 level or above in areas such as sciences, engineering and computer science, accounting, economics and finance, with the approval of their advisors.

Free Electives (minimum of 15 credits)

Students must complete a minimum of 15 credit hours of free electives from any 100-level courses or above, excluding MTH 101.

Proposed Sequence of Study
Bachelor of Science Degree in Mathematics (BSMTH)

FIRST YEAR (32 credit hours)			
Term	**Course #**	**Course Title**	**Credit**
Fall	MTH 103	Calculus I	3
	WRI 101	Academic Writing	3
	SCI XXX	Science Elective	4
	HSS XXX	Humanities/Social Sciences	3
	FRE XXX	Free Elective	3
		Total	16
Spring	MTH 104	Calculus II	3
	WRI 102	Writing and Reading Across the Curriculum	3
	STA 201	Introduction to Statistics for Engineering and Natural Sciences	3
	ARA XXX	Arabic Heritage	3
	SCI XXX	Science Elective	4
		Total	16

SECOND YEAR (30 credit hours)			
Term	**Course #**	**Course Title**	**Credit**
Fall	MTH 203	Calculus III	3
	MTH 213	Discrete Mathematics	3
	ENG 203 or ENG 204	Writing About Literature or Advanced Academic Writing	3
	MJE XXX	Elective in Related Areas	3
	HSS XXX	Humanities/Social Sciences II	3
		Total	15
Spring	MTH 205	Differential Equations	3
	MTH 221	Linear Algebra	3
	MTH XXX	Math Elective	3
	ELC XXX	English Language Competency	3
	FRE XXX	Free Elective	3
		Total	15

THIRD YEAR (30 credit hours)			
Term	**Course #**	**Course Title**	**Credit**
Fall	MTH 350	Introduction to Probability	3
	MTH 311	Intermediate Analysis	3
	HSS XXX	Humanities/Social Sciences	3
	MTH XXX	Math Elective	3
	MJE XXX	Elective in Related Areas	3
		Total	15
Spring	MTH 343	Numerical Analysis	3
	MTH 320	Modern Algebra with Applications	3
	MTH XXX	Math Elective	3
	MJE XXX	Elective in Related Areas	3
	FRE XXX	Free Elective	3
		Total	15

FOURTH YEAR (30 credit hours)			
Term	**Course #**	**Course Title**	**Credit**
Fall	MTH 312	Advanced Calculus	3
	MTH XXX	Math Elective	3
	MJE XXX	Elective in Related Areas	3
	HSS XXX	Humanities/Social Sciences	3
	FRE XXX	Free Elective	3
		Total	15
Spring	MTH 490	Senior Project	3
	MJE XXX	Elective in Related Areas	3
	MTH XXX	Math Elective	3
	HSS XXX	Humanities/Social Sciences	3
	FRE XXX	Free Elective	3
		Total	15

Minor in Actuarial Mathematics

Students enrolling the actuarial mathematics minor should have passed MTH 101 and be in good academic standing. The following rules apply:

- The minor consists of a minimum of 18 credits, including at least nine credits in courses at or above the 300 level.
- At least nine credits of the 18 credits required for the minor must be taken in residence at AUS.
- At least six credits of the nine credits at or above the 300 level must be taken in residence at AUS.
- A grade of at least C- in each course and a GPA of at least 2.00 must be earned in courses taken to satisfy the minor.

Students seeking a minor in actuarial mathematics must complete the following courses or their equivalent. All course prerequisites must be satisfied.

Minor Requirements (12 credits)
- MTH 102 Mathematics for Business II
- MTH 304 Mathematics of Finance
- MTH 305 Life Contingencies
- STA 202 Introduction to Statistics for Social Sciences or

  QBA201 Quantitative Business Analysis

Minor Electives (minimum 6 credits)
Students must complete a minimum of six credits in courses selected from the following list:

- MTH 39401 Theory of Risk
- any MTH or STA 394/494 courses in probability for actuarial mathematics, advanced life contingencies and mathematical statistics
- one 400-level course in FIN

Minor in Applied and Computational Mathematics

Students enrolling the applied and computational mathematics minor should have normally completed a minimum of 30 credits of course work and be in good academic standing.

The following rules apply:

- The minor consists of a minimum of 18 credits, including at least nine credits in courses at or above the 300 level.

- At least nine credits of the 18 credits required for the minor must be taken in residence at AUS.
- At least six credits of the nine credits at or above the 300 level must be taken in residence at AUS.
- A grade of at least C- in each course and a GPA of at least 2.00 must be earned in courses taken to satisfy the minor.

Students seeking a minor in applied and computational mathematics must complete the following courses or their equivalent. All course prerequisites must be satisfied.

This minor is not open to students majoring in mathematics.

Minor Requirements (12 credits)
- MTH 205 Differential Equations
- MTH 221 Linear Algebra
- MTH 341 Computational Methods
- MTH 351 Methods of Applied Mathematics

**Minor Electives
(minimum of 6 credits)**
Students must complete two courses for a minimum of six credits in MTH and/or STA at the 300 level or above with the approval of the department.

Department of Physics

Faculty
Ali Alnaser
Nidhal Guessoum
Nasser Hamdan
Mohammad Islam
Asad Hasan Jaidi
Tariq Majeed
Said Sakhi
Yousef Salamin
Raza Syed

The central aim of the Department of Physics is to provide students of engineering and other applied sciences with a solid grounding in physics, which is essential for progress in their respective fields of study, and to contribute to the Bachelor of Science in Environmental Sciences program. The department also offers courses on conceptual physics and astronomy as general science education requirements.

Department of Writing Studies

Terri Storseth, Head

Faculty
Alaanoud Abusalim
Jerald Cumbus
Laila Dahan
Maria Eleftheriou
Daniel Frederick
Neena Gandhi
Bruce Gatenby
Ronald Goodwin
Christopher Horger
Tizreena Ismail
Mary Anne John
Daniel Kirk
Jessica Lee
Jennifer Malia
Jennifer McArdle
Suzan Munday
Polly Palmer-Baghestani
Zofia Reid
Lynne Ronesi
Sana Sayed
Anne Shine
Abid Vali
Jason Ward
Adrian Zytkoskee

The purpose and goal of the Department of Writing Studies is to provide students with the language and rhetorical foundations needed to be able to write and read successfully in an academic environment.

To acquire these skills, students learn how to read and write paragraphs and essays. Instruction combines reading and writing skills with the grammar, vocabulary and organizational skills necessary to effectively present academic material in the various rhetorical genres of writing. Equipping students with these skills not only provides them with abilities to effectively negotiate academic assignments but also gives them a foundation for effective written communication, a skill that will be valuable to them for the rest of their lives.

Visual and Performing Arts Program

Martin Giesen, Coordinator

Faculty

Lowell (Dwight) Dickerson
John Perkins
Anthony Tassa

The College of Arts and Sciences seeks to expand undergraduate offerings in the fine and performing arts. At present, this initiative comprises courses in art, theatre and music. The art segment includes introductory survey courses and intermediate period courses in the history of art. The theatre segment teaches introductory courses in dramatic expression, history and theory of drama and dramaturgy. The music segment teaches introductory and intermediate courses in aural and sight-singing skills, choral ensemble, classical musicology and world music, including the history of jazz.

Program Mission

The Visual and Performing Arts Program is dedicated to the proposition that art, music and theatre are creative endeavors that enhance the human condition; that these arts promote inclusiveness, diversity and understanding in a global society; and that these arts elevate the human spirit and contribute to lifelong enjoyment and learning.

The mission of the Visual and Performing Arts Program is to examine and promote art, music and theatre by providing students with opportunities to explore how the visual and performing arts foster creativity and promote inclusiveness, diversity and understanding in an increasingly interdependent world.

Program Goals

• The art segment will provide students with knowledge of concepts, styles and innovations in art and architecture by offering undergraduate general education courses in art history.

• The music segment will offer undergraduate music courses that provide students with knowledge of various genres and perspectives of music, music theory, the ability to distinguish the construction of music, and ensemble courses that apply musicianship skills to performance.

• The theatre segment will inspire appreciation for the art and craft of theatre through production presentation and academic exploration of theatrical elements by offering production and theory courses in theatre (these courses could count as general education courses or as free electives).

Student Learning Outcomes

Students who successfully complete history of art courses will:

• demonstrate basic knowledge of major movements in art and architecture

• recognize, analyze and interpret individual representative art works

• demonstrate fundamental literacy in the principles of art historical analysis

Students who successfully complete music courses will:

• examine and express comprehension of music aurally and in written form

• identify and interpret historical trends in music literature

Students who successfully complete courses focused on the performance of music will:

• apply musicianship and vocal technique to ensemble repertoire

Students who successfully complete courses in the history and theory of theatre will:

• demonstrate basic knowledge of the art and processes of actors, designers and technicians

• recognize, analyze, compose and interpret theatrical scripts

Students who successfully complete courses focused on theatrical performance will:

• demonstrate the functioning of an ensemble, and the ability to effectively convey fully realized characters on stage

• demonstrate and execute functions of stage managers, designers, technicians and support staff as related to presenting fully conceptualized theatrical productions

CEN
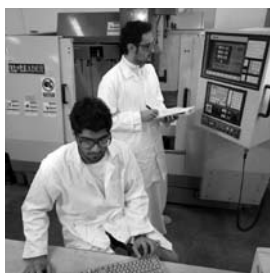
College of Engineering

Dean
Yousef Al-Assaf

Associate Dean
Hany El Kadi

The College of Engineering (CEN) offers bachelor of science (BS) degrees in several engineering disciplines and in computer science. These are all comprehensive curricula that emphasize quality, communication skills, application to real-world situations, interdisciplinary learning and team building. AUS College of Engineering graduates are well equipped to face the future. A degree from the AUS College of Engineering gives its holder access to a learned profession with opportunities for practice in industry, government, business, consulting and entrepreneurship. AUS engineering graduates are also well qualified for advanced studies toward a master's or doctoral degree leading to careers in research and development, engineering management and higher education teaching. Additionally, an engineering education is an excellent avenue to other professions such as law, medicine and public service.

ABET Accreditation

All six undergraduate programs offered by the College of Engineering are accredited by ABET. ABET, Inc. (www.abet.org) is the recognized accreditor for college and university programs in applied science, computing, engineering and technology in the United States. ABET is a federation of 29 professional and technical societies representing these fields. ABET currently accredits some 2,800 programs at more than 600 colleges and universities and is recognized by the Council for Higher Education Accreditation in Washington, DC.

The six undergraduate programs in the AUS College of Engineering are the first in the region and the second outside the US to receive this prestigious accreditation. ABET accreditation demonstrates the university's continuing commitment to the quality of its programs so that CEN students are ready to practice once they graduate and employers can count on AUS graduates to meet their needs.

Mission Statement

American University of Sharjah is a dynamic institution of higher education. As such, it offers its students an innovative educational environment. The university's degree programs are adapted to the needs of the citizenry of the United Arab Emirates and the Gulf Cooperation Council (GCC). In order to fulfill current and projected needs while maintaining an American-style curriculum, the College of Engineering has the following mission:

The College of Engineering at American University of Sharjah aspires to be the recognized leader in engineering education in Sharjah, across the UAE and the GCC, and to become a top choice by students, parents, faculty and staff who choose to contribute to engineering higher education.

The college's degree programs offer the highest level of professional and technical preparation, global preparedness and leadership development in an environment of English language instruction and partnership between faculty and students. All programs offer state-of-the art technology, understanding and experimentation with design and problem-solving processes, and excellent opportunities to experience real-world and research project involvement.

Objectives and Outcomes

In order to help students be successful at AUS, the major educational objectives of the College of Engineering are to:

- assist students in achieving their potential through preparation for a successful and satisfying career in the engineering and computer science professions

- prepare well-educated graduates able to serve in regional and international practice with consideration of multicultural environments

- prepare a bachelor of science-level graduate to be successful in graduate studies in a related area

- offer undergraduate and graduate academic programs that are critical to the sustainable development of society and the quality of life in the region

- offer broad-based curricula worthy of accreditation nationally and internationally due to a thorough, balanced foundation in math, science and design principles, as well as the humanities and social sciences

The graduates of the College of Engineering are educated to be able to demonstrate the following outcomes:

- approach the system stages of problem identification, needs analysis, requirements definition, design, implementation, maintenance and phase-out using the lifecycle concept

- write, read and speak in private and public to peers, supervisors and employers in a coherent, organized fashion that demonstrates understanding of problems and solutions that are practical and implementable

- utilize in a variety of settings the fundamentals of math, science and engineering principles

- keep abreast of and utilize in their work current computer and software technologies that are relevant to the graduates' chosen fields

- achieve a recognized level of engineering practice and certification available to an engineering graduate serving in professional practice

- participate in, as well as lead, team-based activities using current technology, engineering practices and science principles

- make and implement ethical choices in all professional endeavors

Curriculum

The curriculum for each of the college's degree programs has its own distinguishable features; however, common threads of design and problem solving have been woven into the fabric of the curricula to ensure that each student receives the very best education tailored to the needs of the Middle Eastern student and industry. All freshmen pursuing an engineering degree take the same courses to ensure a sound, broadly based preparation in general education knowledge as well as a firm understanding of the principles and practices of all engineering disciplines. The freshman year for computer science is slightly different.

The engineering and computer science programs are intended to prepare graduates for regional as well as worldwide practice. The programs are designed to satisfy the general university requirements and to meet the program criteria adopted by accreditation agencies both in the United Arab Emirates and in the United States. The degree programs emphasize learning the effective use of technology, information resources and communication methods, as well as instill in their graduates leadership qualities anchored in moral and ethical principles. The college's faculty members provide an educational experience that is equivalent to those offered by leading state and private universities in the United States and Europe.

College of Engineering graduates will work in an international and very competitive environment. Graduates must possess English fluency in both written and spoken forms; hence, instruction and interaction between students and faculty members are conducted in English. English fluency is especially critical as more multinational corporations adopt English as the corporate language.

In various formats, the oral, written, graphical and software communication skills of a student are developed, demonstrated and assessed. This is accomplished foremost in the required laboratories, research papers, senior projects and internships. Also, independent study one-on-one with faculty is a valuable option available to the student. The critical use of paper and electronic forms of published literature is taught from the first semester in all curricula in the College of Engineering. Throughout the degree plan, students must use and are assessed on their ability to discover, understand and critically judge the quality of publicly available literature.

Well-equipped computer laboratories are provided for students during and after classes and laboratories. The menu of software systems available for design, analysis and synthesis tasks in classes, laboratories, senior projects and courses in other parts of campus is determined by what the faculty members teach in all of their courses. Each student must complete a team-based extensive senior project focused on a real-world problem that requires specification, design, analysis and synthesis as the problem-solving process is utilized. Faculty members serve as close advisors and monitor each student's progress. Additionally, each student must complete a summer internship or training program in order to graduate. Many employers participate in this valuable experience.

Assessment and Evaluation of Curriculum

The College of Engineering has developed and implemented the Course Assessment and Improvement Process (CAIP). It is a comprehensive approach to the collection of student and faculty assessments of course material, delivery and student perception of learning. The results are used to improve course and laboratory content, delivery methods, testing and practical applications at the course level, for technical and supporting areas, as well as at the degree levels. The result is an ongoing process whereby students can be assured of improvements on a continuing basis.

Admission to Second Year

Engineering Programs

The first year, which provides a base in physics, chemistry, engineering and mathematics, is common to all students in the engineering programs. Students with acceptable grades can change majors within the engineering programs with no credit loss during the first year.

Formal admission to a major at the second-year level in all engineering programs requires meeting the following conditions:

- a cumulative grade point average (CGPA) of 2.00
- a minimum grade of C- (1.70) in NGN 110 Introduction to Engineering and Computing
- a minimum grade point average of C (2.00) and a minimum grade of C- (1.70) in at least 15 credit hours from the following list of required freshman-level science and mathematics courses: MTH 103, MTH 104, PHY 101, PHY 101L, PHY 102, PHY 102L, CHM 101 and NGN 111

Computer Science Program

Formal admission to the second-year level in computer science requires meeting the following conditions:

- a cumulative grade point average (CGPA) of 2.00
- a minimum grade of C- (1.70) in NGN 110 Introduction to Engineering and Computing
- a minimum grade point average of C (2.00) and a minimum grade of C- (1.70) in at least 10 credit hours from the following list of required freshman-level science and mathematics courses: MTH 103, MTH 104 and any two four-credit science courses

Graduation Requirements

Engineering Programs

Each engineering program is designed for completion in four years, including two summer terms of study (six weeks each) and a summer internship. Students whose academic backgrounds require the completion of preparatory

courses in mathematics, English or physics will require more than four years to complete the engineering program. Even without preparatory courses, many students opt to take additional time to complete their program. During the final year, a senior design (capstone) project must be completed over a two-course sequence. All engineering students are required to take a comprehensive assessment examination in the capstone senior design course. Practical training in an engineering environment strengthens the student's preparation for engineering practice.

In order to qualify for graduation with a bachelor of science degree in engineering, students must complete a minimum of 140 credits with a cumulative GPA of 2.00 or better, including:

- a minimum of 44 credits of general education requirements
- a minimum of 90 credits in major requirements and major electives, which include courses in mathematics, sciences, engineering sciences and engineering design that ensure preparation for professional practice
- a minimum of six credits of free electives
- an internship working in a professional environment for at least five weeks after the third year

Computer Science Program

The computer science program is designed for completion in four years, including one summer internship. Students whose academic backgrounds require the completion of preparatory courses in mathematics, English or physics will require more than four years to complete the program. During the final year, a senior design (capstone) project must be completed over a two-course sequence. Practical training in a computer science professional environment strengthens the student's preparation for professional practice.

To qualify for graduation with the Bachelor of Science in Computer Science, students must complete a minimum of 130 credits with a cumulative GPA of 2.00 or better, including:

- a minimum of 48 credits of general education requirements
- a minimum of 70 credits of major requirements and major electives
- a minimum of 12 credits of free electives
- an internship working in a professional environment for at least five weeks after the third year

Degree Programs

The College of Engineering offers the following undergraduate degree programs:

- Bachelor of Science in Chemical Engineering
- Bachelor of Science in Civil Engineering
- Bachelor of Science in Computer Engineering
- Bachelor of Science in Computer Science
- Bachelor of Science in Electrical Engineering
- Bachelor of Science in Mechanical Engineering

For details on the graduate programs, please refer to the *AUS Graduate Catalog*.

Minor Offerings

The College of Engineering offers the following minors:

- aerospace engineering
- biomedical engineering
- computer engineering
- computer science
- electrical engineering
- engineering management
- mechanical engineering
- mechatronics engineering
- petroleum engineering
- software engineering and security

Details on each minor are provided later in this section.

Department of Chemical Engineering

Dana Stevenson-Abouelnasr, Head

Faculty
Nabil Abdel-Jabbar
Raafat Alnaizy
Rachid Chebbi
Naif Darwish
Ghaleb Husseini
Taleb Ibrahim
Ibrahim Kocabas
Kevin Loughlin
Zarook Shareefdeen

Bachelor of Science in Chemical Engineering (BSChE)

The chemical engineering program is accredited by the Engineering Accreditation Commission (EAC) of ABET as well as by the UAE Ministry of Higher Education and Scientific Research.

Chemical engineers have many different responsibilities including design, analysis, research and development, supervision, production and sales. They manage the development of new technologies and products; they develop safe and environmentally benign processes that are efficient and economic to operate; and they direct the design, construction and operation of new plants, ranging from pilot plants to full-scale chemical facilities.

Chemical engineers are making unparalleled contributions in chemical and petrochemical processing, food and pharmaceutical industries, pollution control and abatement, process automation, process control and modeling, and biochemical technology. The Department of Chemical Engineering offers a four-year program of study that prepares graduates to work in all areas of the chemical industry. Specifically, it is designed to help students in developing a basic knowledge in science, in engineering and in the fundamentals and practical knowledge of thermodynamics, fluid flow, heat

transfer, mass transfer, reaction engineering, chemical unit operation, process control, process simulation, plant design, process integration, cost estimation, pollution prevention and waste management.

Mission Statement

The mission of the chemical engineering program at AUS is to prepare students for a technical career, to be innovative and ethically responsible, and to provide leadership in chemical engineering and related disciplines.

Program Educational Objectives

The objectives of the chemical engineering program are to produce graduates who will:

- succeed in the chemical engineering profession through technical competence, effective communication, teamwork and leadership
- maintain a lifelong interest in learning for personal and professional development
- practice engineering in a manner that is ethically responsible and consistent with regulatory and social concerns

Program Outcomes

Upon graduation, an AUS graduate in chemical engineering should demonstrate:

- an ability to apply knowledge of mathematics, science and engineering
- an ability to design and conduct experiments, as well as to analyze and interpret data
- an ability to design a system, component or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability and sustainability
- an ability to function on multidisciplinary teams
- an ability to indentify, formulate and solve engineering problems
- an understanding of professional and ethical responsibility
- an ability to communicate effectively
- the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental and societal context
- a recognition of the need for and an ability to engage in lifelong learning

- a knowledge of contemporary issues
- an ability to use the techniques, skills and modern engineering tools necessary for engineering practice

Admission to the Program

Admission to the program follows the university's undergraduate admission requirements. AUS students transferring into the program must have a cumulative GPA of 2.00 or higher in undergraduate-level courses and must be approved by both the head of the department and the college associate dean. For information on how to submit a change of major request, please refer to Fields of Study/Change of Major under the Academic Policies and Regulations section earlier in the catalog.

Degree Requirements

Students must complete a minimum of 140 credits to graduate. After the third year, each student is required to devote at least five weeks to the summer internship with an industrial firm prior to graduation. In the fourth year, each student is required to apply the knowledge, including economical and environmental analyses, gained from previous years to perform and analyze experiments and to work on supervised projects of specific chemical engineering significance over a two-course sequence. All chemical engineering students are required to take a comprehensive assessment examination during this capstone course sequence. Students are required to participate in several laboratory courses including organic chemistry, materials science, transport phenomena, unit operations and process control.

Students seeking the BSChE degree must satisfy the following requirements:

General Education Requirements (minimum of 44 credits)

- English language competency requirement: a minimum of 12 credits in 100-level or above writing (WRI)/English (ENG) courses, including ENG 204 and ENG 207
- Arabic heritage requirement: any course listed as an Arabic heritage requirement

- mathematics and/or statistics requirement: MTH 103 and MTH 104
- science requirement: CHM 101, PHY 101and PHY 101L
- humanities and social sciences requirement: a minimum of 15 credits to be selected from the areas of humanities and social sciences with at least six credits taken from the humanities area and at least six credits taken from the social sciences area
- computer literacy requirement: satisfied through extensive use of computer resources in courses throughout the engineering curriculum
- information literacy requirement: satisfied through WRI 102 and ENG 204

Major Requirements (81 credits)

- CHE 205 Principles of Chemical Engineering I
- CHE 206 Principles of Chemical Engineering II
- CHE 215 Fluid Flow
- CHE 230 Materials Science
- CHE 240 Computer Methods in Chemical Engineering
- CHE 303 Chemical Engineering Thermodynamics I
- CHE 304 Chemical Engineering Thermodynamics II
- CHE 307 Heat Transfer
- CHE 321 Chemical Reaction Engineering
- CHE 329 Mass Transfer
- CHE 332 Engineering Economy
- CHE 342 Separation Processes
- CHE 350 Transport Phenomena Laboratory I
- CHE 397 Professional Training in Chemical Engineering
- CHE 421 Chemical Process Dynamics and Control
- CHE 432 Process Design Safety and Economics
- CHE 451 Transport Phenomena Laboratory II
- CHE 452 Unit Operations and Control Laboratory
- CHE 490 Senior Design Project I
- CHE 491 Senior Design Project II
- CHM 102 General Chemistry II
- CHM 215 Organic Chemistry I
- CHM 217 Organic Chemistry Laboratory I
- CHM 331 Physical Chemistry II
- ELE 225 Electric Circuits and Devices

- MTH 203 Calculus III
- MTH 205 Differential Equations
- MTH 221 Linear Algebra
- NGN 110 Introduction to Engineering and Computing
- NGN 111 Introduction to Statistical Analysis
- PHY 102 General Physics II
- PHY 102L General Physics Laboratory II

In addition, students must complete one chemistry-related course with a minimum of three credits selected from the following list:

- CHM 216 Organic Chemistry II
- CHM 241 Quantitative Analysis
- CHM 345 Instrumental Analysis
- CHM 350 Biochemistry
- ENV 252 Environmental Chemistry

Major Electives (minimum of 9 credits)

Students must complete a minimum of nine credits from any 300-level or higher CHE courses not listed above. Students may complete one major engineering elective outside chemical engineering subject to the approval of the department.

Free Electives (minimum of 6 credits)

Students must complete a minimum of six credits from any courses offered at or above the 100 level, excluding MTH 101.

Proposed Sequence of Study
Bachelor of Science in Chemical Engineering (BSChE)

FIRST YEAR (37 credit hours)			
Term	Course #	Course Title	Credit
Fall	CHM 101	General Chemistry I	4
	WRI 101	Academic Writing	3
	MTH 103	Calculus I	3
	PHY 101	General Physics I	3
	PHY 101L	General Physics Laboratory I	1
	NGN 110	Introduction to Engineering and Computing	2
		Total	**16**
Spring	WRI 102	Writing and Reading Across the Curriculum	3
	MTH 104	Calculus II	3
	PHY 102	General Physics II	3
	PHY 102L	General Physics Laboratory II	1
	NGN 111	Introduction to Statistical Analysis	2
	FRE XXX	Free Elective	3
		Total	**15**
Summer	MTH 205	Differential Equations	3
	HSS XXX	Humanities/Social Sciences	3
		Total	**6**

SECOND YEAR (40 credit hours)			
Term	Course #	Course Title	Credit
Fall	CHE 205	Principles of Chemical Engineering I	2
	CHE 230	Materials Science	3
	CHM 102	General Chemistry II	4
	CHM 215	Organic Chemistry I	3
	MTH 203	Calculus III	3
	ENG 204	Advanced Academic Writing	3
		Total	**18**
Spring	CHE 206	Principles of Chemical Engineering II	3
	CHE 215	Fluid Flow	3
	CHE 240	Computer Methods in Chemical Engineering	3
	CHM 217	Organic Chemistry Laboratory I	1
	MTH 221	Linear Algebra	3
	CHM/ENV XXX	Chemistry Related Course*	3
		Total	**16**
Summer	ENG 207	English for Engineering	3
	HSS XXX	Humanities/Social Sciences	3
		Total	**6**

* See list under Major Requirements.

THIRD YEAR (31 credit hours)			
Term	Course #	Course Title	Credit
Fall	CHE 303	Chemical Engineering Thermodynamics I	3
	CHE 307	Heat Transfer	3
	CHE 329	Mass Transfer	3
	ELE 225	Electric Circuits and Devices	3
	CHE 350	Transport Phenomena Laboratory I	1
	HSS XXX	Humanities/Social Sciences	3
		Total	**16**
Spring	CHE 304	Chemical Engineering Thermodynamics II	3
	CHE 321	Chemical Reaction Engineering	3
	CHE 332	Engineering Economy	3
	CHE 342	Separation Processes	3
	CHM 331	Physical Chemistry II	3
		Total	**15**
Summer	CHE 397	Professional Training in Chemical Engineering	0

FOURTH YEAR (32 credit hours)			
Term	Course #	Course Title	Credit
Fall	CHE 421	Chemical Process Dynamics and Control	3
	CHE 432	Process Design, Safety and Economics	3
	CHE 451	Transport Phenomena Laboratory II	1
	CHE 490	Senior Design Project I	1
	MJE XXX	Major Elective	3
	ARA XXX	Arabic Heritage	3
	HSS XXX	Humanities/Social Sciences	3
		Total	**17**
Spring	CHE 452	Unit Operations and Control Laboratory	1
	CHE 491	Senior Design Project II	2
	MJE XXX	Major Elective	3
	MJE XXX	Major Elective	3
	HSS XXX	Humanities/Social Sciences	3
	FRE XXX	Free Elective	3
		Total	**15**

Department of Civil Engineering

Jamal Abdalla, Head

Faculty

Akmal Abdelfatah
Farid Abed
Ghassan Abu-Lebdeh
Vian Ahmed
Tarig Ali
Mohamed Al-Satari
Adil Al-Tamimi
Serter Atabay
Mousa Attom
Mohammad Reza Banan
Salwa Beheiry
Ali Berkaty
Magdi El-Emam
Sameh El-Sayegh
Rami Hawileh
Ercan Kahya
Zahid Khan
Maruf Mortula
Sami Tabsh
Sherif Yehia

Bachelor of Science in Civil Engineering (BSCE)

The civil engineering program is accredited by the Engineering Accreditation Commission (EAC) of ABET as well as by the UAE Ministry of Higher Education and Scientific Research.

The civil engineering program provides the necessary technical skills in mathematics, basic sciences, engineering sciences, engineering design, humanities and social sciences consistent with accreditation standards and national needs. The program provides critical learning for a broad foundation in structures, environmental engineering, geotechnical, materials, water resources, urban planning and transportation. Considerable emphasis is placed on group-based, open-ended design projects to provide students with the necessary skills for creative teamwork and to prepare them professionally for diverse employment opportunities. Preparation for professional practice and graduate studies is accomplished through careful selection of professional and technical electives. Students

are motivated to keep abreast of current technical developments, to improve communication skills, to use computer tools, to be aware of project constraints, and to develop and maintain high standards of ethics and professionalism. The civil engineering program provides an environment conducive to learning that stimulates both students and faculty.

Mission Statement

The mission of the civil engineering program at AUS is to provide students with the highest level of technical preparation, professional development and leadership skills for successful careers in civil engineering, and to provide excellence in higher education by offering high-quality education based on a well-balanced curriculum.

Program Educational Objectives

The objectives of the civil engineering program are to produce graduates who will:

- have successful careers in civil engineering and become independent thinkers, effective communicators, team members, decision makers and leaders in industry and public sectors
- understand the global, ethical and social implications of the civil engineering profession and promote public safety and environmental protection
- pursue advanced studies successfully and engage in continuing education and lifelong learning

Program Outcomes

Upon graduation, an AUS graduate in civil engineering should demonstrate:

- an ability to apply knowledge of mathematics, science and engineering
- an ability to design and conduct experiments, as well as to analyze and interpret data
- an ability to design a system, component or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability and sustainability
- an ability to function on multidisciplinary teams
- an ability to indentify, formulate and solve engineering problems

- an understanding of professional and ethical responsibility
- an ability to communicate effectively
- the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental and societal context
- a recognition of the need for, and an ability to engage in lifelong learning
- a knowledge of contemporary issues
- an ability to use the techniques, skills and modern engineering tools necessary for engineering practice
- an ability to explain basic concepts in management, business, public policy and leadership, and the importance of professional licensure

Admission to the Program

Admission to the program follows the university's undergraduate admission requirements. AUS students transferring into the program must have a cumulative GPA of 2.00 or higher in undergraduate- level courses and must be approved by both the head of the department and the college associate dean. For information on how to submit a change of major request, please refer to Fields of Study/ Change of Major under the Academic Policies and Regulations section earlier in the catalog.

Degree Requirements

Students must complete a minimum of 140 credits to graduate. After the third year, each student is required to devote at least five weeks to the summer internship prior to graduation. In the fourth year, each student is required to complete a senior design project over a two-course sequence. All civil engineering students are required to take a comprehensive assessment examination during this capstone course sequence.

Students seeking the BSCE degree must satisfy the following requirements:

General Education Requirements (minimum of 44 credits)

- English language competency requirement: a minimum of 12 credits

in 100-level or above writing (WRI)/ English (ENG) courses, including ENG 204 and ENG 207

- Arabic heritage requirement: any course listed as an Arabic heritage requirement
- mathematics and/or statistics requirement: MTH 103 and MTH 104
- science requirement: CHM 101, PHY 101 and PHY 101L
- humanities and social sciences requirement: a minimum of 15 credits to be selected from the areas of humanities and social sciences with at least six credits taken from the humanities area and at least six credits taken from the social sciences area
- computer literacy requirement: satisfied through extensive use of computer resources in courses throughout the engineering curriculum
- information literacy requirement: satisfied through WRI 102 and ENG 204

Major Requirements (84 credits)
- CVE 202 Construction Materials Laboratory
- CVE 211 Fundamentals of Graphics and Programming
- CVE 220 Statics
- CVE 221 Construction Materials and Quality Control
- CVE 223 Mechanics of Materials
- CVE 231 Geology
- CVE 240 Fluid Mechanics
- CVE 241 Elementary Surveying
- CVE 242 Field Plane Surveying
- CVE 263 Urban Transportation Planning
- CVE 267 Civil Engineering Cost Analysis
- CVE 301 Theory of Structures
- CVE 303 Geotechnical Engineering Laboratory
- CVE 304 Environmental and Water Engineering Laboratory
- CVE 310 Fundamentals of Structural Dynamics
- CVE 312 Structural Steel Design
- CVE 313 Reinforced Concrete Design
- CVE 325 Numerical Methods in Engineering
- CVE 331 Geotechnical Engineering Principles
- CVE 333 Geotechnical Engineering Design

- CVE 341 Water Resources Engineering
- CVE 351 Environmental Engineering
- CVE 363 Highway Design
- CVE 367 Project Estimating, Planning and Control
- CVE 397 Professional Training in Civil Engineering
- CVE 490 Civil Engineering Design Project I
- CVE 491 Civil Engineering Design Project II
- MTH 203 Calculus III
- MTH 205 Differential Equations
- MTH 221 Linear Algebra
- NGN 110 Introduction to Engineering and Computing
- NGN 111 Introduction to Statistical Analysis
- PHY 102 General Physics II
- PHY 102L General Physics Laboratory II

Major Electives (minimum of 6 credits)
Students must complete a minimum of six credits in courses selected from the following list:
- CVE 410 Computer Methods in Structural Analysis and Design
- CVE 411 Structural Concrete Design
- CVE 413 Concrete Bridge Design
- CVE 437 Advanced Concrete Technology
- CVE 442 Advanced Foundation Engineering
- CVE 446 Geotechnical Dam Engineering
- CVE 450 Physical and Chemical Processes in Environmental Engineering
- CVE 456 Traffic Engineering
- CVE 457 Airport Planning and Design
- CVE 463 Construction Management
- CVE 468 Systems Construction Management, Scheduling and Control
- CVE 494 Special Topics in Civil Engineering

Free Electives (minimum of 6 credits)
Student must complete a minimum of six credits from any courses offered at or above the 100 level, excluding MTH 101.

Proposed Sequence of Study
Bachelor of Science in Civil Engineering (BSCE)

FIRST YEAR (37 credit hours)			
Term	Course #	Course Title	Credit
Fall	CHM 101	General Chemistry I	4
	WRI 101	Academic Writing	3
	MTH 103	Calculus I	3
	PHY 101	General Physics I	3
	PHY 101L	General Physics Laboratory I	1
	NGN 110	Introduction to Engineering and Computing	2
		Total	**16**
Spring	WRI 102	Writing and Reading Across the Curriculum	3
	MTH 104	Calculus II	3
	PHY 102	General Physics II	3
	PHY 102L	General Physics Laboratory II	1
	NGN 111	Introduction to Statistical Analysis	2
	FRE XXX	Free Elective	3
		Total	**15**
Summer	MTH 205	Differential Equations	3
	HSS XXX	Humanities/Social Sciences	3
		Total	**6**

SECOND YEAR (38 credit hours)			
Term	Course #	Course Title	Credit
Fall	ENG 204	Advanced Academic Writing	3
	CVE 211	Fundamentals of Graphics and Computer Programming	3
	CVE 220	Statics	3
	CVE 231	Geology	3
	CVE 241	Elementary Surveying	3
	CVE 242	Field Plane Surveying	1
		Total	**16**
Spring	CVE 202	Construction Materials Laboratory	1
	CVE 221	Construction Materials and Quality Control	3
	CVE 223	Mechanics of Materials	3
	CVE 240	Fluid Mechanics	3
	CVE 263	Urban Transportation Planning	3
	MTH 221	Linear Algebra	3
		Total	**16**
Summer	ENG 207	English for Engineering	3
	CVE 267	Civil Engineering Cost Analysis	3
		Total	**6**

THIRD YEAR (32 credit hours)			
Term	Course #	Course Title	Credit
Fall	CVE 301	Theory of Structures	3
	CVE 303	Geotechnical Engineering Laboratory	1
	CVE 331	Geotechnical Engineering Principles	3
	CVE 341	Water Resources Engineering	3
	MTH 203	Calculus III	3
	HSS XXX	Humanities/Social Sciences	3
		Total	**16**
Spring	CVE 304	Environmental and Water Engineering Laboratory	1
	CVE 312	Structural Steel Design	3
	CVE 313	Reinforced Concrete Design	3
	CVE 325	Numerical Methods in Engineering	3
	CVE 351	Environmental Engineering	3
	HSS XXX	Humanities/Social Sciences	3
		Total	**16**
Summer	CVE 397	Professional Training in Civil Engineering	0

FOURTH YEAR (33 credit hours)			
Term	Course #	Course Title	Credit
Fall	CVE 333	Geotechnical Engineering Design	3
	CVE 367	Project Estimating, Planning and Control	3
	CVE 363	Highway Design	3
	CVE 490	Civil Engineering Design Project I	1
	HSS XXX	Humanities/Social Sciences	3
	FRE XXX	Free Elective	3
		Total	**16**
Spring	CVE 310	Fundamentals of Structural Dynamics	3
	CVE 491	Civil Engineering Design Project II	2
	MJE XXX	Major Elective	3
	MJE XXX	Major Elective	3
	HSS XXX	Humanities/Social Sciences	3
	ARA XXX	Arabic Heritage	3
		Total	**17**

Department of Computer Science and Engineering

Assim Sagahyroon, Head

Faculty

Rana Ahmed
Abdul-Rahman Al-Ali
Fadi Aloul
Gerassimos Barlas
Armin Eberlein
Khaled El-Fakih
Taha Landolsi
Tarik Ozkul (sabbatical Fall 2009)
Michel Pasquier
Ghassan Qadah
Tamer Shanableh
Imran Zualkernan

Bachelor of Science in Computer Engineering (BSCoE)

The computer engineering program is accredited by the Engineering Accreditation Commission (EAC) of ABET as well as by the UAE Ministry of Higher Education and Scientific Research.

The phenomenal growth of the computer engineering field has been fueled by rapid advances in integrated circuits, microprocessors, software and networking technologies. Many of the modern products and services used in our daily life have been developed by computer hardware and software engineers. The primary purpose of the computer engineering program is to educate students with an understanding of digital systems, programming languages, computer architecture, computer networks, computer applications in industry and software engineering. These topics bridge traditional electrical engineering and computer science curricula. Computer engineers design, build and maintain integrated computer-based systems for home, business, government and industrial use. The undergraduate program in computer engineering prepares students for a wide range of positions in business and government service, as well as higher education, and research and development roles.

The curriculum satisfies the needs of

the engineering community, especially in the United Arab Emirates and the Gulf region. The program includes general education requirements and core requirements for all computer engineering students. In addition, technical and free elective courses must be completed. A summer internship experience is required, as is a senior design project accomplished over a two-semester period.

Required laboratory courses provide hands-on experience and support class work and the senior project. The laboratories are equipped with state-of-the-art hardware, software and networking equipment.

Mission Statement

The mission of the computer engineering program is to educate students in the principles and modern practices of computer engineering, to prepare students to pursue a wide range of computer engineering careers, and to generate new knowledge by the pursuit of research in selected areas of computer engineering.

Program Educational Objectives

The objectives of the computer engineering program are to produce graduates who will:

- have successful careers as computer engineers, and become effective communicators, team members and leaders in industry and public sectors
- continue their professional development through continuing education and advanced studies
- be engaged in the global, ethical and social aspects of the profession and have a positive impact on local, regional and global communities

Program Outcomes

Upon graduation, an AUS graduate in computer engineering should demonstrate:

- an ability to apply knowledge of mathematics, science and engineering
- an ability to design and conduct experiments, as well as to analyze and interpret data
- an ability to design a system, component or process to meet desired needs within realistic constraints such

as economic, environmental, social, political, ethical, health and safety, manufacturability and sustainability
- an ability to function on multidisciplinary teams
- an ability to indentify, formulate and solve engineering problems
- an understanding of professional and ethical responsibility
- an ability to communicate effectively
- the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental and societal context
- a recognition of the need for and an ability to engage in lifelong learning
- a knowledge of contemporary issues
- an ability to use the techniques, skills and modern engineering tools necessary for engineering practice

Admission to the Program

Admission to the program follows the university's undergraduate admission requirements. AUS students transferring into the program must have a cumulative GPA of 2.00 or higher in undergraduate-level courses and must be approved by both the head of the department and the college associate dean. For information on how to submit a change of major request, please refer to Fields of Study/Change of Major under the Academic Policies and Regulations section earlier in the catalog.

Degree Requirements

Students must complete a minimum of 140 credits to graduate. After the third year, each student is required to devote at least five weeks to the summer internship prior to graduation. In the fourth year, each student is required to complete a senior design project over a two-course sequence. All computer engineering students are required to take a comprehensive assessment examination during this capstone course sequence.

Students seeking the BSCoE degree must complete the following requirements:

General Education Requirements (minimum of 44 credits)

- English language competency requirement: a minimum of 12 credits in 100-level or above writing (WRI)/English (ENG) courses, including ENG 204 and ENG 207
- Arabic heritage requirement: any course listed as an Arabic heritage requirement
- mathematics and/or statistics requirement: MTH 103 and MTH 104
- science requirement: CHM 101, PHY 101 and PHY 101L
- humanities and social sciences requirement: a minimum of 15 credits to be selected from the areas of humanities and social sciences with at least six credits taken from the humanities area and at least six credits taken from the social sciences area
- computer literacy requirement: satisfied through extensive use of computer resources in courses throughout the engineering curriculum
- information literacy requirement: satisfied through WRI 102 and ENG 204

Major Requirements (78 credits)

- COE 210 Programming I
- COE 211 Programming II
- COE 221 Digital Systems
- COE 240 Microprocessors
- COE 311 Data Structures and Algorithms
- COE 312 Software Design for Engineers
- COE 341 Computer Architecture and Organization
- COE 360 Probability and Stochastic Processes
- COE 370 Communications Networks
- COE 371 Computer Networks I
- COE 381 Operating Systems
- COE 397 Professional Training in Computer Engineering
- COE 412 Embedded Systems
- COE 420 Software Engineering
- COE 424 Advanced Digital System Design
- COE 490 Design Project I
- COE 491 Design Project II
- ELE 211 Electric Circuits I
- ELE 241 Electronics I
- ELE 241L Electronics I Laboratory
- ELE 323 Signal Processing
- ELE 341 Electronics II
- MCE 225 Statics and Dynamics for Computer Engineers
- MTH 205 Differential Equations
- MTH 213 Discrete Mathematics
- MTH 221 Linear Algebra
- NGN 110 Introduction to Engineering and Computing
- NGN 111 Introduction to Statistical Analysis
- PHY 102 General Physics II
- PHY 102L General Physics Laboratory II

Major Electives (minimum of 12 credits)

Four three-credit courses from the approved technical elective courses listed below must be completed. At least three of the four courses should be in computer engineering.

- BME 420 Biomedical Electronics I
- CMP 352 Human Computer Interaction
- CMP 432 Image Processing
- CMP 433 Artificial Intelligence
- CMP 450 Object-Oriented Software Engineering
- CMP 451 Formal Specification Methods
- CMP 454 Software Testing and Quality Engineering
- CMP 472 Multimedia Computing
- COE 422 Database Systems
- COE 423 Computer Networks II
- COE 425 Modern Computer Organizations
- COE 427 Internet Computing
- COE 428 VLSI Design
- COE 431 Industrial Computer Systems
- COE 434 Mobile Computing
- COE 444 Computer Security
- COE 445 Compiler Design
- COE 481 Real-time Industrial Networks
- COE 482 Soft Computing
- COE 494 Special Topics in Computer Engineering
- ELE 311 Electromagnetics
- ELE 432 Medical Instrumentation I
- ELE 441 Microelectronic Devices

Free Electives (minimum of 6 credits)

Students must complete a minimum of six credits of any courses offered at or above the 100 level, excluding MTH 101.

Proposed Sequence of Study
Bachelor of Science in Computer Engineering (BSCoE)

FIRST YEAR (37 credit hours)			
Term	Course #	Course Title	Credit
Fall	CHM 101	General Chemistry I	4
	WRI 101	Academic Writing	3
	MTH 103	Calculus I	3
	PHY 101	General Physics I	3
	PHY 101L	General Physics Laboratory I	1
	NGN 110	Introduction to Engineering and Computing	2
		Total	**16**
Spring	WRI 102	Writing and Reading Across the Curriculum	3
	MTH 104	Calculus II	3
	PHY 102	General Physics II	3
	PHY 102L	General Physics Laboratory II	1
	NGN 111	Introduction to Statistical Analysis	2
	FRE XXX	Free Elective	3
		Total	**15**
Summer	MTH 205	Differential Equations	3
	HSS XXX	Humanities/Social Sciences	3
		Total	**6**

SECOND YEAR (38 credit hours)			
Term	Course #	Course Title	Credit
Fall	COE 210	Programming I	3
	COE 221	Digital Systems	4
	ENG 204	Advanced Academic Writing	3
	ELE 211	Electric Circuits I	3
	MCE 225	Statics and Dynamics for Computer Engineers	2
		Total	**15**
Spring	COE 211	Programming II	3
	COE 240	Microprocessors	4
	MTH 213	Discrete Mathematics	3
	MTH 221	Linear Algebra	3
	HSS XXX	Humanities/Social Sciences	3
		Total	**16**
Summer	ENG 207	English for Engineering	3
	ELE 241	Electronics I	3
	ELE 241L	Electronics I Laboratory	1
		Total	**7**

THIRD YEAR (32 credit hours)			
Term	Course #	Course Title	Credit
Fall	COE 311	Data Structures and Algorithms	3
	COE 312	Software Design for Engineers	2
	COE 370	Communications Networks	3
	ELE 323	Signal Processing	3
	ELE 341	Electronics II	3
	HSS XXX	Humanities/Social Sciences	3
		Total	**17**
Spring	COE 341	Computer Architecture and Organization	3
	COE 360	Probability and Stochastic Processes	3
	COE 371	Computer Networks I	3
	COE 381	Operating Systems	3
	HSS XXX	Humanities/Social Sciences	3
		Total	**15**
Summer	COE 397	Professional Training in Computer Engineering	0

FOURTH YEAR (33 credit hours)			
Term	Course #	Course Title	Credit
Fall	COE 412	Embedded Systems	3
	COE 420	Software Engineering	3
	COE 424	Advanced Digital System Design	3
	COE 490	Design Project I	1
	MJE XXX	Major Elective	3
	HSS XXX	Humanities/Social Sciences	3
		Total	**16**
Spring	COE 491	Design Project II	2
	MJE XXX	Major Elective	3
	MJE XXX	Major Elective	3
	MJE XXX	Major Elective	3
	ARA XXX	Arabic Heritage	3
	FRE XXX	Free Elective	3
		Total	**17**

Bachelor of Science in Computer Science (BSCS)

The computer science program is accredited by the Computing Accreditation Commission (CAC) of ABET as well as by the UAE Ministry of Higher Education and Scientific Research.

The program is designed to meet the growing needs for computer science experts in the rapidly evolving 21st century economy. It provides graduates with a strong computer science base that will enable them to capitalize on increasing career opportunities in the information technology sector, especially software-related fields; to expand the limits of their knowledge by pursuing further graduate studies; and to explore innovative approaches to computer-related problems. A computer science degree from AUS provides the graduate with a highly demanded level of expertise, great mobility and flexibility, and a wide range of career choices in the broad software and information technology industry.

The program includes general education requirements and core requirements. In addition, technical and free elective courses are required. A senior design project is also completed in close coordination with a faculty advisor over a two-course sequence. A summer internship experience is required.

Mission Statement
The mission of the computer science program is to deliver a modern curriculum that will equip graduates with strong theoretical and practical backgrounds to enable them to excel in the workplace and to be lifelong learners.

Program Educational Objectives
The objectives of the computer science program are to produce graduates who will:

- have successful careers in the field of computer science
- be effective communicators, team members and leaders that add value to employers and businesses regionally and globally
- stay current in emerging technologies through training, self-learning and/or graduate studies

- be engaged in the ethical, legal and social issues faced in their workplace and contribute positively to the community

Program Outcomes
Upon graduation, an AUS graduate in computer science should demonstrate:

- an ability to apply knowledge of computing and mathematics appropriate to the discipline
- an ability to analyze a problem, and identify and define the computing requirements appropriate to its solution
- an ability to design, implement and evaluate a computer-based system, process, component or program to meet desired needs
- an ability to function effectively on teams to accomplish a common goal
- an understanding of professional, ethical, legal, security and social issues and responsibilities
- an ability to communicate effectively with a range of audiences
- an ability to analyze the local and global impact of computing on individuals, organizations and society
- recognition of the need for and an ability to engage in continuing professional development
- an ability to use current techniques, skills and tools necessary for computing practice

Admission to the Program

Admission to the program follows the university's undergraduate admission requirements. AUS students transferring into the program must have a cumulative GPA of 2.00 or higher in undergraduate-level courses and must be approved by both the head of the department and the college associate dean. For information on how to submit a change of major request, please refer to Fields of Study/Change of Major under the Academic Policies and Regulations section earlier in the catalog.

Degree Requirements

Students must complete a minimum of 130 credits to graduate. These should include a minimum of 48 credits of general education requirements, 58 credits of major

requirements, a minimum of 12 credits of computer science elective courses and a minimum of 12 credits of free electives. After the third year, each student is normally required to devote at least five weeks to the summer internship prior to graduation. In the last year, each student is required to complete a senior design project.

Students seeking the BS in Computer Science degree must complete the following requirements:

General Education Requirements (minimum of 48 credits)
- English language competency requirement: a minimum of 12 credits in 100-level or above writing (WRI)/English (ENG) courses, including ENG 204 and ENG 207
- Arabic heritage requirement: any course listed as an Arabic heritage requirement
- mathematics and/or statistics requirement: MTH 103 and MTH 104
- science requirement: a minimum of 12 credits from CHM, BIO, ENV or PHY. Two out of the three courses must be in the same area.
- humanities and social sciences requirement: a minimum of 15 credits to be selected from the areas of humanities and social sciences with at least six credits taken from the humanities area and at least six credits taken from the social sciences area
- computer literacy requirement: satisfied through courses throughout the computer science curriculum
- information literacy requirement: satisfied through WRI 102 and ENG 204

Major Requirements (58 credits)
- CMP 120 Introduction to Computer Science I
- CMP 210 Digital Systems
- CMP 213 Discrete Structures
- CMP 220 Introduction to Computer Science II
- CMP 235 Ethics for Computing and Information Technology
- CMP 240 Introduction to Computer Systems
- CMP 256 GUI Design and Programming
- CMP 305 Data Structures and Algorithms
- CMP 310 Operating Systems
- CMP 320 Database Systems
- CMP 321 Programming Languages
- CMP 340 Design and Analysis of Algorithms

- CMP 341 Computational Methods
- CMP 350 Software Engineering
- CMP 397 Professional Training in Computer Science
- CMP 416 Internet and Network Computing
- CMP 490 Project in Computer Science I
- CMP 491 Project in Computer Science II
- MTH 221 Linear Algebra
- NGN 110 Introduction to Engineering and Computing
- STA 201 Introduction to Statistics for Engineering and Natural Sciences

Major Electives
(minimum of 12 credits)

Students must complete a minimum of six credits in courses selected from the following list:

- CMP 352 Human Computer Interaction
- CMP 494 Special Topics in Computer Science
- CMP 412 Introduction to Distributed Systems
- CMP 415 Introduction to Computer Networks
- CMP 417 Parallel Computing Systems
- CMP 430 Computer Graphics
- CMP 432 Image Processing
- CMP 433 Artificial Intelligence
- CMP 434 Multimedia Compression
- CMP 435 Computer Security
- CMP 437 Introduction to Neural Networks
- CMP 440 Machine Learning
- CMP 450 Object-oriented Software Engineering
- CMP 451 Formal Specification Methods

- CMP 452 Compiler Construction
- CMP 454 Software Testing and Quality Engineering
- CMP 470 Formal Languages and Computability
- CMP 472 Multimedia Computing
- CMP 473 Game Programming
- COE 341 Computer Architecture and Organization
- COE 370 Communications Networks
- COE 423 Computer Networks II
- COE 482 Soft Computing

Free Electives (minimum of 12 credits)

Students must complete a minimum of 12 credits of any courses offered at or above the 100 level, excluding MTH 101.

Proposed Sequence of Study
Bachelor of Science Degree in Computer Science (BSCS)

FIRST YEAR (31 credit hours)			
Term	**Course #**	**Course Title**	**Credit**
Fall	MTH 103	Calculus I	3
	WRI 101	Academic Writing	3
	NGN 110	Introduction to Engineering and Computing	2
	HSS XXX	Humanities/Social Sciences	3
	SCI XXX	Science	4
		Total	**15**
Spring	MTH 104	Calculus II	3
	WRI 102	Writing and Reading Across the Curriculum	3
	CMP 120	Introduction to Computer Science I	3
	ARA XXX	Arabic Heritage	3
	SCI XXX	Science	4
		Total	**16**

SECOND YEAR (35 credit hours)			
Term	**Course #**	**Course Title**	**Credit**
Fall	ENG 204	Advanced Academic Writing	3
	MTH 221	Linear Algebra	3
	CMP 210	Digital Systems	4
	CMP 213	Discrete Structures	3
	CMP 220	Introduction to Computer Science II	3
		Total	**16**
Spring	STA 201	Introduction to Statistics for Engineering and Natural Sciences	3
	CMP 305	Data Structures and Algorithms	3
	CMP 235	Ethics for Computing and Information Technology	3
	CMP 256	GUI Design and Programming	3
	HSS XXX	Humanities/Social Sciences	3
	SCI XXX	Science	4
		Total	**19**

THIRD YEAR (34 credit hours)			
Term	**Course #**	**Course Title**	**Credit**
Fall	ENG 207	English for Engineering	3
	CMP 240	Introduction to Computer Systems	4
	CMP 320	Database Systems	3
	CMP 321	Programming Languages	3
	CMP 340	Design and Analysis of Algorithms	3
	HSS XXX	Humanities/Social Sciences	3
		Total	**19**
Spring	CMP 310	Operating Systems	3
	CMP 341	Computational Methods	3
	CMP 350	Software Engineering	3
	MJE XXX	Major Elective	3
	HSS XXX	Humanities/Social Sciences	3
		Total	**15**
Summer	CMP 397	Professional Training in Computer Science	0

FOURTH YEAR (30 credit hours)			
Term	**Course #**	**Course Title**	**Credit**
Fall	CMP 416	Internet and Network Computing	3
	CMP 490	Project in Computer Science I	1
	MJE XXX	Major Elective	3
	MJE XXX	Major Elective	3
	FRE XXX	Free Elective	3
	FRE XXX	Free Elective	3
		Total	**16**
Spring	CMP 491	Project in Computer Science II	2
	MJE XXX	Major Elective	3
	HSS XXX	Humanities/Social Sciences	3
	FRE XXX	Free Elective	3
	FRE XXX	Free Elective	3
		Total	**14**

Minor in Computer Engineering

Students enrolling in the computer engineering minor should have completed a minimum of 60 credit hours of course work and be in good academic standing.

The following rules apply:

- The minor consists of a minimum of 20 credit hours, including at least 10 credit hours in courses at or above the 300 level in computer engineering.
- At least 10 credits of the minor must be taken in residence at AUS.
- At least seven credits of the 10 credits at or above the 300 level must be taken in residence at AUS.
- A grade of at least C- in each course and a GPA of at least 2.00 must be earned in the courses taken to satisfy the minor.

Students seeking a minor in computer engineering must complete the following courses or their equivalent. All course prerequisites must be satisfied.

Minor Requirements (11 credits)

- COE 221 Digital Systems
- COE 240 Microprocessors
- ELE 341 Electronics II

Minor Electives (minimum of 9 credits)

Students must complete a minimum of nine credit hours from any 300-level or above COE courses.

Minor in Computer Science

Students enrolling in the computer science minor should have normally completed a minimum of 60 credits of course work and be in good academic standing. The computer science minor is open to all AUS students.

The following rules apply:

- The minor consists of a minimum of 18 credits, including at least nine credits in courses at or above the 300 level in computer science.
- At least nine credits of the 18 credits required for the minor must be taken in residence at AUS.
- At least six credits of the nine credits at or above the 300 level must be taken in residence at AUS.
- A grade of at least C- in each course and a GPA of at least 2.00 must be earned in courses taken to satisfy the minor.

Students seeking a minor in computer science must complete the following courses or their equivalent. All course prerequisites must be satisfied.

Minor Requirements (9–12 credits)

- College of Arts and Sciences students: CMP 220, CMP 305 and CMP 340
- College of Engineering students: CMP 321, CMP 340 and CMP 416
- School of Architecture and Design students: CMP 120, CMP 220, CMP 430 and CMP 472
- School of Business and Management students: CMP 220, CMP 305 and CMP 340

Minor Electives (6–9 credits)

Students may complete any 300-level or above CMP courses, except CMP 490 and CMP 491.

Minor in Software Engineering and Security

The software engineering and security minor exposes students to contemporary topics related to both software and security. Students enrolling in the minor in software engineering and security should have normally completed a minimum of 60 credits of course work and be in good academic standing.

The following rules apply:

- The minor consists of a minimum of 18 credits, including at least nine credits in courses at or above the 300 level.
- At least nine credits of the 18 credits required for the minor must be taken in residence at AUS.
- At least six credits of the nine credits at or above the 300 level must be taken in residence at AUS.
- A grade of at least C- in each course and a GPA of at least 2.00 must be earned in courses taken to satisfy the minor.

Students seeking a minor in software engineering and security must complete the following courses or their equivalent. All course prerequisites must be satisfied.

Minor Requirements (12 credits)

- CMP 305 Data Structures and Algorithms or
  CMP 306 Introduction to Programming and Data Structures
- CMP 350 Software Engineering
- CMP 435 Computer Security
- CMP 454 Software Testing and Quality Engineering

Minor Electives (minimum of 6 credits)

- CMP 352 Human Computer Interaction
- CMP 450 Object-Oriented Software Engineering
- CMP 451 Formal Specification Methods
- CMP 494 Special Topics in Computer Science

Department of Electrical Engineering

Mohamed El-Tarhuni, Head

Faculty

Yousef Al-Assaf
Lutfi Albasha
Hasan Al-Nashash
Khaled Assaleh
Rached Dhaouadi
Ayman El-Hag
Mohamed Hassan
Hasan Mir
Ahmed Osman-Ahmed
Nasser Qaddoumi
Habib-ur Rehman
Mehmet Yavuz
Aydin Yesildirek

Bachelor of Science in Electrical Engineering (BSEE)

The electrical engineering program is accredited by the Engineering Accreditation Commission (EAC) of ABET as well as by the UAE Ministry of Higher Education and Scientific Research.

The electrical engineering curriculum is a four-year program leading to a Bachelor of Science in Electrical Engineering (BSEE). The program is based on a solid foundation of science and mathematics needed to understand advanced engineering topics and applications. The curriculum has been designed with the aim of providing breadth and depth of knowledge and significant design experience across the key areas of electrical engineering that evolve with society's needs. The Department of Electrical Engineering provides access to state-of-the-art resources in communications, control and instrumentation, digital signal processing, microelectronics, electromagnetics and microwaves, electric drives, power systems and biomedical electronics.

Faculty members are committed to helping students develop the intellectual, technological and personal skills that allow them to excel in both academia and electrical engineering careers. AUS electrical engineering

graduates should be able to employ their knowledge, analysis and design skills to realize engineering systems and advance the frontiers of science and technology.

Mission Statement

The mission of the electrical engineering program is to prepare graduates for successful professional engineering careers, emphasizing the electrical engineering capabilities necessary to engage in service, research and development to serve local and global societies.

Program Educational Objectives

The objectives of the electrical engineering program are to produce a graduate who will:

- be a successful engineer as a member or a leader of a team that comprises a diverse group of professionals

- possess effective communication skills and continue to improve technical and non-technical competencies through engagement in professional activities, projects and/or graduate studies

- be a holistic citizen demonstrating social, ethical and professional responsibilities

Program Outcomes

Upon graduation, an AUS graduate in electrical engineering should demonstrate:

- an ability to apply knowledge of mathematics, science and engineering

- an ability to design and conduct experiments, as well as to analyze and interpret data

- an ability to design a system, component or process to meet the desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability and sustainability

- an ability to function on multidisciplinary teams

- an ability to indentify, formulate and solve engineering problems

- an understanding of professional and ethical responsibilities

- an ability to communicate effectively

- the broad education necessary to

understand the impact of engineering solutions in a global, economic, environmental and societal context

- a recognition of the need for, and an ability to engage in lifelong learning

Admission to the Program

Admission to the program follows the university's undergraduate admission requirements. AUS students transferring into the program must have a cumulative GPA of 2.00 or higher in undergraduate-level courses and must be approved by both the head of the department and the college associate dean. For information on how to submit a change of major request, please refer to Fields of Study/Change of Major under the Academic Policies and Regulations section earlier in the catalog.

Degree Requirements

Students must complete a minimum of 140 credits to graduate. After the third year, each student is required to devote at least five weeks to the summer internship prior to graduation. Each student is required to complete, over a two-course sequence, a senior design project in the fourth year. All electrical engineering students are required to take a comprehensive assessment examination during their senior year.

Students seeking the BSEE degree must satisfy the following requirements:

General Education Requirements (minimum of 44 credits)

- English language competency requirement: a minimum of 12 credits in 100-level or above writing (WRI)/English (ENG) courses, including ENG 204 and ENG 207

- Arabic heritage requirement: any course listed as an Arabic heritage requirement

- mathematics and/or statistics requirement: MTH 103 and MTH 104

- science requirement: CHM 101, PHY 101 and PHY 101L

- humanities and social sciences requirement: a minimum of 15 credits to be selected from the areas of humanities

and social sciences with at least six credits taken from the humanities area and at least six credits taken from the social sciences area

- computer literacy requirement: satisfied through extensive use of computer resources in courses throughout the engineering curriculum
- information literacy requirement: satisfied through WRI 102 and ENG 204

Major Requirements (77 credits)

- COE 210 Programming I
- COE 221 Digital Systems
- COE 240 Microprocessors
- ELE 211 Electric Circuits I
- ELE 212 Electric Circuits II
- ELE 241 Electronics I
- ELE 241L Electronics I Laboratory
- ELE 311 Electromagnetics
- ELE 321 Signals and Systems
- ELE 332L Measurements and Instrumentation Laboratory
- ELE 341 Electronics II
- ELE 341L Electronics II Laboratory
- ELE 351 Electrical Energy Conversion
- ELE 353 Control Systems I
- ELE 353L Control Systems I Laboratory
- ELE 360 Probability and Stochastic Processes
- ELE 361 Communications
- ELE 361L Communications Laboratory
- ELE 371 Power Systems Analysis
- ELE 371L Electric Machines and Power Systems Laboratory
- ELE 397 Professional Training in Electrical Engineering
- ELE 424 Digital Signal Processing
- ELE 490 Electrical Engineering Design Project I
- ELE 491 Electrical Engineering Design Project II
- NGN 110 Introduction to Engineering and Computing
- NGN 111 Introduction to Statistical Analysis
- MCE 224 Engineering Mechanics–Statics and Dynamics
- MTH 203 Calculus III
- MTH 205 Differential Equations
- MTH 221 Linear Algebra
- PHY 102 General Physics II
- PHY 102L General Physics Laboratory II

Major Electives
(minimum of 13 credits)

A minimum of 13 credits of elective courses, including a one-credit laboratory, from the following approved list of major electives must be completed. Students may complete one major engineering elective outside electrical engineering (ELE) from the approved list available in the department.

- COE 370 Communications Networks
- ELE 426 Imaging Systems
- ELE 432 Medical Instrumentation I
- ELE 439L Medical Electronics Systems Laboratory
- ELE 441 Microelectronic Devices
- ELE 444 Control Systems II
- ELE 451 Wireless Communications
- ELE 452 Digital Communications
- ELE 453 Microwave Engineering
- ELE 454 Antennas and Wave Propagation
- ELE 455 Digital Image Processing
- ELE 456 Pattern Recognition
- ELE 458 Multimedia Communications and Networking
- ELE 458L Communications Systems Laboratory
- ELE 471 Digital Control Systems
- ELE 473 Industrial Instrumentation and Control
- ELE 476L Instrumentation and Control Systems Laboratory
- ELE 481 Power System Protection
- ELE 482 Electric Power Distribution Systems
- ELE 483 Power System Operation
- ELE 484 Control of AC Machines
- ELE 485 Power Electronics
- ELE 486 Electric Drives
- ELE 488L Power Engineering Laboratory
- ELE 494 Special Topics in Electrical Engineering

Free Electives
(minimum of 6 credits)

Students must complete a minimum of six credits of any courses offered at AUS at or above the 100 level, excluding MTH 101.

Proposed Sequence of Study
Bachelor of Science in Electrical Engineering (BSEE)

FIRST YEAR (37 credit hours)			
Term	**Course #**	**Course Title**	**Credit**
Fall	CHM 101	General Chemistry I	4
	WRI 101	Academic Writing	3
	MTH 103	Calculus I	3
	PHY 101	General Physics I	3
	PHY 101L	General Physics Laboratory I	1
	NGN 110	Introduction to Engineering and Computing	2
		Total	**16**
Spring	WRI 102	Writing and Reading Across the Curriculum	3
	MTH 104	Calculus II	3
	PHY 102	General Physics II	3
	PHY 102L	General Physics Laboratory II	1
	NGN 111	Introduction to Statistical Analysis	2
	FRE XXX	Free Elective	3
		Total	**15**
Summer	MTH 205	Differential Equations	3
	HSS XXX	Humanities/Social Sciences	3
		Total	**6**

SECOND YEAR (39 credit hours)			
Term	**Course #**	**Course Title**	**Credit**
Fall	COE 210	Programming I	3
	ENG 204	Advanced Academic Writing	3
	ELE 211	Electric Circuits I	3
	MTH 203	Calculus III	3
	MTH 221	Linear Algebra	3
		Total	**15**
Spring	ELE 212	Electric Circuits II	3
	ELE 241	Electronics I	3
	ELE 241L	Electronics I Laboratory	1
	COE 221	Digital Systems	4
	MCE 224	Engineering Mechanics–Statics and Dynamics	3
	HSS XXX	Humanities/Social Sciences	3
		Total	**17**
Summer	COE 240	Microprocessors	4
	ENG 207	English for Engineering	3
		Total	**7**

THIRD YEAR (34 credit hours)			
Term	**Course #**	**Course Title**	**Credit**
Fall	ELE 311	Electromagnetics	3
	ELE 321	Signals and Systems	3
	ELE 341	Electronics II	3
	ELE 341L	Electronics II Laboratory	1
	ELE 351	Electrical Energy Conversion	3
	ELE 353	Control Systems I	3
		Total	**16**
Spring	ELE 332L	Measurements and Instrumentation Laboratory	1
	ELE 353L	Control Systems I Laboratory	1
	ELE 360	Probability and Stochastic Processes	3
	ELE 361	Communications	3
	ELE 371	Power Systems Analysis	3
	ELE 371L	Electric Machines and Power Systems Laboratory	1
	MJE XXX	Major Elective	3
	HSS XXX	Humanities/Social Sciences	3
		Total	**18**
Summer	ELE 397	Professional Training in Electrical Engineering	0

FOURTH YEAR (30 credit hours)			
Term	**Course #**	**Course Title**	**Credit**
Fall	ELE 361L	Communications Laboratory	1
	ELE 424	Digital Signal Processing	3
	ELE 490	Electrical Engineering Design Project I	2
	MJE XXX	Major Elective	3
	MJE XXX	Major Elective	3
	HSS XXX	Humanities/Social Sciences	3
		Total	**15**
Spring	ELE 491	Electrical Engineering Design Project II	2
	MJE XXX	Major Elective	3
	MJE XXX	Major Elective Laboratory	1
	HSS XXX	Humanities/Social Sciences	3
	ARA XXX	Arabic Heritage	3
	FRE XXX	Free Elective	3
		Total	**15**

Minor in Electrical Engineering

Students enrolling in the electrical engineering minor should have normally completed a minimum of 60 credits of course work and be in good academic standing.

The following rules apply:

- The minor consists of a minimum of 20 credits, including at least 10 credits in courses at or above the 300 level in electrical engineering.
- At least 10 credits of the minor must be taken in residence at AUS.
- At least seven credits of the 10 credits at or above the 300 level must be taken in residence at AUS.
- A grade of at least C- in each course and a GPA of at least 2.00 must be earned in courses taken to satisfy the minor.

Students seeking a minor in electrical engineering must complete the following courses or their equivalent. All course prerequisites must be satisfied.

Minor Requirements (10 credits)
- ELE 212 Electric Circuits II
- ELE 241 Electronics I
- ELE 241L Electronics I Laboratory
- ELE 351 Electrical Energy Conversion

Minor Electives (minimum of 10 credits)
- three 300-level or above ELE courses with at least three credits in a 400-level ELE course
- any 300-level ELE laboratory

Department of Mechanical Engineering

Mohammad-Ameen Jarrah, Head

Faculty

Mamoun Abdel-Hafez
Saad Ahmed
Basil Darras
Ibrahim Deiab
Ibrahim Dincer
Hany El Kadi
Ameen El-Sinawi
Mohamed Gadalla
Ali Jhemi
Kinda Khalaf
Akbar Khatibi
Mahmut Reyhanoglu
Tariq Shamim
Essam M. Wahba
Liang Zheng

Bachelor of Science in Mechanical Engineering (BSME)

The mechanical engineering program is accredited by the Engineering Accreditation Commission (EAC) of ABET as well as by the UAE Ministry of Higher Education and Scientific Research.

Mechanical engineering provides an excellent broad education for today's technological world. Mechanical engineers model, analyze, test and manufacture engines that power ground and aerospace vehicles. They also design, operate and modify power plants that convert the energy in fuels, wind and sunlight into electricity and other forms of energy, and they construct intelligent machines and robots in industry. Mechanical engineers also build prototypes of conventional, electric and sports vehicles, develop energy management systems for industry, design and manufacture smart products, and develop new engineering materials that are used in manufacturing high-tech products. Mechanical engineers use computers extensively in their everyday operation; they develop computer control systems for automobiles and industrial processes and design computer interfaces to mechanical and energy systems.

Mechanical engineers also develop alternative energy sources such as solar, fuel cells, wind and alternative fuels. They are heavily involved in new technologies such as MEMS, nanosystems and biotechnologies. In short, the mechanical engineer is a vital backbone element of the engineering profession.

The BSME curriculum produces high-quality graduates whose work is notable for its breadth and technical excellence. Graduates have the ability to work logically, accurately and efficiently; to gather and use information effectively; and to continue enhancing their careers through lifelong learning. The program stresses the effective use of technology, information resources and engineering tools. It prepares graduates to work in a broad range of areas related to the mechanical engineering profession. The program instills leadership qualities based on moral and ethical principles coupled with sound and rational judgment. Finally, the program is designed to prepare interested students for graduate studies in mechanical engineering and other areas of professional practice.

Mission Statement

The mission of the mechanical engineering program at AUS is to prepare students for successful careers in industry, government and academia by providing a high-quality mechanical engineering education.

Program Educational Objectives

The objectives of the mechanical engineering program are to produce graduates who will:

- actively embrace leadership roles in the practice of mechanical engineering, conduct research and development to advance technology and foster innovation, and apply their engineering problem-solving skills as needed in the workplace
- actively participate in on-going professional development, updating and adapting their core knowledge, and acquiring new knowledge and skills to pursue new career opportunities
- serve the engineering profession and support sustainable development

Program Outcomes

Upon graduation, an AUS graduate in mechanical engineering should demonstrate:

- an ability to apply knowledge of mathematics, science and engineering
- an ability to design and conduct experiments, as well as to analyze and interpret data
- an ability to design a system, component or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability and sustainability
- an ability to function on multidisciplinary teams
- an ability to indentify, formulate and solve engineering problems
- an understanding of professional and ethical responsibility
- an ability to communicate effectively
- the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental and societal context
- a recognition of the need for and an ability to engage in lifelong learning
- a knowledge of contemporary issues
- an ability to use the techniques, skills and modern engineering tools necessary for engineering practice

Admission to the Program

Admission to the program follows the university's undergraduate admission requirements. AUS students transferring into the program must have a cumulative GPA of 2.00 or higher in undergraduate-level courses and must be approved by both the head of the department and the college associate dean. For information on how to submit a change of major request, please refer to Fields of Study/Change of Major under the Academic Policies and Regulations section earlier in the catalog.

Degree Requirements

Students must complete a minimum of 140 credits to graduate. After the third year, each student is normally required to devote at least five weeks to the

summer internship prior to graduation. In the fourth year, each student is required to complete a senior design project over a two-course sequence. All mechanical engineering students are required to take a comprehensive assessment examination during the capstone course sequence.

Students seeking the BSME degree must satisfy the following requirements:

General Education Requirements (minimum of 44 credits)
- English language competency requirement: a minimum of 12 credits in 100-level or above writing (WRI)/ English (ENG) courses, including ENG 204 and ENG 207
- Arabic heritage requirement: any course listed as an Arabic heritage requirement
- mathematics and/or statistics requirement: MTH 103 and MTH 104
- science requirement: CHM 101, PHY 101 and PHY 101L
- humanities and social sciences requirement: a minimum of 15 credits to be selected from the areas of humanities and social sciences with at least six credits taken from the humanities area and at least six credits taken from the social sciences area
- computer literacy requirement: satisfied through extensive use of computer resources in courses throughout the engineering curriculum
- information literacy requirement: satisfied through WRI 102 and ENG 204

Major Requirements (78 credits)
- ELE 225 Electric Circuits and Devices
- MCE 215 Engineering Drawing and Workshop
- MCE 220 Statics
- MCE 222 Dynamics
- MCE 223 Mechanics of Materials
- MCE 230 Materials Science
- MCE 234 Computer Applications in Mechanical Engineering
- MCE 240 Fluid Mechanics
- MCE 241 Thermodynamics I
- MCE 311 Engineering Measurements
- MCE 321 Mechanical Design I
- MCE 322 Mechanical Design II

- MCE 325 Numerical Methods in Engineering
- MCE 328 Dynamic Systems
- MCE 331 Manufacturing Processes
- MCE 332L Materials and Manufacturing Processes
- MCE 341 Thermodynamics II
- MCE 344 Heat Transfer
- MCE 345L Thermofluids Laboratory
- MCE 397 Professional Training in Mechanical Engineering
- MCE 410 Control Systems
- MCE 415L Dynamics and Control Systems Laboratory
- MCE 482 Intermediate Fluid Mechanics
- MCE 490 Design Project I
- MCE 491 Design Project II
- MTH 203 Calculus III
- MTH 205 Differential Equations
- MTH 221 Linear Algebra
- NGN 110 Introduction to Engineering and Computing
- NGN 111 Introduction to Statistical Analysis
- PHY 102 General Physics II
- PHY 102L General Physics Laboratory II

Major Electives (minimum of 12 credits)
Four technical elective courses (minimum of 12 credits) in the major areas of mechanical engineering must be completed. Two courses (minimum of six credits) should be from the applied mechanics area and two courses (minimum of six credits) should be from the thermofluids area.

Applied Mechanics
- BME 430 Biomechanics
- MCE 416 Kinematics and Dynamics of Machinery
- MCE 423 Mechanical Vibrations
- MCE 434 Fundamentals of Computer-Aided Design and Manufacturing
- MCE 435 Advanced Mechanics of Materials
- MCE 439 Computer Integrated Manufacturing
- MCE 443 Introduction to Engineering Fracture Mechanics
- MCE 464 Introduction to Robotics

- MCE 466 Introduction to Mechatronics
- MCE 473 Applied Finite Element Analysis
- MCE 477 Composite Materials
- MCE 494 Special Topics in Mechanical Engineering

Thermofluids
- MCE 445 Energy Systems
- MCE 446 Refrigeration and Air Conditioning
- MCE 447 Internal Combustion Engines
- MCE 450 Energy Conservation and Management
- MCE 473 Applied Finite Elements Analysis
- MCE 487 Turbomachines
- MCE 488 Introduction to Computational Fluid Dynamics
- MCE 494 Special Topics in Mechanical Engineering

Free Electives (minimum of 6 credits)
Students must complete a minimum of six credits of any courses offered at or above the 100 level, excluding MTH 101.

Proposed Sequence of Study
Bachelor of Science in Mechanical Engineering (BSME)

FIRST YEAR (37 credit hours)			
Term	Course #	Course Title	Credit
Fall	CHM 101	General Chemistry I	4
	WRI 101	Academic Writing	3
	MTH 103	Calculus I	3
	PHY 101	General Physics I	3
	PHY 101L	General Physics Laboratory I	1
	NGN 110	Introduction to Engineering and Computing	2
		Total	16
Spring	WRI 102	Writing and Reading Across the Curriculum	3
	MTH 104	Calculus II	3
	PHY 102	General Physics II	3
	PHY 102L	General Physics Laboratory II	1
	NGN 111	Introduction to Statistical Analysis	2
	FRE XXX	Free Elective	3
		Total	15
Summer	MTH 205	Differential Equations	3
	HSS XXX	Humanities/Social Sciences	3
		Total	6

SECOND YEAR (40 credit hours)			
Term	Course #	Course Title	Credit
Fall	ENG 204	Advanced Academic Writing	3
	MTH 221	Linear Algebra	3
	MCE 215	Engineering Drawing and Workshop	2
	MCE 220	Statics	3
	MCE 230	Materials Science	3
	MCE 241	Thermodynamics I	3
		Total	17
Spring	MCE 222	Dynamics	3
	MCE 223	Mechanics of Materials	3
	MCE 234	Computer Applications in Mechanical Engineering	2
	MCE 240	Fluid Mechanics	3
	MTH 203	Calculus III	3
	ELE 225	Electric Circuits and Devices	3
		Total	17
Summer	ENG 207	English for Engineering	3
	HSS XXX	Humanities/Social Sciences	3
		Total	6

THIRD YEAR (32 credit hours)			
Term	Course #	Course Title	Credit
Fall	MCE 332L	Materials and Manufacturing Processes	1
	MCE 311	Engineering Measurements	3
	MCE 321	Mechanical Design I	3
	MCE 331	Manufacturing Processes	3
	MCE 341	Thermodynamics II	3
	HSS XXX	Humanities/Social Sciences	3
		Total	16
Spring	MCE 322	Mechanical Design II	3
	MCE 325	Numerical Methods in Engineering	3
	MCE 328	Dynamic Systems	3
	MCE 344	Heat Transfer	3
	MCE 345L	Thermofluids Laboratory	1
	FRE XXX	Free Elective	3
		Total	16
Summer	MCE 397	Professional Training in Mechanical Engineering	0

FOURTH YEAR (31 credit hours)			
Term	Course #	Course Title	Credit
Fall	MCE 410	Control Systems	3
	MCE 415L	Dynamics and Control Systems Laboratory	1
	MCE 482	Intermediate Fluid Mechanics	3
	MCE 490	Design Project I	1
	MJE XXX	Major Elective	3
	MJE XXX	Major Elective	3
	HSS XXX	Humanities/Social Sciences	3
		Total	17
Spring	MCE 491	Design Project II	2
	MJE XXX	Major Elective	3
	MJE XXX	Major Elective	3
	HSS XXX	Humanities/Social Sciences	3
	ARA XXX	Arabic Heritage	3
		Total	14

Minor in Mechanical Engineering

Students enrolling in the mechanical engineering minor should have normally completed a minimum of 60 credits of course work and be in good academic standing.

The following rules apply:

• The minor consists of a minimum of 18 credits, including at least nine credits in courses at or above the 300 level in mechanical engineering.

• At least nine credits of the 18 credits required for the minor must be taken in residence at AUS.

• At least six credits of the nine credits at or above the 300 level must be taken in residence at AUS.

• A grade of at least C- in each course and an average GPA of at least 2.00 must be earned in courses taken to satisfy the minor.

Students seeking a minor in mechanical engineering must complete the following courses or their equivalent. All course prerequisites must be satisfied.

Minor Requirements (9 credits)
Student can choose one of the following lists of courses.

Option 1

• MCE 222 Dynamics or

MCE 224 Engineering Mechanics–Statics and Dynamics

• MCE 223 Mechanics of Materials

• MCE 240 Fluid Mechanics or MCE 241 Thermodynamics I

Option 2

• MCE 223 Mechanics of Materials or

MCE 222 Dynamics or

MCE 224 Engineering Mechanics–Statics and Dynamics

• MCE 240 Fluid Mechanics

• MCE 241 Thermodynamics I

Minor Electives (minimum of 9 credits)

Students must complete any three 300-level or above MCE courses.

Other Minors Offered by the College of Engineering

Minor in Aerospace Engineering

Saad Ahmed, Coordinator

Aerospace engineering deals with the analysis, design and performance of flight vehicles such as transport and military aircraft, helicopters, missiles and launch vehicles (rockets), and spacecraft such as the space shuttle. Aerospace engineering comprises several disciplines, namely aerodynamics, flight dynamics and control, avionics and navigation, aerospace propulsion, aerospace structures and materials, and aerospace manufacturing among others. Aerospace engineers apply their knowledge and skills to the design of aircraft components (e.g., wings and fuselages), systems (e.g., control systems) or spacecraft components and systems. This minor focuses on aeronautical engineering.

The following rules apply:

- The minor consists of a minimum of 18 credits, including at least nine credits in courses at or above the 300 level.
- At least nine credits of the 18 credits required for the minor must be taken in residence at AUS.
- At least six credits of the nine credits at or above the 300 level must be taken in residence at AUS.
- A grade of at least C- in each course and a GPA of at least 2.00 must be earned in courses taken to satisfy the minor.

Students seeking a minor in aerospace engineering must complete the following courses or their equivalent. All course prerequisites must be satisfied.

Minor Requirements (12 credits)
- ASE 350 Introduction to Aerospace Engineering
- ASE 415 Aircraft Stability and Control
- ASE 470 Aircraft Structures
- MCE 482 Intermediate Fluid Mechanics

**Minor Electives
(minimum of 6 credits)**
- ASE 454 Thermal Design Issues for Aerospace Systems

- ASE 475 Aircraft Design
- ASE 486 Compressible Flow
- ASE 494 Special Topics in Aerospace Engineering
- MCE 473 Applied Finite Element Analysis
- MCE 477 Composite Materials
- MCE 487 Turbomachines
- MCE 488 Introduction to Computational Fluid Dynamics

Minor in Biomedical Engineering

Hasan Al-Nashash, Coordinator

Biomedical engineering is a multidisciplinary field that combines principles of physics, chemistry and biology with engineering sciences to study and advance knowledge in biology, physiology and human health. A biomedical engineer can develop diagnostic instruments, novel materials, drug delivery systems or informatics, for example. The main objective for a biomedical engineer is to improve the quality of life for patients, and to help in the advancement of health professions.

Students enrolling in the biomedical engineering minor should have normally completed a minimum of 60 credits of course work and be in good academic standing.

The following rules apply:

- The minor consists of a minimum of 18 credits, including at least nine credits in courses at or above the 300 level.
- At least nine credits of the 18 credits required for the minor must be taken in residence at AUS.
- At least six credits of the nine credits at or above the 300 level must be taken in residence at AUS.
- A grade of at least C- in each course and a GPA of at least 2.00 must be earned in courses taken to satisfy the minor.

Students seeking a minor in biomedical engineering must complete the following courses or their equivalent. All course prerequisites must be satisfied.

Minor Requirements (14 credits)
- BIO 101 General Biology I
- BIO 210 Introduction to Anatomy and Physiology

- BME 210 Biomedical Ethics

Two of the following three courses:
- BME 410 Biomedical Systems Modeling I
  or CHE 481 Fundamentals of Biomedical Engineering
- BME 420 Biomedical Electronics I
  or ELE 432 Medical Instrumentation I
- BME 430 Biomechanics

**Minor Electives
(minimum of 4 credits)**
- BME 411 Biomedical Systems Modeling II
- BME 421 Biomedical Electronics II
- BME 422 Biomedical Imaging
- BME 431 Biomaterials
- BME 432 Biothermofluids
- BME 440 Bioinformatics
- BME 494 Special Topics in Biomedical Engineering
- COE 412 Embedded Systems
- ELE 455 Digital Image Processing

Minor in Engineering Management

Hazim El-Baz, Coordinator

The engineering management minor provides students the opportunity to learn how to manage major engineering projects. The content of the courses offered in the minor is a unique blend of engineering tools and business management skills.

Students enrolling in the engineering management minor should have normally completed a minimum of 60 credits of course work and be in good academic standing.

The following rules apply:

- The minor consists of a minimum of 18 credits, including at least nine credits in courses at or above the 300 level in engineering management.
- At least nine credits of the 18 credits required for the minor must be taken in residence at AUS.
- At least six credits of the nine credits at or above the 300 level must be taken in residence at AUS.
- A grade of at least C- in each course and an average GPA of at least 2.00 must be earned in courses taken to satisfy the minor.

Students seeking a minor in engineering management must complete the following courses or their equivalent. All course prerequisites must be satisfied.

Minor Requirements (12 credits)
- ECO 201 Principles of Microeconomics
- EGM 361 Management for Engineers
- EGM 362 Engineering Project Management
- EGM 364 Engineering Economy (for non-chemical and civil engineering students)
  or CHE 332 Engineering Economy
  or CVE 367 Project Estimating, Planning and Control

Minor Electives (minimum of 6 credits)
- ACC 201 Fundamentals of Financial Accounting
- CHE 470 Waste Management and Control in Chemical Engineering
- COE 420 Software Engineering
- CVE 463 Construction Management
- ECO 202 Principles of Macroeconomics
- EGM 465 Quality Engineering
- EGM 494 Special Topics in Engineering Management
- ELE 483 Power System Operation
- FIN 201 Fundamentals of Financial Management
- MCE 450 Energy Conservation and Management

Minor in Mechatronics Engineering

Rached Dhaouadi, Coordinator

Mechatronics is the synergistic combination of mechanical engineering, electronics and electrical engineering with computer science and control systems engineering. Modern devices contain mechanical, electrical and computer systems working in harmony to achieve higher levels of functionality than previously imaginable. For example, the automobile has evolved beyond a mechanical system with electrical components to an integrated system of electro-mechanical devices, embedded microprocessors, network communications and intelligent software. To develop these advanced systems, a new breed of engineer is needed who not only has a strong foundation in engineering design, but also feels comfortable working across the traditional engineering disciplines of manufacturing, mechanical, electrical and computer engineering.

Students enrolling in the mechatronics engineering minor should have normally completed a minimum of 60 credits of course work and be in good academic standing.

The following rules apply:

- The minor consists of a minimum of 18 credits for electrical engineering and computer engineering students and 20 credits for mechanical engineering students, including at least nine and 10 credits respectively in courses at or above the 300 level.
- At least nine credits of the 18 credits (or 10 credits out of the 20 credits, as applicable) required for the minor must be taken in residence at AUS.
- At least six credits of the credits at or above the 300 level must be taken in residence at AUS.
- A grade of at least C- in each course and an average GPA of at least 2.00 must be earned in courses taken to satisfy the minor.

Students seeking a minor in mechatronics engineering must complete the following courses or their equivalent. All course prerequisites must be satisfied.

Minor Requirements (15–17 credits)

- Computer engineering students: ELE 212, ELE 351, ELE 353, MCE 223 or MCE 300, and MCE 464
- Electrical engineering students: COE 412, ELE 476L, ELE 473 or ELE 486, MCE 215, MCE 223 or MCE 300, and MCE 464
- Mechanical engineering students: COE 221, COE 240, ELE 341, ELE 351 and MCE 466

Minor Electives (minimum of 3 credits)
- COE 431 Industrial Computer Systems
- COE 482 Soft Computing
- ELE 444 Control Systems II
- ELE 473 Industrial Instrumentation and Control

- ELE 486 Electric Drives
- MCE 416 Kinematics and Dynamics of Machinery
- MCE 466 Introduction to Mechatronics

Minor in Petroleum Engineering

Ibrahim Kocabas, Coordinator

Petroleum engineering is a field that develops the means to extract oil and gas from underground reservoirs. The petroleum engineering minor prepares chemical, mechanical, civil and other engineering students for employment in the upstream petroleum industry. The petroleum engineering minor provides students with knowledge of drilling, production and reservoir engineering areas including formation evaluation and enhanced oil recovery methods.

Students enrolling in the petroleum engineering minor should have normally completed a minimum of 60 credits and be in good academic standing.

The following rules apply:

- The minor consists of a minimum of 18 credits, including at least nine credits in courses at or above the 300 level.
- At least nine credits of the 18 credits required for the minor must be taken in residence at AUS.
- At least six credits of the nine credits at or above the 300 level must be taken in residence at AUS.
- A grade of at least C- in each course and a GPA of at least 2.00 must be earned in courses taken to satisfy the minor.

Students seeking a minor in petroleum engineering must complete the following courses or their equivalent. All course prerequisites must be satisfied. Students pursuing a minor in petroleum engineering are encouraged to take their summer internship in the petroleum industry.

Minor Requirements (12 credits)

Students minoring in petroleum engineering must complete four out of the following five courses, for a minimum of 12 credits:
- PET 305 Fundamentals of Petroleum Operations
- PET 365 Petroleum Reservoir Engineering

- PET 375 Petroleum Drilling and Production
- PET 385 Formation Evaluation
- PET 414 Enhanced Oil Recovery

Minor Electives
(minimum of 6 credits)
- CHE 434 Petroleum Refining Processes
- CHE 436 Natural Gas Processing
- CHE 467 Corrosion
- CVE 331 Geotechnical Engineering Principles
- CVE 341 Water Resources Engineering
- MCE 450 Energy Conservation and Management
- MCE 487 Turbomachines
- PET 494 Special Topics in Petroleum Engineering

Cisco Regional Networking Academy

The Cisco Regional Networking Academy in the College of Engineering is responsible for establishing local academies with other institutions in the UAE and across the region. The academy follows an e-learning model that delivers web-based educational content, online testing and performance tracking combined with comprehensive practical training on actual networks. The program is a comprehensive course that trains participants to design, build and maintain computer networks and prepares them for industry-standard certifications, including Cisco Certified Network Associate (CCNA™) and Cisco Certified Network Professional (CCNP™). Furthermore, the academy offers courses in fundamentals of network security and IT essentials. For more details, please visit www.aus.edu/engr/cisco/.
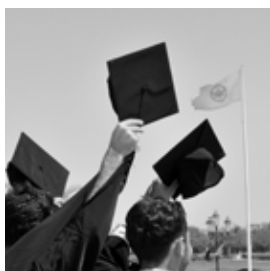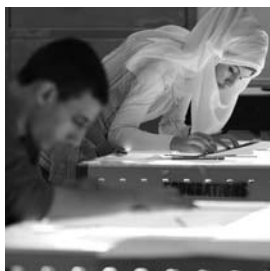
School of Architecture and Design

Dean

Peter Di Sabatino

Associate Dean

W. Eirik Heintz

The School of Architecture and Design (SA&D) is committed to providing a comprehensive education that will enable its graduates to make significant contributions to the Gulf region and the broader global community through conscientious participation in practice.

All its undergraduate programs have received accreditation from the UAE Ministry of Higher Education and Scientific Research.

The School of Architecture and Design grounds its curriculum in the conviction that good design results from a combination of a deep understanding of culture, ethical engagement in society and a respect for the creative skills needed to build a sustainable material culture.

Against this background, the school is committed to the primary objective of providing its students with relevant, professional instruction in the fields of architecture, design management, interior design, multimedia design and visual communication.

The school is dedicated to inquiry and to the development of hands-on technical skills and competence in digital and other advanced media. It also fosters in its students a regional and cultural awareness and the responsibility for creating humane environments. The school seeks to contribute to the development of professional standards and innovation in architecture and design.

The School of Architecture and Design meets its objectives through degree programs that feature the following:

- an environment that encourages achievement and personal growth
- a faculty of professionals who balance continuing scholarship and creative work with their desire for excellence in teaching
- a comprehensive advising and student counseling system that tracks student development and progress
- a general education curriculum that offers a solid foundation
- a clear and consistent approach that is evident throughout the curriculum
- a variety of courses that are continually updated to reflect rapidly changing design practices and the growing role of digital communication
- a respect for culture, traditions and needs of society

Degree Programs

SA&D offers the following undergraduate degree programs:

- Bachelor of Architecture
- Bachelor of Interior Design
- Bachelor of Science in Design Management
- Bachelor of Science in Multimedia Design
- Bachelor of Science in Visual Communication

SA&D also offers a Master in Urban Planning degree program. For details, please refer to the *AUS Graduate Catalog*.

Minor Offerings

SA&D offers the following minors:

- architectural studies
- design management
- interior design
- landscape architecture
- urban design
- urban planning

Details on each minor are provided in the catalog section of the department offering the minor.

Career Opportunities

SA&D prepares students for careers in a wide variety of fields:

- architecture, environmental design, interior design, urban design, urban planning
- graphic design, advertising, packaging design, illustration, digital media, animation, computer simulations, video, photography, printmaking
- communications and public relations, fine arts and cultural arts administration, gallery management, advertising campaign planning

Special Notes

Space Availability in Studio Majors

Admission to the studio majors (architecture, interior design, multimedia design and visual communication) in the School of Architecture and Design is competitive and limited to 144 students in first-year studio courses. The number of available seats in second-year studio majors is limited to the following:

- architecture and interior design   64
- multimedia design and visual communication   32

The number of available seats in second-year design management is not limited.

The School of Architecture and Design accepts new and transfer students only in the fall semester.

Selection for Promotion

Selection for enrollment in second-year studios is competitive. Criteria for promotion include an assessment of:

- GPA in the foundations studio sequence
- GPA in non-studio first-year courses including mathematics, English, writing, history and digital design

In addition, selection for promotion may also include portfolio review.

Year status in the School of Architecture and Design is determined by enrollment in the major studio, regardless of the total number of credits earned.

Computer Requirements

At the beginning of the third year, all students of architecture, interior design, design management, multimedia design and visual communication are required to have a personal laptop computer. SA&D will provide software for student-owned laptops to students enrolled in upper-level studio courses in these five majors. The laptop must meet specifications published by SA&D in order to be used within the program. Laptops that do not meet specifications published by the school may not adequately run software required to complete course work.

Course Selection

Students are cautioned that the specific selection of courses available for a chosen major at the time of initial registration is subject to change. The School of Architecture and Design will make every effort to monitor student progress through the advisement process. Students are encouraged to make course selections based on the stated degree requirements, subject to the listed prerequisites.

Studio Supplies

Supply expenses for studio courses are in addition to tuition fees, and lab fees may apply for some courses. However, students are given a limited account for printing and plotting large-format drawings.

Ownership of Student Work

The School of Architecture and Design reserves the right to retain indefinitely selected examples of student work for archiving, publicity and exhibition.

Responsibility for Equipment

The School of Architecture and Design provides an extensive range of digital and electronic equipment for student use. For some courses, school equipment is checked out to a student or a group of students for use on or off campus. Students are expected to treat school equipment with care and will be held financially responsible for breakage, damage, late return or loss.

Foundations Year

The foundations year is an autonomous one-year program that supports the common educational requirements for all fields of study within the School of Architecture and Design. As such, the program provides the basic design education that will enable students to function on appropriate practical, theoretical and critical levels in their sophomore (second) year. All students in the School of Architecture and Design are required to successfully complete the major-required courses in this first year to be considered for advancement to the second year of their chosen major.

The foundations year aims to achieve three instructional objectives:

• competence in the fundamental skills and concepts of design analysis, representation and presentation through studio-based exercises and projects

• familiarity with the historical implications and chronology of design conventions through in-class lectures and written assignments

• a basic proficiency in computer-aided design technology through exercises and project work in a lab setting

The foundations year utilizes three distinct teaching formats in order to provide a broad and inclusive introduction to design methods and practice. Studio courses, which form the core of the foundations year, encourage one-on-one student/professor interaction and allow the student to develop an independent design process. History courses are taught in a lecture context where information and ideas are disseminated in a classroom setting using visual images to support learning. Digital courses are taught using a combination of class lectures and instructional technology. Professors interact with students on various levels through the use of traditional lectures, digital media, network software and digital storage systems.

Within the foundations year, students are encouraged to develop a basic practical and critical understanding of design principles. Experimentation and exploration with materials, tools and techniques are fostered in the realization of two- and three-dimensional concepts and ideas.

The foundations year consists of the following courses, which are major requirements in all studio programs. Successful completion of these courses is required to be considered for advancement to the second year of the chosen studio major:

• DES 100 Digital Media in Design
• DES 111 Descriptive Drawing I
• DES 112 Descriptive Drawing II
• DES 121 History of Material Culture I
• DES 122 History of Material Culture II
• DES 131 Design Foundations I
• DES 132 Design Foundations II

Design management students must complete DES 100, DES 111, DES 131 and either DES 121 or DES 122.

Although some faculty members specialize as foundations professors, the teaching load in foundations is shared by professors from various majors including architecture, interior design, multimedia design and visual communication. This professional collaboration between disciplines at the foundations level initiates early student dialogue with senior-level faculty and provides the program with a healthy influx of cross-disciplinary expertise and discourse. It is this important aspect of the foundations program that ensures a balanced response to the needs of the various degree programs it supports.

Department of Architecture

Alcibiades Tsolakis, Head

Faculty

Sean Anderson
Peter Di Sabatino
Mona El-Mousfy
W. Eirik Heintz
George Katodrytis
Thomas Kennedy
Ginger Krieg Dosier
Ivan Markov
Kevin Mitchell
Ahmed Mokhtar
Nadia Mounajjed
Amer Moustafa
Samia Rab
Jay Randle
Mehdi Sabet
William Sarnecky
Kevin Sweet
Gregor Weiss

Bachelor of Architecture (BArch)

Architecture arises from the same wellspring of civilization as other universal manifestations of material culture: arts, histories, letters, religion and commerce. Still, the artifacts designated as architecture possess a scale, permanence and a pervasive influence unique among human endeavors. These qualities endow the discipline with a cultural prominence few other professions enjoy.

In its contemporary university setting, the study of architecture is naturally concerned with complex, interdisciplinary issues. Some matters are primarily individual and practical: the basic human need for shelter and the desire to contrive efficient, adequate forms for the patterns of daily life. Architecture, in this sense, may concern aspirations and meanings, but its primary intent is to attain a practical advantage here and now.

Architecture also has a transcendent motive, arising from an imperative to articulate, physically and spatially, the social, ceremonial and environmental choices a given culture makes within a given setting. Architecture expresses living values. It gives abiding form, order and proportion to activities. Architecture is a message to the world about certainties and doubts, values and beliefs, preoccupations and neglects. It both expresses and reveals.

The practice of architecture today, as in the past, requires coordinated contributions from multiple of fields. The craft of the architect runs a gamut of expertise and awareness: technical, environmental, aesthetic, cultural, historical and commercial. Consequently, the study of architecture investigates principles and applications of technology, art, humanities, engineering, physical and social sciences, business and management. Architectural design, finally, is the synthetic practice that links and gives significant form to these interdisciplinary contributions.

Program Goals

The Bachelor of Architecture program aims to:

- provide students with a comprehensive understanding of the historical and theoretical forces that shape architecture
- prepare future architects to make contributions to improving the built environment through leadership, personal engagement and professional practice while respecting human diversity and adhering to ethical standards
- provide students with the knowledge and skills necessary to conceive, develop and communicate complex design proposals
- foster critical thinking and cultivate an approach to design that values the role of research, analysis and experimentation
- promote a critical understanding of building technologies and their impact on the built environment

Program Outcomes

Upon completion of the Bachelor of Architecture program, graduates should be able to:

- apply historical precedents to inform and enrich the design process
- describe how personal design work relates to historical traditions and design theory
- explain the diversity of roles in contemporary architectural practice
- demonstrate an understanding of the standards of professional practice
- analyze and explain the cultural role that the architectural profession plays with regional and global contexts
- demonstrate an understanding of the principles of universal design
- demonstrate the ability to employ traditional means of representation, computer-aided design, digital modeling and digital fabrication to develop and communicate design ideas
- articulate, present and discuss design proposals in verbal, written and graphic form
- employ research, analysis and iterative processes to inform and enrich the process of design
- engage in critical self-reflection in order to evaluate the design process and its results
- demonstrate the ability to integrate structural, constructional and environmental control systems into a comprehensive building design proposal
- analyze and explain the relationship between building design and environmental sustainability
- demonstrate an understanding of how traditional and contemporary building technologies have been developed to respond to environmental challenges

Curriculum

The Bachelor of Architecture (BArch) degree (five-year professional program) is intended for the student seeking a professional career in architecture. The program entails a minimum of five years of university studies plus professional training. A

minimum of 172 credits comprise the degree program, including a minimum of 109 credits of required course work in architecture and closely associated fields. These courses represent the irreducible core of the discipline of architecture.

Each student is required to extend the core curriculum with 18 credits of approved architecture electives. The intent is to balance the concern for in-depth professional competence with another for the individual's interest and aptitude. These courses should be selected in consultation with the student's advisor.

The specialized professional curriculum is supported by a minimum of 42 credits of general education requirements. Designed to ensure a broad educational foundation, this base is held in common among all graduates of American University of Sharjah.

University studies present a unique opportunity to explore other fields of interest. Based solely on individual interests, each architecture student must select nine credits of free electives from general university offerings.

Some major required courses count toward general education requirements. In such cases, both requirements are considered as being met but the credits only count once toward total degree hours.

The curriculum is designed to meet the requirements for licensure that prevail in the United Arab Emirates and to prepare the graduate for professional practice throughout the region. Some students may aspire either to advanced study in the field or to practice in a broader global setting. Accordingly, the curriculum follows established international norms for a first professional degree in architecture.

Advancement in the Program

The number of seats in architecture is limited. Formal advancement is competitive. Only the most highly

qualified foundations students will be promoted. To be considered for advancement to the second year of the Bachelor of Architecture program a student must successfully complete the following requirements:

- all four foundations studio courses (DES 111, DES 112, DES 131, DES 132) with a minimum grade point average (GPA) of 2.00 out of 4.00 in each sequence (design and drawing)
- both courses in history of material culture (DES 121 and DES 122)
- DES 100 Digital Media in Design
- MTH 111 Mathematics for Architects or its prerequisite (MTH 003), or MTH 103 Calculus I
- at least one course in writing (WRI) at the 100 level or above
- a minimum of 27 undergraduate credit hours (including the above courses)
- a cumulative GPA of 2.30

In addition, selection for promotion may also include portfolio review.

Formal notification of advancement in the program will be announced by the School of Architecture and Design in mid-June after release of final grades by the Office of the Registrar at the end of the spring semester. In the event that there are more students who qualify for advancement than available spaces, candidates will be promoted in the major based on academic achievement, and a waiting list will be established. In the event of a tie, students with the highest GPA in all four foundations studio courses will advance to second year. In the event of a second tie, students with the highest GPA in both courses in the history of material culture (DES 121 and DES 122) and mathematics (MTH 111, MTH 003 or MTH 103) will advance to the second year. If there are available seats at the time of fall registration, consideration will be given to those students who fulfilled requirements during summer session or who wish to change majors, based on the same advancement criteria as noted above. Students who need to

repeat a second-year studio course will also be competing for the limited number of seats in the major.

Promotion Reviews in Architecture

As an extension of the regular advising process, the performance of each architecture student is reviewed following the completion of each of the second, third and fourth years in the program. A student must pass each review to continue in the major and must have attained:

- a minimum cumulative GPA of C+ (2.30) in all university courses
- a minimum major studio average of 2.30 in each year of the architectural design studio sequence (ARC 201 and ARC 202, ARC 301 and ARC 302, ARC 401 and ARC 402)

Notes:

- A student who does not attain the required studio average must repeat the studio with the lower grade.
- A student may repeat only one studio of the architectural design studio sequence over the course of the program.
- A student who fails to achieve the minimum studio average necessary for promotion after repeating the studio with the lower grade is dismissed from the program.

Enrolling in Graduate Courses

Fifth-year architecture students with a minimum CGPA of 3.00 can register for up to two 500-level graduate courses in urban planning (UPL) and receive credit toward their undergraduate degree. Students pay the regular undergraduate fee per credit. Graduate UPL courses taken at the undergraduate level cannot be used to fulfill graduate program requirements and cannot be repeated for credit toward an AUS graduate degree, regardless of whether or not these courses were used to meet an undergraduate program requirement.

Degree Requirements

A minimum of 172 credits, including the following, is required:

- a minimum of 42 credits of general education requirements (of which six credits double count as major requirements)
- 109 credits of major requirements
- a minimum of 18 credits of approved architecture electives
- a minimum of nine credits of free electives
- 14 weeks of approved professional training (internship)

Note: *In order to graduate with a Bachelor of Architecture degree, a student must maintain a minimum cumulative grade point average (CGPA) of 2.00 and must have attained a studio average of 2.30 in the final studio sequence (ARC 505 and either ARC 506 or ARC 592). A student who does not attain the required 2.30 average must repeat the studio with the lower grade, provided no studio in the architectural design studio sequence was repeated earlier.*

Please see the proposed sequence of study for a strategy for completing the requirements in five years.

General Education Requirements (minimum of 42 credits)

- English language competency requirement (minimum of 12 credits): 100 level or above of English (ENG)/ writing (WRI) courses
- Arabic heritage requirement (3 credits)
- mathematics and/or statistics requirement (minimum of 6 credits): MTH 103 or MTH 111 and one other math or statistics course
- science requirement (minimum of 6 credits): PHY 104 and one other science course
- humanities and social sciences requirement (minimum of 15 credits): DES 121, DES 122 and at least six of the remaining nine credits taken in the social sciences area (DES 121 and DES 122 double count as major requirements)
- computer literacy requirement: satisfied through extensive use of computer resources throughout the architecture curriculum
- information literacy requirement: satisfied through WRI 102

For complete information on general education requirements, please refer to the Graduation Requirements section within the Academic Policies and Regulations section of this catalog.

Major Requirements (109 credits)

In addition to the foundations courses, the following courses constitute the major requirements for the Bachelor of Architecture degree program:

- ARC 201 Architectural and Interior Design Studio I
- ARC 202 Architectural and Interior Design Studio II
- ARC 213 Analysis and Methods in Architecture
- ARC 224 Modern Foundations of Art and Architecture
- ARC 232 Survey of Materials and Practices in Construction
- ARC 242 Statics and Mechanics of Materials for Architecture
- ARC 301 Architectural Design Studio III
- ARC 302 Architectural Design Studio IV
- ARC 325 Ideas in Architecture
- ARC 333 Rough Construction Process
- ARC 344 Structural Design for Architects
- ARC 354 Environmental Energies and Building Form
- ARC 364 Introduction to Computer-Aided Drawing
- ARC 397 Internship in Architecture I (6 weeks)
- ARC 401 Architectural Design Studio V
- ARC 402 Architectural Design Studio VI
- ARC 434 Finish Construction Process
- ARC 455 Environmental Control Systems
- ARC 462 Design Management
- ARC 471 Site Planning
- ARC 497 Internship in Architecture II (8 weeks)
- ARC 505 Architectural Design Studio VII
- ARC 506 Architectural Design Studio VIII or
  ARC 592 Final Project Design
- ARC 561 Construction Management

Internship

To qualify for the Bachelor of Architecture degree, students must fulfill the internship requirements prior to graduation. The purpose of the internship is to expose students to the profession and give them an opportunity to apply their academic knowledge in a practical setting. The internship consists of a minimum of 240 work hours for third-year students and 320 work hours for fourth-year students with an approved employer. Students' internships are ultimately evaluated by the internship coordinator with a Pass/Fail grade. Completing the internship requirement is a prerequisite for registering in some studio courses. Architecture students are highly encouraged to complete the internship program during the summers following their third and fourth years. For details on internship eligibility and registration, please refer to Internship Registration under Registration and Course Information in the Academic Policies and Regulations section of this catalog.

Final Project Option

Fifth-year architecture students normally complete two studio courses. Students who select the final project option will substitute ARC 592 Final Project Design (6 credits) for the second studio course (ARC 506). In addition, ARC 591 Final Project Research (3 credits) must be completed before ARC 592 and will count as a major elective. The final project option is subject to departmental approval.

Major Electives (minimum of 18 credits)

- 0HRM 202 History of Material Culture in the Arabian Gulf II
- All ARC and IDE courses not listed above as major requirements count as major electives.

Free Electives (minimum of 9 credits)

Students must complete a minimum of nine credits in any courses offered at or above the 100 level.

Proposed Sequence of Study
Bachelor of Architecture (BArch)

FIRST YEAR (30/31 credit hours)			
Term	Course #	Course Title	Credit
Fall	WRI 101	Academic Writing	3
	DES 111	Descriptive Drawing	3
	DES 121	History of Material Culture I	3
	DES 131	Design Foundations I	3
	MTH 111 or MTH 103	Mathematics for Architects or Calculus I	4/3
		Total	15/16
Spring	WRI 102	Writing and Reading Across the Curriculum	3
	DES 100	Digital Media in Design	3
	DES 112	Descriptive Drawing II	3
	DES 122	History of Material Culture II	3
	DES 132	Design Foundations II	3
		Total	15

SECOND YEAR (36 credit hours)			
Term	Course #	Course Title	Credit
Fall	ARC 201	Architectural and Interior Design Studio I	6
	ARC 213	Analysis and Methods in Architecture	3
	PHY 104	Physics for Architects	3
	ELC XXX	English Language Competency	3
	MJE XXX	Major Elective	3
		Total	18
Spring	ARC 202	Architectural and Interior Design Studio II	6
	ARC 224	Modern Foundations of Art and Architecture	3
	ARC 232	Survey of Materials and Practices in Construction	3
	ARC 242	Statics and Mechanics of Materials for Architecture	3
	ELC XXX	English Language Competency	3
		Total	18

THIRD YEAR (37 credit hours)			
Term	Course #	Course Title	Credit
Fall	ARC 301	Architectural Design Studio III	6
	ARC 325	Ideas in Architecture	3
	ARC 333	Rough Construction Process	3
	MJE XXX	Major Elective	3
	ARA XXX	Arabic Heritage	3
		Total	18
Spring	ARC 302	Architectural Design Studio IV	6
	ARC 344	Structural Design for Architects	3
	ARC 354	Environmental Energies and Building Form	3
	ARC 364	Introduction to Computer-Aided Drawing	1
	MJE XXX	Major Elective	3
	HSS XXX	Humanities/Social Sciences	3
		Total	19
Summer	ARC 397	Internship in Architecture I	0

FOURTH YEAR (36 credit hours)			
Term	Course #	Course Title	Credit
Fall	ARC 401	Architectural Design Studio V	6
	ARC 455	Environmental Control Systems	3
	ARC 471	Site Planning	3
	MJE XXX	Major Elective	3
	MTH/ STA XXX	Mathematics/Statistics	3
		Total	18
Spring	ARC 402	Architectural Design Studio VI	6
	ARC 434	Finish Construction Process	3
	ARC 462	Design Management	3
	MJE XXX	Major Elective	3
	HSS XXX	Humanities/Social Sciences	3
		Total	18
Summer	ARC 497	Internship in Architecture II	0

FIFTH YEAR (33 credit hours)			
Term	Course #	Course Title	Credit
Fall	MJE XXX or ARC 591	Major Elective or Final Project Research	3
	ARC 505	Architectural Design Studio VII	6
	ARC 561	Construction Management	3
	FRE XXX	Free Elective	3
	HSS XXX	Humanities/Social Sciences	3
		Total	18
Spring	ARC 506 or ARC 592	Architectural Design Studio VIII or Final Project Design	6
	SCI XXX	Science	3
	FRE XXX	Free Elective	3
	FRE XXX	Free Elective	3
		Total	15

Bachelor of Interior Design (BID)

The profession of interior design lies between interior decoration and architecture. The interior designer must be competent to operate in both professions with an intimate knowledge of material selection, construction methods and furnishings as well as technical skills and construction expertise. Interior designers usually work as part of a design team, including architects, structural and mechanical engineers, and specialty consultants. They must possess a broad base of knowledge and skills.

Interior designers create and are responsible for all aspects of the interior environment: program, design, construction documents, supervision, lighting, and material and furniture selection. Like architects, they create interiors using space itself as a creative material, molded by architectural elements. They know intimately the materials of interior construction and finishing, decoration and lighting, and how to use these in innovative designs that support an overall spatial and formal idea.

Interior design services encompass research, development and implementation of plans and designs of interior environments. The objective is to improve the quality of life, increase productivity and protect the health, safety and welfare of the public. The professional interior designer must be able to see projects through from concept to physical completion.

Potential career options for persons majoring in interior design include interior designer, space planner and programmer, adaptive reuse designer, facilities planner, project manager, design journalist, educator, researcher, sales representative, renderer, healthcare designer, office planner and hospital designer.

Program Goals

The Bachelor of Interior Design program aims to:

- provide a comprehensive understanding of the historical and theoretical forces that shape interior built environments
- prepare future interior designers to make

contributions to improving the built environment through leadership, personal engagement and professional practice while respecting human diversity and adhering to ethical standards

- provide students with the knowledge and skills necessary to conceive, develop and communicate complex design proposals
- foster critical thinking and cultivate an approach to design that values the role of research, analysis and experimentation
- promote a critical understanding of building technologies and their impact on the built environment

Program Outcomes

Upon completion of the Bachelor of Interior Design program, graduates should be able to:

- apply historical precedents to inform and enrich the design process
- describe how personal design work relates to historical traditions and design theory
- explain the diversity of roles in current contemporary interior design practice
- demonstrate a comprehensive understanding of the standards of professional practice
- analyze and explain the cultural role that the architectural profession plays with regional and global contexts
- demonstrate an understanding of the principles of universal design
- demonstrate the ability to employ traditional means of representation, computer-aided design, digital modeling and digital fabrication to develop and communicate design ideas
- articulate, present and discuss design proposals in verbal, written and graphic form
- employ research, analysis and iterative processes to inform and enrich the process of design
- engage in critical self-reflection in order to evaluate the design process and its results
- demonstrate the ability to integrate constructional and environmental control systems, lighting and furnishings into an interior design proposal
- analyze and explain the relationship between interior design and environmental sustainability
- demonstrate an understanding of how traditional and contemporary building technologies have been developed to respond to environmental challenges

Curriculum

The interior design program at AUS emphasizes creativity and innovation in the art of interior design while giving students a strong background in technique and practical knowledge. The program core comprises six rigorous design studios following the common foundations year. Interior design studios encourage the development of analytical and reasoning skills, as well as the ability to conceptualize, develop and present designs. Architecture and interior design share a common second-year studio to heighten students' awareness and technical capabilities regarding primary formal, structural and tectonic issues. The interior design studios are supplemented by technical courses ranging from furniture design and materials and methods of interior construction to specific training in color and light.

The Bachelor of Interior Design (BID) degree is intended for the student seeking a professional career in interior design. The program entails a minimum of four years of university studies plus professional training. A minimum of 139 credits comprise the degree program, including a minimum of 85 credits of required course work in interior design and closely associated fields. These courses represent the core of the interior design discipline.

Each student is required to extend the core curriculum with nine credits of approved interior design electives. The intent is to balance the concern for in-depth professional competence with the concern for the individual's interest and aptitude. These courses should be selected in consultation with the student's advisor.

The specialized professional curriculum is supported by a minimum of 42 credits of university requirements. Designed to ensure a broad educational foundation, this base is held in common among all graduates of American University of Sharjah.

University studies represent a unique opportunity to explore other areas of interest. Based solely on individual interests, each interior design student must select nine additional credits of

free electives from general university offerings.

Some major required courses count toward general education requirements. In such cases, both requirements are considered as being met but the credits only count once toward total degree hours.

The curriculum is designed to meet requirements for licensure that prevail in the United Arab Emirates and to prepare the graduate for professional practice throughout the region. Some students may aspire either to advanced study in the field or to practice in a broader global setting. Accordingly, the curriculum follows established international norms for a professional degree in interior design.

Advancement in the Program

The number of seats in interior design is limited. Formal advancement is competitive. Only the most highly qualified foundations students will be promoted. To be considered for advancement to the second year of the Bachelor of Interior Design program, a student must successfully complete the following requirements:

- all four foundations studio courses (DES 111, DES 112, DES 131, DES 132) with a minimum GPA of 2.00 out of 4.00 in each sequence (design and drawing)
- both courses in history of material culture (DES 121 and DES 122)
- DES 100 Digital Media in Design
- MTH 111 Mathematics for Architects or its prerequisite (MTH 003), or MTH 103 Calculus I
- at least one course in writing (WRI) at the 100 level or above
- a minimum of 27 undergraduate credit hours (including the above courses)
- a minimum CGPA of 2.30

In addition, selection for promotion may also include portfolio review.

Formal notification of advancement in the program will be announced by the School of Architecture and Design in mid-June after release of final grades by the Office of the Registrar at the end of the spring semester. In the event that there are more students who qualify for advancement than available spaces, candidates will

be promoted in the major based on academic achievement, and a waiting list will be established. In the event of a tie, students with the highest GPA in all four foundations studio courses will advance to second year. In the event of a second tie, students with the highest GPA in both courses in history of material culture (DES 121 and DES 122) and mathematics (MTH 111, MTH 003 or MTH 103) will advance to the second year. If there are available spaces at the time of fall registration, consideration will be given to those students who fulfilled requirements during summer session or who wish to change majors, based on the same advancement criteria as noted above. Students who need to repeat a second-year studio course will also be competing for the limited number of seats in the major.

Promotion Review in Interior Design

As an extension of the regular advising process, the performance of each interior design student is reviewed following the completion of each of the second and third years in the program. A student must pass each review to continue in the major and must have attained:

- a minimum cumulative grade point average (CGPA) of C+ (2.30) in all university courses
- a minimum major studio average of 2.30 in each year of the interior design studio sequence (IDE 201 and IDE 202, IDE 301 and IDE 302)

Notes:

- A student who does not attain the required studio average must repeat the studio with the lower grade.
- A student may repeat only one studio of the interior design studio sequence over the course of the program.
- A student who fails to achieve the minimum studio average necessary for promotion after repeating the studio with the lower grade is dismissed from the program.

Degree Requirements

A minimum of 139 credits, including the following, is required:

- a minimum of 42 credits of general education requirements (of which six credits double count as major requirements)

- 85 credits of major requirements
- a minimum of nine credits of approved interior design electives
- a minimum of nine credits of free electives
- six weeks of approved professional training (internship)

Note: *In order to graduate with a Bachelor of Interior Design degree, a student must maintain a minimum cumulative grade point average (CGPA) of 2.00 and have attained a studio average of 2.30 in the final studio sequence (IDE 405 and either IDE 406 or IDE 492). A student who does not attain the required 2.30 average must repeat the studio with the lower grade, provided no studio in the interior design studio sequence was repeated earlier.*

Please see the proposed sequence of study for a specific strategy for completing the requirements in four years.

General Education Requirements (minimum of 42 credits)

- English language competency requirement (minimum of 12 credits): 100 level or above of English (ENG)/ writing (WRI) courses
- Arabic heritage requirement (minimum of 3 credits)
- mathematics and/or statistics requirement (minimum of 6 credits): MTH 103 or MTH 111 and one other math or statistics course
- science requirement (minimum of 6 credits): PHY 104 and one other science
- humanities and social sciences requirement (minimum of 15 credits): DES 121, DES 122 and at least six of the remaining nine credits taken in the social sciences area (DES 121 and DES 122 double count as major requirements)
- computer literacy requirement: satisfied through extensive use of computer resources throughout the interior design curriculum
- information literacy requirement: satisfied through WRI 102

For complete information on general education requirements, please refer to the Graduation Requirements section within the Academic Policies and Regulations section of this catalog.

Major Requirements (85 credits)

In addition to the foundations courses,

the following courses constitute the major requirements for the Bachelor of Interior Design degree program:

- IDE 201 Architectural and Interior Design Studio I
- IDE 202 Architectural and Interior Design Studio II
- IDE 223 History of Interior Design
- IDE 235 Interior Construction
- IDE 236 Interior Materials
- IDE 251 Color and Light
- IDE 301 Interior Design Studio III
- IDE 302 Interior Design Studio IV
- IDE 324 Modern Practices in Interior Design
- IDE 335 Furniture Design Basics
- IDE 352 Environmental Control Systems in Interior Design
- IDE 364 Introduction to Computer-Aided Drawing
- IDE 397 Internship in Interior Design (6 weeks)
- IDE 405 Interior Design Studio V
- IDE 406 Interior Design Studio VI or

IDE 492 Final Project Design
- IDE 461 Project Management
- IDE 462 Design Management

Internship

To qualify for the Bachelor of Interior Design degree, students must fulfill the internship requirements prior to graduation. The purpose of the internship is to expose students to the profession and give them an opportunity to apply their academic knowledge in a practical experience. The internship consists of a minimum of 240 work hours with an approved employer. Fulfilling the internship requirement is a prerequisite for registering in some studio courses. Interior design students are highly encouraged to complete the internship program during the summer after completion of their third year of studies. For details on internship eligibility and registration, please refer to Internship Registration under Registration and Course Information in

the Academic Policies and Regulations section of this catalog.

Final Project Option

Fourth-year interior design students normally complete two studio courses. Students who select the final project option will substitute IDE 492 Final Project Design (6 credits) for the second studio course (IDE 406). In addition, IDE 491 Final Project Research (3 credits) must be completed before IDE 492 and will count as a major elective. The final project option is subject to departmental approval.

Major Electives (minimum of 9 credits)

All other ARC and IDE courses not listed above count as major electives.

Free Electives (minimum of 9 credits)

Students must complete a minimum of nine credits in any courses offered at or above the 100 level.

Proposed Sequence of Study
Bachelor of Interior Design (BID)

FIRST YEAR (30/31 credit hours)			
Term	Course #	Course Title	Credit
Fall	WRI 101	Academic Writing	3
	DES 111	Descriptive Drawing I	3
	DES 121	History of Material Culture I	3
	DES 131	Design Foundations I	3
	MTH 111 or MTH 103	Mathematics for Architects or Calculus I	4/3
		Total	15/16
Spring	WRI 102	Writing and Reading Across the Curriculum	3
	DES 100	Digital Media in Design	3
	DES 112	Descriptive Drawing II	3
	DES 122	History of Material Culture II	3
	DES 132	Design Foundations II	3
		Total	15

SECOND YEAR (36 credit hours)			
Term	Course #	Course Title	Credit
Fall	IDE 201	Architectural and Interior Design Studio I	6
	IDE 223	History of Interior Design	3
	IDE 235	Interior Construction	3
	PHY 104	Physics for Architects	3
	ELC XXX	English Language Competency	3
		Total	18
Spring	IDE 202	Architectural and Interior Design Studio II	6
	IDE 236	Interior Materials	3
	IDE 251	Color and Light	3
	MTH/ STA XXX	Mathematics/Statistics	3
	ELC XXX	English Language Competency	3
		Total	18

THIRD YEAR (37 credit hours)			
Term	Course #	Course Title	Credit
Fall	IDE 301	Interior Design Studio III	6
	IDE 335	Furniture Design Basics	3
	IDE 324	Modern Practices in Interior Design	3
	ARA XXX	Arabic Heritage	3
	SCI XXX	Science	3
		Total	18
Spring	IDE 302	Interior Design Studio IV	6
	IDE 352	Environmental Control Systems in Interior Design	3
	IDE 364	Introduction to Computer-Aided Drawing	1
	MJE XXX	Major Elective	3
	HSS XXX	Humanities/Social Sciences	3
	FRE XXX	Free Elective	3
		Total	19
Summer	IDE 397	Internship in Interior Design	0

FOURTH YEAR (36 credit hours)			
Term	Course #	Course Title	Credit
Fall	IDE 405	Interior Design Studio V	6
	IDE 461	Project Management	3
	MJE XXX or IDE 491	Major Elective or Final Project Research	3
	HSS XXX	Humanities/Social Sciences	3
	FRE XXX	Free Elective	3
		Total	18
Spring	IDE 462	Design Management	3
	IDE 406 or IDE 492	Interior Design Studio VI or Final Project Design	6
	MJE XXX	Major Elective	3
	HSS XXX	Humanities/Social Sciences	3
	FRE XXX	Free Elective	3
		Total	18

Minor in Architectural Studies

Students enrolling in the architectural studies minor should have normally completed a minimum of 30 credits of course work and have a CGPA of 2.50 or higher.

The following rules apply:

- The minor consists of a minimum of 18 credits, including at least nine credits in courses at or above the 300 level in architecture.
- At least nine credits of the 18 credits required for the minor must be taken in residence at AUS.
- At least six credits of the nine credits at or above the 300 level must be taken in residence at AUS.
- A grade of at least C- in each course and a GPA of at least 2.00 must be earned in courses taken to satisfy the minor.

Students seeking a minor in architectural studies must complete the following courses or their equivalent. All course prerequisites must be satisfied.

Minor Requirements (9 credits)

A student must complete nine credits from the following courses:

- ARC 201 Architectural and Interior Design Studio I
- ARC 202 Architectural and Interior Design Studio II
- ARC 213 Analysis and Methods in Architecture
- ARC 224 Modern Foundations of Art and Architecture
- ARC 232 Survey of Materials and Practices in Construction

Minor Electives (minimum of 9 credits)

Students must complete nine credits in 300-level or above architecture courses not listed as minor requirements.

Minor in Interior Design

Students enrolling in the interior design minor should have normally completed a minimum of 30 credits of course work and have a GPA of 2.50 or higher.

The following rules apply:

- The minor consists of a minimum of 18 credits, including at least nine credits in courses at or above the 300 level in interior design.
- At least nine credits of the 18 credits required for the minor must be taken in residence at AUS.
- At least six credits of the nine credits at or above the 300 level must be taken in residence at AUS.
- A grade of at least C- in each course and a GPA of at least 2.00 must be earned in courses taken to satisfy the minor.

Students seeking a minor in interior design must complete the following courses or their equivalent. All course prerequisites must be satisfied.

Minor Requirements (9 credits)

A student must complete nine credits from the following courses:

- IDE 223 History of Interior Design
- IDE 235 Interior Construction
- IDE 236 Interior Materials
- IDE 251 Color and Light
- IDE 335 Furniture Design Basics

Minor Electives (minimum of 9 credits)

Students must complete nine credits in 300-level or above IDE courses not listed as minor requirements.

Minor in Landscape Architecture

Students enrolling in the landscape architecture minor should have normally completed a minimum of 30 credits of course work and be in good academic standing.

The following rules apply:

- The minor consists of a minimum of 18 credits, including at least nine credits in courses at or above the 300 level in architecture.
- At least nine credits of the 18 credits required for the minor must be taken in residence at AUS.
- At least six credits of the nine credits at or above the 300 level must be taken in residence at AUS.
- A grade of at least C- in each course and a GPA of at least 2.00 must be earned in courses taken to satisfy the minor.

Students seeking a minor in landscape architecture must complete the following courses or their equivalent. All course prerequisites must be satisfied.

Minor Requirements (9 credits)

- ARC 324 History of Landscape Architecture
- ARC 471 Site Planning
- ARC 473 Introduction to Landscape Architecture

Minor Electives (minimum of 9 credits)

Students must complete a total of nine credits as follows:

- a minimum of three credits from courses in Group I
- a minimum of three credits from courses in Group II

Group I (minimum of 3 credits)

- ARC 374 Environmentally Sustainable Design
- ARC 424 Evolution of Cities
- ARC 573 Principles of Urban Design

Group II (minimum of 3 credits)

- BIO 102 General Biology II
- BIO 251/ENV 251 Environmental Ecology
- BIO 330 Ecosystems Management
- ENV 100 Principles of Environmental Sciences
- GEO 201 World Cultural Geography
- PHI 309 Ethics and the Environment
- SOC 302 Environmental Sociology
- SOC 380 Urban Sociology

Minor in Urban Design

Students enrolling in the urban design minor should have normally completed a minimum of 30 credits of course work and be in good academic standing.

The following rules apply:

- The minor consists of a minimum of 18 credits, including at least nine credits in courses at or above the 300 level in architecture.
- At least nine credits of the 18 credits required for the minor must be taken in residence at AUS.
- At least six credits of the nine credits at

or above the 300 level must be taken in residence at AUS.

- A grade of at least C- in each course and a GPA of at least 2.00 must be earned in courses taken to satisfy the minor.

Students seeking a minor in urban design must complete the following courses or their equivalent. All course prerequisites must be satisfied.

Minor Requirements (12 credits)
- ARC 424 Evolution of Cities
- ARC 505 Architectural Design Studio VII
- ARC 573 Principles of Urban Design

**Minor Electives
(minimum of 6 credits)**
- ARC 322 Global Issues in Architecture
- ARC 374 Environmentally Sustainable Design
- ARC 471 Site Planning
- ENV 100 Principles of Environmental Science
- PBA 101 Introduction to Public Administration
- PSY 102 Social Psychology
- SOC 380 Urban Sociology
- STA 202 Introduction to Statistics for Social Sciences
- any 500-level urban planning (UPL) course

Minor in Urban Planning

Students enrolling in the urban planning minor should have normally completed a minimum of 30 credits of course work and be in good academic standing.

The following rules apply:

- The minor consists of a minimum of 18 credits, including at least nine credits in courses at or above the 300 level in architecture.
- At least nine credits of the 18 credits required for the minor must be taken in residence at AUS.
- At least six credits of the nine credits at or above the 300 level must be taken in residence at AUS.
- A grade of at least C- in each course and a GPA of at least 2.00 must be earned in courses taken to satisfy the minor.

Students seeking a minor in urban design must complete the following courses or their equivalent. All course prerequisites must be satisfied.

**Minor Requirements
(minimum of 9 credits)**
- UPL 201 Introduction to Urban Planning

Option I
- ARC 573 Principles of Urban Design
- UPL X94 Special Topics in Urban Planning (transportation focus)

Option II
- CVE 263 Urban Transportation Planning
- UPL X94 Special Topics in Urban Planning (urban design focus)

Option III
- UPL X94 Special Topics in Urban Planning (urban design focus)
- UPL X94 Special Topics in Urban Planning (transportation focus)

**Minor Electives
(minimum of 9 credits)**
- ARC 424 Evolution of Cities
- ARC 473 Introduction to Landscape Architecture
- CVE 456 Traffic Engineering
- CVE 457 Airport Planning and Design
- ECO 410 Urban and Regional Economics
- ENV 411 Environmental Assessment and Management
- GEO 201 World Cultural Geography
- PBA 317 Urban Management
- PBA 410 Public Program Evaluation
- PHI 309 Ethics and the Environment
- SOC 302 Environmental Sociology
- SOC 380 Urban Sociology
- UPL X94 Special Topics in Urban Planning

Department of Design

Paul Bantey, Head

Faculty
Shoaib Nabi Ahmad
Tarek Al-Ghoussein
Amir Berbić
John Botthoff
Bob Dahm
Zlatan Filipović
David Hewitt
Mark Pilkington
Phil Sheil
Tonya Stewart
Jack Swanstrom
Seth Thompson

Bachelor of Science in Design Management (BSDM)

The Bachelor of Science in Design Management (BSDM) provides students with the opportunity to engage in a design-based program with entrepreneurial and communication components. Design management as a discipline integrates visual design and business studies. This major is especially well suited to students who have a keen interest in the managerial aspects of design. The essential elements of this profession are the ability to communicate design needs, track progress and outcomes, identify the requirements of design projects and coordinate with clients as well as with professional teams in the field of design.

The program provides broad insights into the foundations, theory and application of design and business studies. A solid foundation in visual design prepares students to understand the language and complexities involved in the efforts of the creative teams, as well as to speak fluently the "language" of design. Additionally, course work in the disciplines of business, management and communication prepares students to recruit clients; pitch projects; write copy for print, television and radio; and master systems and marketing skills.

Typical target professional positions in the fast growing field of design management include administrative

and managerial careers in media and service industries as advertising agency principals, project managers and team leaders, advertising campaign planners, client services specialists, advertising buyers, account and sales representatives, communications specialists, public relations professionals, exhibition and event planners, material culture administrators, market research analysts and more.

Mission Statement

The Department of Design aims to cultivate critical thinking and learning through the study of design as a practice relevant to visual culture and communication.

Program Goals

The Bachelor of Science in Design Management program aims to:
- provide students with appropriate management skills and knowledge for leadership within team-oriented design disciplines
- provide students with the knowledge and skills required for critically analyzing and solving design problems using specific applications to respond to a variety of audiences and contexts
- provide students with the opportunities to explore how forms of communication are influenced by ethical considerations, self-expression and professional demands

Program Outcomes

Upon completion of the Bachelor of Science in Design Management program, graduates will be able to:
- communicate effectively both orally and in writing
- integrate analytical, technical and critical skills necessary to succeed in the contemporary world of entrepreneurial design
- demonstrate knowledge of how the management and allocation of appropriate resources will sustain a design practice
- demonstrate the skills necessary to work with interdisciplinary teams and clients to design and implement projects
- organize, plan, direct, communicate and distribute information using traditional and digital media systems

- demonstrate knowledge of management, communication and information theories
- analyze and describe the technical, formal and conceptual aspects of communication within the design process
- apply theories of design and management
- interpret principles of management and marketing in order to explain regional and global markets
- employ traditional and digital systems and media in the process of design and management projects
- demonstrate an understanding of the complex demands of design, business, labor and law
- demonstrate an understanding of ethical, social and cultural significance of design
- demonstrate an understanding of sustainable business models that are professionally and socially equitable
- explain how design projects for the media and service industries are initiated and evaluated

Degree Requirements

A minimum of 120 credits, including the following, is required:
- a minimum of 42 credits of general education requirements (of which 12 credits double count as major requirements)
- 63 credits of major requirements
- a minimum of 18 credits of major electives
- a minimum of nine credits of free electives
- six weeks of approved professional training (internship)
- a minimum CGPA of 2.00

General Education Requirements
- English language competency requirement (minimum of 12 credits): 100 level or above of English (ENG)/ writing (WRI) courses, including ENG 204 and ENG 225
- Arabic heritage requirement (minimum of 3 credits)
- mathematics and/or statistics requirement (minimum of 6 credits): MTH 101 or MTH 111 and STA 202 or QBA 201
- science requirement (minimum of 6 credits): two science courses
- humanities and social sciences

requirement: minimum of 15 credit hours. Note that DES 121 or DES 122, DES 231, ECO 201 and ECO 202 double count as major requirements
- computer literacy requirement: satisfied through extensive use of computer resources throughout the curriculum
- information literacy requirement: satisfied through WRI 102 and ENG 204

For complete information on general education requirements, please refer to the Graduation Requirements section within the Academic Policies and Regulations section of this catalog.

Major Requirements (63 credits)

The following courses constitute the major requirements for the Bachelor of Science in Design Management program.

In the School of Architecture and Design (36 credits)
- DES 100 Digital Media in Design
- DES 111 Descriptive Drawing I
- DES 121 History of Material Culture I or DES 122 History of Material Culture II
- DES 131 Design Foundations I
- DES 200 Communication Design
- DES 230 Digital Media in Communication Design
- DES 231 History of Design
- DES 300 Design Project
- DES 397 Internship in Design Management
- DES 462 Design Management
- DES 472 Exhibition Project
- VIS 260 Critical Discourse in Design
- VIS 361 The Design Profession

In the School of Business and Management (27 credits)
- BIS 101 Business Information Systems
- ECO 201 Principles of Microeconomics
- ECO 202 Principles of Macroeconomics
- MGT 201 Fundamentals of Management
- MGT 301 Organizational Behavior
- MGT 305 International Business
- MGT 360 Business Ethics and Social Responsibility
- MIS 201 Fundamentals of Management Information Systems
- MKT 201 Fundamentals of Marketing

Internship

Internship is a requirement for graduation. Arrangements for the internships are normally made with the students in the spring semester of their third year. The internship comprises six weeks of full-time work placement (normally 240 hours) at an approved professional company during the summer of the student's third year. A review of the student's internship journal and feedback from the employer are the basis of passing the internship requirement. For details on internship eligibility and registration, please refer to Internship Registration under Registration and Course Information in the Academic Policies and Regulations section of this catalog.

**Major Electives
(minimum of 18 credits)**

*Electives in Major Fields
(minimum of 12 credits)*

Students are required to complete at least three of the four electives in major fields at the 300 level or above. They can choose to take courses from the following:

- DES 132 Design Foundations II
- DES 310 Introduction to Video and Audio Production
- DES 320 Introduction to Web Design
- DES 394/494 Special Topics in Design Management
- DES 471 Managing the Design Process
- MCM 150 Introduction to Mass Communication Studies
- MCM 265 Principles of Public Relations

*Electives in Related Fields
(minimum of 6 credits)*

Three of six credits for the electives in related fields must be at the 300 level or above. Students must obtain approval of their advisor before selection of courses in these related fields:

- ENG 231 Writing for Visual Media
- PSY 101 General Psychology
- PSY 102 Social Psychology
- any course in SA&D
- any course in SBM
- any course in mass communication

Free Electives (minimum of 9 credits)

Students must complete a minimum of nine credits in any courses offered at or above the 100 level.

**Proposed Sequence of Study
Bachelor of Science in Design Management (BSDM)**

FIRST YEAR (30 credit hours)			
Term	**Course #**	**Course Title**	**Credit**
Fall	WRI 101	Academic Writing	3
	DES 111	Descriptive Drawing I	3
	DES 121 or MFE XXX	History of Material Culture I or Major Field Elective	3
	DES 131	Design Foundations I	3
	MTH 101 or MTH 111	Mathematics for Business or Mathematics for Architects	3
		Total	**15**
Spring	WRI 102	Writing and Reading Across the Curriculum	3
	DES 100	Digital Media in Design	3
	DES 122 or MFE XXX	History of Material Culture II or Major Field Elective	3
	MJE XXX	Major Elective	3
	SCI XXX	Science	3
		Total	**15**

SECOND YEAR (30 credit hours)			
Term	**Course #**	**Course Title**	**Credit**
Fall	ENG 204	Advanced Academic Writing	3
	STA 202 or QBA 201	Introduction to Statistics for Social Sciences or Quantitative Business Analysis	3
	BIS 101	Business Information Systems	3
	DES 231	History of Design	3
	DES 200	Communication Design	3
		Total	**15**
Spring	ECO 201	Principles of Microeconomics	3
	MGT 201	Fundamentals of Management	3
	VIS 260	Critical Discourse in Design	3
	DES 230	Digital Media in Communication Design	3
	SCI XXX	Science	3
		Total	**15**

THIRD YEAR (30 credit hours)			
Term	**Course #**	**Course Title**	**Credit**
Fall	MKT 201	Fundamentals of Marketing	3
	ECO 202	Principles of Macroeconomics	3
	DES 300	Design Project	3
	MIS 201	Fundamentals of MIS	3
	RFE XXX	Related Field Elective	3
		Total	**15**
Spring	ENG 225	Writing for Business	3
	VIS 361	The Design Profession	3
	MFE XXX	Major Field Elective	3
	HSS XXX	Humanities/Social Sciences	3
	FRE XXX	Free Elective	3
		Total	**15**
Summer	DES 397	Internship in Design Management	0

FOURTH YEAR (30 credit hours)			
Term	**Course #**	**Course Title**	**Credit**
Fall	MGT 305	International Business	3
	MGT 360	Business Ethics and Social Responsibility	3
	DES 462	Design Management	3
	MFE XXX	Major Field Elective	3
	HSS XXX	Humanities/Social Sciences	3
		Total	**15**
Spring	MGT 301	Organizational Behavior	3
	DES 472	Exhibition Project	3
	ARA XXX	Arabic Heritage	3
	RFE XXX	Related Field Elective	3
	FRE XXX	Free Elective	3
		Total	**15**

Bachelor of Science in Multimedia Design (BSMD)

Multimedia design studies span a number of disciplines associated with time-based and interactive media. This major engages students with broad-ranging interests in communications, motion graphics, audiovisual narrative construction and interactive applications.

Mission Statement

The Department of Design aims to cultivate critical thinking and learning through the study of design as a practice relevant to visual culture and communication.

Program Goals

The Bachelor of Science in Multimedia Design program aims to:

- provide students with the knowledge and skills necessary to solve communication problems and competently practice within the multimedia design fields
- introduce students to the knowledge and skills to develop appropriate communicative form across media, dimensions and formats
- provide students with the knowledge and skills required for critically analyzing and solving design problems using specific applications to respond to a variety of audiences and contexts

Program Outcomes

Upon completion of the Bachelor of Science in Multimedia Design program, graduates will be able to:

- communicate effectively both orally and in writing
- integrate a range of tools, media and technology in the processes of design and production
- reflect upon and explain the ethical dimensions of practice within multimedia design fields
- apply appropriate skills, particularly digital tools and techniques, within multimedia design fields
- demonstrate knowledge and abilities necessary to create designed experiences that are developed using storyboarding, computer scripting, sound editing and interface design
- employ visual and verbal forms of communication to convey ideas and information

- demonstrate an understanding of the practical relationship between form, content and context
- demonstrate the ability to use new and emerging technology as a vehicle for the invention of form and a means of effective communication
- employ interactive and time-based media formats (and their delivery) to mediate and communicate content
- plan, coordinate and manage multimedia design projects
- conduct research, synthesize information and apply specific knowledge within the design process
- discuss, analyze and evaluate the technical, formal and conceptual aspects of mediated communication
- demonstrate a critical understanding of design practice within regional and global contexts
- analyze precedents of contemporary works of visual culture to inform multimedia design and production
- demonstrate an understanding of professional responsibility to client and audience

Curriculum

The Bachelor of Science in Multimedia Design (BSMD) requires a minimum of four years (122 credits) of course work, 65 credits of which are required in multimedia-related studies, including sound, video, text, computer graphics and theory courses. The specialization is supported by 15 credits of major electives, 42 credits of general education requirements and nine credits of free electives. Some major required courses count toward general education requirements. In such cases, both requirements are considered as being met but the credits only count once toward total degree hours. In addition, professional experience (internship) is required of all students; firm/company placement normally occurs in the summer after completion of the third year.

The BSMD is a professional program designed for those who seek careers in modern design and media practice or in preparation of graduate studies. The curriculum follows standards of professional North American practice

and is conceived to meet or exceed the requirements of multimedia industries in the United Arab Emirates.

Advancement in the Program

The number of seats in multimedia design is limited. Formal advancement is competitive. Only the most highly qualified foundations students will be promoted. To be considered for advancement to the second year of the Bachelor of Science in Multimedia Design degree program, a student must successfully complete the following requirements. Additional promotion restrictions may also apply.

- all four foundations studio courses (DES 111, DES 112, DES 131, DES 132) with a minimum grade point average (GPA) of C (2.00) in each sequence (design and drawing)
- both courses in history of material culture (DES 121 and DES 122)
- DES 100 Digital Media in Design
- MTH XXX or its prerequisite (MTH 00X)
- at least one course in writing (WRI) at the 100 level or above
- a minimum of 27 undergraduate credit hours (including the above courses)
- a minimum CGPA of 2.30

Formal notification of advancement in the program will be announced by the School of Architecture and Design in mid-June after release of final grades by the Office of the Registrar at the end of the spring semester. In the event that there are more students who qualify for advancement than available spaces, candidates will be promoted in the major based on overall academic achievement, and a waiting list will be established. In the event of a tie, students with the highest GPA in the history of material culture and mathematics courses will advance to the second year. If there are available spaces at the time of fall registration, consideration will be given to those students who fulfilled requirements during summer session or who wish to change majors, based on the same advancement criteria as noted above. Students who need to repeat a second-year studio course will also be competing for the limited number of seats in the major.

Promotion Review in Multimedia Design

As an extension of the regular advising process, the performance of all students in multimedia design will be reviewed after the fourth semester for retention in the program. To successfully pass this review and to continue in the major, a combined GPA of C+ (2.30) must be attained in VIS 201 and VIS 202, with a minimum grade of C- (1.70) in each course. Student performance is also reviewed after the sixth semester for retention in the program. In order to continue in the major, a combined GPA of C+ (2.30) must be attained in MUM 301 and MUM 302 with a minimum of C- (1.70) in each course.

Notes:

- A student who does not attain the required studio average must repeat the studio with the lower grade.
- A student may repeat only one studio of the studio sequences required over the course of the program (VIS 201 and VIS 202, MUM 301 and MUM 302, MUM 401 and MUM 402, MUM 410 and MUM 420).
- A student who fails to achieve the minimum studio average necessary for promotion after repeating the studio with the lower grade is dismissed from the program.

Degree Requirements

A minimum of 122 credits, including the following, is required:

- a minimum of 42 credits of general education requirements (of which nine credits double count as major requirements)
- 65 credits of major requirements
- a minimum of 15 credits of major electives
- a minimum of nine credits of free electives
- six weeks of approved professional training (internship)
- a minimum CGPA of 2.00

Please see the proposed sequence of study for a specific strategy for completing the requirements in four years.

Note*: In order to graduate with a Bachelor of Science in Multimedia Design, a student must maintain a minimum cumulative grade point average (CGPA) of 2.0 and have attained a studio average of 2.30 in the final studio sequences (MUM 401 and MUM 402, MUM 410 and MUM 420). A student who does not attain the required 2.30 average must repeat the studio with the lower grade, provided no other required studio was repeated earlier.*

General Education Requirements (minimum of 42 credits)

- English language competency requirement (minimum of 12 credits): 100 level or above of English (ENG)/ writing (WRI) courses, including ENG 204 and ENG 231

- Arabic heritage requirement (minimum of 3 credits)

- mathematics and/or statistics requirement (minimum of 6 credits)

- science requirement (minimum of 6 credits): two science courses

- humanities and social sciences requirement (minimum of 15 credits): DES 121, DES 122, DES 231 and a minimum of six credits in social sciences courses (DES 121, DES 122 and DES 231 double count as major requirements)

- computer literacy requirement: satisfied through extensive use of computer resources throughout the design curriculum

- information literacy requirement: satisfied through WRI 102 and ENG 204

For complete information on general education requirements, please refer to the Graduation Requirements section within the Academic Policies and Regulations section of this catalog.

Major Requirements (65 credits)

In addition to the foundations courses, the following courses constitute the major requirements for the Bachelor of Science in Multimedia Design degree:

- DES 231 History of Design
- MUM 301 Design Studio III
- MUM 302 Design Studio IV
- MUM 397 Internship in Multimedia Design
- MUM 401 Design Studio V

- MUM 402 Design Studio VI
- MUM 410 Multimedia Design Senior Studio I
- MUM 420 Multimedia Design Senior Studio II
- VIS 201 Design Studio I
- VIS 202 Design Studio II
- VIS 213 Illustration Drawing
- VIS 221 Photography Basics
- VIS 230 Digital Media in Visual Communication
- VIS 260 Critical Discourse in Design
- VIS 361 The Design Profession

Internship

Internship is a requirement for graduation. Arrangements for the internships are normally made with the students in the spring semester of their third year. The internship comprises six weeks of full-time work placement (normally 240 hours) at an approved professional company during the summer of the student's third year. A review of the student's internship journal and feedback from the employer are the basis of passing the internship requirement. For details on internship eligibility and registration, please refer to Internship Registration under Registration and Course Information in the Academic Policies and Regulations section of this catalog.

Major Electives (minimum of 15 credits)

Students must complete at least 15 credits in major electives as follows:

- a minimum of six credits in 300-level or above major elective courses in multimedia design
- a minimum of three credits in 300-level or above major elective courses in visual communication
- a minimum of six credits from:
  - ARC 225 Islamic Art or Architecture
  - 300-level or above MUM courses not listed as MUM major requirements
  - 300-level or above VIS courses not listed as MUM major requirements

Free Electives (minimum of 9 credits)

Students must complete a minimum of nine credits in any courses offered at or above the 100 level.

Proposed Sequence of Study
Bachelor of Science in Multimedia Design (BSMD)

FIRST YEAR (30 credit hours)			
Term	**Course #**	**Course Title**	**Credit**
Fall	WRI 101	Academic Writing	3
	DES 111	Descriptive Drawing I	3
	DES 121	History of Material Culture	3
	DES 131	Design Foundations I	3
	DES 100	Digital Media in Design	3
		Total	**15**
Spring	WRI 102	Writing and Reading Across the Curriculum	3
	MTH/ STA XXX	Mathematics/Statistics	3
	DES 112	Descriptive Drawing II	3
	DES 122	History of Material Culture II	3
	DES 132	Design Foundations II	3
		Total	**15**

SECOND YEAR (30 credit hours)			
Term	**Course #**	**Course Title**	**Credit**
Fall	VIS 201	Design Studio I	3
	VIS 221	Photography Basics	3
	VIS 230	Digital Media in Visual Communication	3
	DES 231	History of Design	3
	ENG 204	Advanced Academic Writing	3
		Total	**15**
Spring	VIS 202	Design Studio II	3
	VIS 213	Illustration Drawing	3
	VIS 260	Critical Discourse in Design	3
	SCI XXX	Science	3
	MTH/ STA XXX	Mathematics/Statistics	3
		Total	**15**

THIRD YEAR (30 credit hours)			
Term	**Course #**	**Course Title**	**Credit**
Fall	MUM 301	Design Studio III	3
	MJE XXX	Major Elective	3
	MJE XXX	Major Elective	3
	ARA XXX	Arabic Heritage	3
	HSS XXX	Humanities/Social Sciences	3
		Total	**15**
Spring	MUM 302	Design Studio IV	3
	VIS 361	The Design Profession	3
	MJE XXX	Major Elective	3
	MJE XXX	Major Elective	3
	ENG 231	Writing for Visual Media	3
		Total	**15**
Summer	MUM 397	Internship in Multimedia Design	0

FOURTH YEAR (32 credit hours)			
Term	**Course #**	**Course Title**	**Credit**
Fall	MUM 401	Design Studio V	4
	MUM 410	Multimedia Design Senior Studio I	3
	MJE XXX	Major Elective	3
	HSS XXX	Humanities/Social Sciences	3
	SCI XXX	Science	3
		Total	**16**
Spring	MUM 402	Design Studio VI	4
	MUM 420	Multimedia Design Senior Studio II	3
	HSS XXX	Humanities/Social Sciences	3
	FRE XXX	Free Elective	3
	FRE XXX	Free Elective	3
		Total	**16**

Bachelor of Science in Visual Communication (BSVC)

The creation, manipulation and production of visual images and text are at the core of this major. Visual communication is influenced to a large degree by fast-changing worldwide technologies. Apart from broad technical, computer and design education, visual communication practitioners require an understanding of aesthetic trends, human nature, ethical boundaries and societal needs. Visual communicators aim to inform, persuade and influence behavior through the application of design principals.

Mission Statement

The Department of Design aims to cultivate critical thinking and learning through the study of design as a practice relevant to visual culture and communication.

Program Goals

The Bachelor of Science in Visual Communication program aims to:
- provide students with the practical knowledge and skills necessary to competently practice design within the visual communications fields
- introduce students to the knowledge and skills to develop appropriate, communicative visual form within various media, dimensions and formats
- provide students with the knowledge and skills required for critically analyzing and solving design problems using specific applications to respond to a variety of audiences and contexts

Program Outcomes

Upon completion of the Bachelor of Science in Visual Communication program, graduates will be able to:
- communicate effectively both orally and in writing
- integrate a range of tools, media and technology in the processes of design and production
- reflect upon and explain the ethical considerations related to creation, production, management and distribution within visual communication fields
- create and utilize image, language and typographic form in order to communicate specific content
- demonstrate an understanding of the practical relationship between form, content and context
- analyze various media formats to determine their effectiveness in mediating and communicating content
- demonstrate proficiency in the appropriate use of multiple design technologies
- conduct research, synthesize information and apply specific knowledge within the design process
- discuss, analyze and evaluate the technical, formal and conceptual aspects of visual communication
- analyze and describe contemporary and historical examples of visual communications
- explain how ideas are communicated and information is presented in the context of professional practice
- demonstrate a critical understanding of design practice within regional and global contexts

Curriculum

The Bachelor of Science in Visual Communication (BSVC) degree program requires a minimum of four years of university studies. The foundations year of visual communication (VisCom) consists of a basic education in applied design, training in computer applications and courses in the history and relevance of design and visual expression. In the following years, elements of design practice are explored in individual, hands-on studio projects. The design studio sequence is the program core that integrates practical, cultural and contextual aspects of visual communication.

The BSVC is a professional program. The 122 credits required for the degree comprise 65 credits in required visual communication, digital applications and visual design-related courses. This specialization is supported by 15 credits of major electives, 42 credits of general education requirements and nine credits of free electives. Some major required courses count toward general education requirements. In such cases, both requirements are considered as being met but the credits only count once toward total degree hours. In addition, professional training (internship) is required of all students; firm/company placement occurs in the summer after completion of the third year.

The BSVC is configured to prepare those who seek careers as designers as well as those who plan to pursue graduate studies in visual communication-related areas. The curriculum follows standards of professional North American organizations and is designed to meet or exceed requirements for visual communication experts in the United Arab Emirates.

Advancement in the Program

The number of seats in the visual communication program is limited. Formal advancement is competitive. Only the most highly qualified foundations students will be promoted. To be considered for advancement to the second year of the Bachelor of Science in Visual Communication program, a student must successfully complete the following requirements. Additional promotion restrictions may also apply.

- all four foundations studio courses (DES 111, DES 112, DES 131, DES 132) with a minimum grade point average (GPA) of C (2.00) in each sequence (design and drawing)
- both courses in history of material culture (DES 121 and DES 122)
- DES 100 Digital Media in Design
- MTH XXX or its prerequisite (MTH 00X)
- at least one course in writing (WRI) at the 100 level or above
- a minimum of 27 undergraduate credits (including the above courses)
- a minimum CGPA of 2.30

Formal notification of advancement in the program will be announced by the School of Architecture and Design in mid-June after release of final grades by the Office of the Registrar at the end of the spring semester. In the event that there are more students who qualify for advancement than available spaces, candidates will

be promoted in the major based on academic achievement, and a waiting list will be established. In the event of a tie, students with the highest GPA in the history of material culture (DES 121 and DES 122) courses and mathematics course will advance to the second year. If there are available spaces at the time of fall registration, consideration will be given to those students who fulfilled requirements during summer session or who wish to change majors, based on the same advancement criteria as noted above. Students who need to repeat a second-year studio course will also be competing for the limited number of seats in the major.

Promotion Review in Visual Communication

As an extension of the regular advising process, the performance of all students in the visual communication program will be reviewed after the fourth semester for retention in the program. To successfully pass this review and to continue in the major, a combined GPA of C+ (2.30) must be attained in VIS 201 and VIS 202, with a minimum grade of C- (1.70) in each course. Student performance is also reviewed after the sixth semester for retention in the program. In order to continue in the major, a combined GPA of C+ (2.30) must be attained in VIS 301 and VIS 302 with a minimum of C- (1.70) in each course.

Notes:

- A student who does not attain the required studio average must repeat the studio with the lower grade.
- A student may repeat only one studio of the studio sequences required over the course of the program (VIS 201 and VIS 202, VIS 301 and VIS 302, VIS 401 and VIS 402, VIS 410 and VIS 420).
- A student who fails to achieve the minimum studio average necessary for promotion after repeating the studio with the lower grade is dismissed from the program.

Degree Requirements

A minimum of 122 credits, including the following, are required:

- a minimum of 42 credits of general

education requirements (of which nine credits double count as major requirements)
- 65 credits of major requirements
- a minimum of 15 credits of major electives
- a minimum of nine credits of free electives
- six weeks of approved professional training (internship)
- a minimum CGPA of 2.00

Note*: In order to graduate with a Bachelor of Science in Visual Communication, a student must maintain a minimum cumulative grade point average (CGPA) of 2.00 and have attained a studio average of 2.30 in the final studio sequences (VIS 401 and VIS 402, VIS 410 and VIS 420). A student who does not attain the required 2.30 average must repeat the studio with the lower grade, provided no other required studio was repeated earlier.*

Please see the proposed sequence of study for a specific strategy for completing the requirements in four years.

General Education Requirements (minimum of 42 credits)

- English language competency requirement (a minimum of 12 credits): 100 level or above of English (ENG)/ writing (WRI) courses, including ENG 204 and ENG 231
- Arabic heritage requirement (a minimum of 3 credits)
- mathematics and/or statistics requirement (a minimum of 6 credits)
- science requirement (a minimum of 6 credits): two science courses
- humanities and social sciences requirement (a minimum of 15 credits): DES 121, DES 122, DES 231 and a minimum of six credits in social sciences courses (DES 121, DES 122 and DES 231 double count as major requirements)
- computer literacy requirement: satisfied through extensive use of computer resources throughout the visual communication curriculum
- information literacy requirement: satisfied through WRI 102 and ENG 204

For complete information on general education requirements, please refer to

the Graduation Requirements section within the Academic Policies and Regulations section of this catalog.

Major Requirements (65 credits)

In addition to the foundations courses, the following courses constitute the major requirements for the Bachelor of Science in Visual Communication degree:

- DES 231 History of Design
- VIS 201 Design Studio I
- VIS 202 Design Studio II
- VIS 213 Illustration Drawing
- VIS 221 Photography Basics
- VIS 230 Digital Media in Visual Communication
- VIS 260 Critical Discourse in Design
- VIS 301 Design Studio III
- VIS 302 Design Studio IV
- VIS 361 The Design Profession
- VIS 397 Internship in Visual Communication
- VIS 401 Design Studio V
- VIS 402 Design Studio VI
- VIS 410 Senior VisCom Studio
- VIS 420 Senior VisCom Portfolio

Internship

Internship is a requirement for graduation. Arrangements for the internships are normally made with the students in the spring semester of their third year. The internship comprises six weeks of full-time work placement (normally 240 hours) at an approved professional company during the summer of the student's third year. A review of the student's internship journal and feedback from the employer are the basis of passing the internship requirement. For details on internship eligibility and registration, please refer to Internship Registration under Registration and Course Information in the Academic Policies and Regulations section of this catalog.

Major Electives (minimum of 15 credits)

Students must complete at least 15 credits in major electives as follows:

- a minimum of six credits in 300-level or above major elective courses in visual communication

- a minimum of three credits in 300-level or above major elective courses in multimedia design
- a minimum of six credits from:

- ARC 225 Islamic Art or Architecture
- 300-level or above VIS courses not listed as VIS major requirements
- 300-level or above MUM courses not listed as VIS major requirements

Free Electives
(minimum of 9 credits)

Students must complete a minimum of nine credits in any courses offered at or above the 100 level.

Proposed Sequence of Study
Bachelor of Science in Visual Communication (BSVC)

FIRST YEAR (30 credit hours)			
Term	Course #	Course Title	Credit
Fall	WRI 101	Academic Writing	3
	DES 111	Descriptive Drawing I	3
	DES 121	History of Material Culture I	3
	DES 131	Design Foundations I	3
	DES 100	Digital Media in Design	3
		Total	15
Spring	WRI 102	Writing and Reading Across the Curriculum	3
	DES 112	Descriptive Drawing II	3
	DES 122	History of Material Culture II	3
	DES 132	Design Foundations II	3
	MTH/ STA XXX	Mathematics/Statistics	3
		Total	15

SECOND YEAR (30 credit hours)			
Term	Course #	Course Title	Credit
Fall	VIS 201	Design Studio I	3
	VIS 221	Photography Basics	3
	VIS 230	Digital Media in Visual Communication	3
	DES 231	History of Design	3
	ENG 204	Advanced Academic Writing	3
		Total	15
Spring	VIS 202	Design Studio II	3
	VIS 213	Illustration Drawing	3
	VIS 260	Critical Discourse in Design	3
	HSS XXX	Humanities/Social Sciences	3
	MTH/ STA XXX	Mathematics/Statistics	3
		Total	15

THIRD YEAR (30 credit hours)			
Term	Course #	Course Title	Credit
Fall	VIS 301	Design Studio III	3
	ENG 231	Writing for Visual Media	3
	MJE XXX	Major Elective	3
	MJE XXX	Major Elective	3
	ARA XXX	Arabic Heritage	3
		Total	15
Spring	VIS 302	Design Studio IV	3
	VIS 361	The Design Profession	3
	MJE XXX	Major Elective	3
	MJE XXX	Major Elective	3
	SCI XXX	Science	3
		Total	15
Summer	VIS 397	Internship in Visual Communication	0

FOURTH YEAR (32 credit hours)			
Term	Course #	Course Title	Credit
Fall	VIS 401	Design Studio V	4
	VIS 410	Senior VisCom Studio	3
	MJE XXX	Major Elective	3
	SCI XXX	Science	3
	HSS XXX	Humanities/Social Sciences	3
		Total	16
Spring	VIS 402	Design Studio VI	4
	VIS 420	Senior VisCom Portfolio	3
	HSS XXX	Humanities/Social Sciences	3
	FRE XXX	Free Elective	3
	FRE XXX	Free Elective	3
		Total	16

Minor in Design Management

Students enrolling in the design management minor should have normally completed a minimum of 30 credits of course work and be in good academic standing. The following rules apply:

- The minor consists of a minimum of 18 credits, including at least nine credits in courses at or above the 300 level.
- At least nine credits of the 18 credits required for the minor must be taken in residence at AUS.
- At least six credits of the nine credits at or above the 300 level must be taken in residence at AUS.
- A grade of at least C- in each course and a GPA of at least 2.30 must be earned in courses taken to satisfy the minor.

Minor Requirements (18 credits)

Students seeking a minor in design management must complete the following courses or their equivalent (all course prerequisites must be satisfied):

- at least nine credits in SA&D undergraduate courses, including DES 100
- at least nine credits in SBM undergraduate courses, including MGT 201

SBM

School of Business and Management

Dean
R. Malcolm Richards

Associate Dean
A. Paul Williams

The School of Business and Management (SBM) at American University of Sharjah provides high-quality, American-style business education. The school serves the needs of students throughout the region by offering programs that provide local and global perspectives, promote critical thinking and develop effective communication skills. As a part of this mission, the faculty members engage in applied, integrative and pedagogical scholarship.

Today's effective business professional must have competence in many disciplines, an understanding of a variety of relationships, and the ability to analyze evolving business, economic and governmental trends. Regardless of the specialty area, SBM students must be effective leaders who can organize and motivate groups to serve the goals of their organizations. Effectively adapting business practices to emerging conditions, such as the accelerating growth of technology, communications and the globalization of the business world, demands a thorough grasp of current business and economic processes, theory and applications. Through its pedagogy, the School of Business and Management:

- prepares individuals to identify, analyze and understand the interrelationships among business organizations and international, governmental and domestic institutions in the Emirates, the Gulf States and throughout the world
- develops individuals who can ethically lead organizations toward economic success and social and environmental responsibility in the global marketplace of the 21st century
- prepares individuals to integrate information resources and technology to enable them to anticipate and manage change

- advances students' knowledge of issues and practices affecting business organizations, international and domestic institutions, and governments
- develops an awareness of societal and environmental needs and concerns as they relate to ethical, professional and socially responsible business practices

Furthermore, the School of Business and Management provides its students with a solid business education core that emphasizes the following teaching methodologies:

- utilizing the latest American business methods, techniques and technologies to provide cutting-edge business education
- integrating multidisciplinary approaches to teaching and learning, utilizing the latest business and economic theories coupled with real-world business data analysis and presentations
- integrating multimedia and computer-based instruction throughout the foundation business curriculum to assist students in learning the latest techniques in business and management

Degree Programs

SBM offers the following undergraduate degrees:

- Bachelor of Arts in Economics
- Bachelor of Arts in Public Administration
- Bachelor of Science in Business Administration with majors in
  - accounting
  - economics
  - finance
  - management
  - management information systems
  - marketing

For details on the graduate programs, please refer to the *AUS Graduate Catalog*.

Minor Offerings

SBM offers the following minors:

- accounting
- economics
- finance
- international business
- management
- management information systems
- marketing
- public administration

Details on each minor are provided in the catalog section of the department offering the minor.

Minors are open to students from outside SBM and to SBM students pursuing majors in disciplines other than the discipline of the minor. SBM students may pursue only one minor offered within SBM.

To apply to an SBM minor program, students should have completed a minimum of 60 credits and be in good academic standing. Interested students must obtain approval from the head of the department and request a meeting to review specific program requirements.

Special Notes

To insure active and well-supported student participation in its e-learning programs, SBM requires students entering the Bachelor of Science in Business Administration (BSBA) program to purchase and use laptops specified by the university.

Students taking any course in SBM may be required to use the Texas Instrument BAII Plus calculator in exams, quizzes or any other form of evaluation. No other calculator models will be allowed. If a student does not have the required model for an evaluation, the student will have to take the evaluation without a calculator.

Additional fees may be charged for certain courses that require supplementary materials or support by the school.

Bachelor of Science in Business Administration (BSBA)

The Bachelor of Science in Business Administration program provides students with a 36-credit-hour core curriculum that offers a broad knowledge of business functions while emphasizing their application in a global business environment. In addition to the business core, the student must complete a minimum of 24 credit hours in a professional area constituting a major. The major allows each student to obtain in-depth knowledge in accounting, economics, finance, management, management information systems or marketing. In addition, students must complete a further minimum of 45 credit hours in general education courses and a minimum of 18 credit hours in free electives. With an appropriate choice of courses, students can benefit from their free electives to complete a minor.

Before admission into their major of choice, students in the BSBA program complete a common two-year program in which they fulfill most of the general education and essential core courses requirements.

To qualify for graduation from the BSBA program, students must complete a minimum of 123 credit hours.

Transfer students are required to take at least 30 credits in SBM at the 300 or 400 level, including MGT 406 Business Policy and Strategy.

Program Objectives and Outcomes

SBM prepares undergraduate students for careers in business and for further education by providing an American-style curriculum that applies global business perspectives to the historical and cultural context of the Gulf Region. Graduates from the BSBA program are expected to accomplish the following objectives:

• *Breadth of knowledge across business functions*

  Students will be able to apply the basic principles of economics, accounting and finance, management, information

systems, marketing and operations in the context of a global economy.

• *Understanding of ethical and social responsibility*

  Students will apply concepts and theories of ethics and social responsibility to practical business dilemmas, recognizing the implications of management decisions for the interests of key internal and external stakeholders.

• *Teamwork, interpersonal communication and leadership skills*

  Students will demonstrate competency in teamwork, presentation, writing and leadership skills through participation in group projects requiring industry analysis and using the latest business communication tools.

• *Critical thinking, analytical and problem-solving skills*

  Students will evaluate business situations and critique managerial decisions, using financial statements, statistical tools, and other appropriate methods to organize, analyze and present data.

• *Proficiency in a chosen business discipline*

  Students will use broad knowledge of a specific business discipline, applying concepts, theories and models appropriate to their fields of study.

Admission to the Program

Admission to the BSBA program follows the university's undergraduate admission requirements. AUS students transferring into the program must have a cumulative GPA of 2.00 or higher and permission of the associate dean. Due to the quantitative emphasis of the business program, new students are required to take the business school mathematics, English language and computer literacy placement examinations.

Degree Requirements

To qualify for graduation with a Bachelor of Science in Business Administration degree, students must complete a minimum of 123 credits with a cumulative GPA of 2.00 or better, including:

• a minimum of 45 credits of general education requirements

• 36 credits of core requirements

• a minimum of 24 credits of major requirements and major electives with a minimum GPA of 2.00

• a minimum of 18 credits of free electives

• satisfaction of the internship requirement

General Education Requirements (minimum of 45 credits)

Students in the BSBA program must complete the courses listed below as part of the university's general education requirements:

• BIS 101 Business Information Systems: satisfies the computer literacy requirement

• ENG 204 Advanced Academic Writing and ENG 208 Public Speaking: satisfy English language competency requirements

• ECO 201 Principles of Microeconomic and ECO 202 Principles of Macroeconomics: satisfy social science requirements

• MTH 101 Mathematics for Business I and MTH 102 Mathematics for Business II: satisfy mathematics requirements

For information on the remaining general education requirements, see the Academic Policies and Regulations section of this catalog.

Core Requirements (36 credits)

Students in the BSBA program must complete the following business core courses with a grade of C- or better:

• ACC 201 Fundamentals of Financial Accounting

• ACC 202 Fundamentals of Managerial Accounting

• BLW 301 Business Law

• ENG 225 Writing for Business

• FIN 201 Fundamentals of Financial Management

• MGT 201 Fundamentals of Management

• MGT 360 Business Ethics and Social Responsibility

• MGT 406 Business Policy and Strategy

- MIS 201 Fundamentals of Management Information Systems
- MKT 201 Fundamentals of Marketing
- QBA 201 Quantitative Business Analysis
- QBA 202 Operations Management

Major Requirements and Major Electives (minimum of 24 credits)
A total of 24 credits of course work must be completed in one of the following majors: accounting, economics, finance, management, management information systems or marketing. Required and elective courses for each major are listed within the corresponding major sections that follow. Students must successfully complete these courses with a minimum combined GPA of 2.00.

Free Electives (minimum of 18 credits)
BSBA students must complete a minimum of 18 credits of free electives, excluding MTH 100. With a proper selection of courses, students can benefit from the free electives to complete an 18-credit SBM minor.

Internship
Students in the BSBA program must complete an internship approved by SBM normally in the summer preceding their senior year. The internship will be graded as Pass/Fail. BUS 397 fulfills this requirement. For details on internship eligibility and registration, please refer to Internship Registration under Registration and Course Information in the Academic Policies and Regulations section of the catalog.

Proposed Sequence of Study

Newly admitted BSBA students are expected to follow the recommended sequence of study for their chosen major. Students who do not follow the recommended sequence of study should expect that their program will require more than four years to complete.

All BSBA students complete a common first-year and common second-year program, followed by the sequence of study for their chosen major. The program is structured so that most general education requirements are completed in the freshman year, and the essential courses of the business core are completed in the sophomore year. Major courses and elective/minor courses are completed in the junior year and senior year of study. Students are expected to complete all the general education and business core requirements (except for MGT 406) before they progress into their senior year.

Proposed Sequence of Study
Bachelor of Science in Business Administration (BSBA)
Common Two Years

FIRST YEAR (30 credit hours)			
Term	**Course #**	**Course Title**	**Credit**
Fall	WRI 101	Academic Writing	3
	BIS 101	Business Information Systems	3
	MTH 101	Mathematics for Business I	3
	HSS XXX	Humanities/Social Sciences	3
	SCI XXX	Science	3
		Total	**15**
Spring	WRI 102	Writing and Reading Across the Curriculum	3
	MTH 102	Mathematics for Business II	3
	ARA XXX	Arabic Heritage	3
	HSS XXX	Humanities/Social Sciences	3
	SCI XXX	Science	3
		Total	**15**

SECOND YEAR (30 credit hours)			
Term	**Course #**	**Course Title**	**Credit**
Fall	ENG 204	Advanced Academic Writing	3
	ACC 201	Fundamentals of Financial Accounting	3
	ECO 201	Principles of Microeconomics	3
	QBA 201	Quantitative Business Analysis	3
	MGT 201	Fundamentals of Management	3
		Total	**15**
Spring	ECO 202	Principles of Macroeconomics	3
	ACC 202	Fundamentals of Managerial Accounting	3
	FIN 201	Fundamentals of Financial Management	3
	MKT 201	Fundamentals of Marketing	3
	MIS 201	Fundamentals of Management Information Systems	3
		Total	**15**

Choice of Major

Prior to starting their major courses, BSBA students must declare their choice of major. A Change of Major Form must be approved by the associate dean and filed with the Office of the Registrar at least four weeks before the end of the semester in which the student will complete 60 credits. The Change of Major Form will be approved if the student meets all of the following requirements:

- a cumulative GPA of 2.00 or above
- completed at least 60 credits at the end of the semester in which the major is declared
- from the 60 credits, 39 credits must be from the designated general education courses and 21 credits must be from the business core
- credits may not include preparatory 00X courses or Intensive English Program courses

Students are strongly advised to register for 300- and 400-level courses in their major and minor fields after having completed the above requirements.

Major in Accounting

This major prepares its graduates for positions in industry, public accounting, government and not-for-profit organizations, as well as for graduate study. The program provides students with a foundation in the primary areas of the accounting discipline including cost accounting, financial accounting, accounting information systems, assurance services, federal income taxes and related business areas. Students are also provided with an opportunity to develop their communication skills, integrate and advance their technological skills, and to use critical thinking to analyze ambiguous situations and provide relevant business alternatives. In addition, the accounting major helps prepare students to obtain professional certifications such as Certified Public Accountant (CPA), Certified Management Accountant (CMA) and Certified Internal Auditor (CIA).

Students must successfully complete ACC courses taken as major requirements and major electives with a minimum combined GPA of 2.00.

Major Requirements (18 credits)
- ACC 301 Intermediate Financial Accounting I
- ACC 302 Intermediate Financial Accounting II
- ACC 303 Cost Accounting
- ACC 305 Income Tax I
- ACC 360 Accounting Information Systems
- ACC 410 Auditing

Major Electives (minimum of 6 credits)

Students majoring in accounting must complete a minimum of six credits in 300-level or above ACC courses not listed as major requirements.

Proposed Sequence of Study (third year and above)
Bachelor of Science in Business Administration (BSBA)
Accounting Major

THIRD YEAR (33 credit hours)			
Term	Course #	Course Title	Credit
Fall	ENG 208	Public Speaking	3
	BLW 301	Business Law	3
	QBA 202	Operations Management	3
	ACC 301	Intermediate Financial Accounting I	3
	FRE XXX	Free Elective/Minor	3
		Total	15
Spring	ENG 225	Writing for Business	3
	MGT 360	Business Ethics and Social Responsibility	3
	ACC 302	Intermediate Financial Accounting II	3
	ACC 303	Cost Accounting	3
	HSS XXX	Humanities/Social Sciences	3
	FRE XXX	Free Elective/Minor	3
		Total	18
Summer	BUS 397	Business Internship	0

FOURTH YEAR (30 credit hours)			
Term	Course #	Course Title	Credit
Fall	ACC 305	Income Tax I	3
	ACC 410	Auditing	3
	MJE XXX	Major Elective	3
	FRE XXX	Free Elective/Minor	3
	FRE XXX	Free Elective/Minor	3
		Total	15
Spring	MGT 406	Business Policy and Strategy	3
	ACC 360	Accounting Information Systems	3
	MJE XXX	Major Elective	3
	FRE XXX	Free Elective/Minor	3
	FRE XXX	Free Elective/Minor	3
		Total	15

Notes on course selection and progress
- Students are expected to complete all the general education and business core requirements (except for MGT 406) before they progress into their senior year.
- Students who do not follow the recommended sequence of study should expect that their program will require more than four years to complete.

Major in Economics

This major provides students with the theoretical foundation to apply economics to decision making and public policy in businesses and other organizations. From the common core of the intermediate theory courses in micro- and macroeconomics, students can branch out into several application areas in economics (such as international economics, industrial organization, money and banking) or pursue more advanced courses (such as managerial economics, econometrics or the senior economics seminar).

Students must successfully complete ECO courses taken as major requirements and major electives with a minimum combined GPA of 2.00.

Major Requirements (15 credits)
- ECO 301 Intermediate Microeconomics
- ECO 302 Intermediate Macroeconomics
- ECO 327 Industrial Organization
- ECO 351 Introduction to Econometrics
- ECO 401 Managerial Economics

Major Electives (minimum of 9 credits)

Students must complete any three 300-level or above ECO courses not listed as major requirements, for a minimum of nine credits.

Proposed Sequence of Study (third year and above)
Bachelor of Science in Business Administration (BSBA)
Economics Major

THIRD YEAR (33 credit hours)			
Term	**Course #**	**Course Title**	**Credit**
Fall	ENG 208	Public Speaking	3
	BLW 301	Business Law	3
	QBA 202	Operations Management	3
	ECO 301	Intermediate Microeconomics	3
	FRE XXX	Free Elective/Minor	3
		Total	15
Spring	ENG 225	Writing for Business	3
	MGT 360	Business Ethics and Social Responsibility	3
	ECO 302	Intermediate Macroeconomics	3
	ECO 351	Introduction to Econometrics	3
	HSS XXX	Humanities/Social Sciences	3
	FRE XXX	Free Elective/Minor	3
		Total	18
Summer	BUS 397	Business Internship	0

FOURTH YEAR (30 credit hours)			
Term	**Course #**	**Course Title**	**Credit**
Fall	ECO 327	Industrial Organization	3
	ECO 401	Managerial Economics	3
	MJE XXX	Major Elective	3
	FRE XXX	Free Elective/Minor	3
	FRE XXX	Free Elective/Minor	3
		Total	15
Spring	MGT 406	Business Policy and Strategy	3
	MJE XXX	Major Elective	3
	MJE XXX	Major Elective	3
	FRE XXX	Free Elective/Minor	3
	FRE XXX	Free Elective/Minor	3
		Total	15

Notes on course selection and progress
- Students are expected to complete all the general education and business core requirements (except for MGT 406) before they progress into their senior year.
- Students who do not follow the recommended sequence of study should expect that their program will require more than four years to complete.

Major in Finance

This major offers students an integrative approach to the fields of banking and finance. Students will develop the analytical skills and theoretical framework necessary to analyze and understand the financial and banking sectors. Furthermore, this major provides the essential tools for understanding investments, capital markets, financial management and financial institutions. Students majoring in finance can structure their program to obtain the knowledge

needed to take the first level of the CFA exam upon graduation. The Department of Accounting and Finance is an educational partner with the Chartered Financial Analysts (CFA) organization in the US.

Students must successfully complete FIN courses taken as major requirements and major electives with a minimum combined GPA of 2.00.

Major Requirements (15 credits)

- FIN 310 Analysis of Financial Statements
- FIN 320 Banking

- FIN 330 Investments
- FIN 401 International Finance
- FIN 450 Case Studies in Corporate Finance

Major Electives (minimum of 9 credits)

Students majoring in finance must complete a minimum of nine credits in 300-level or above FIN courses not listed as major requirements.

Students who wish to pursue a CFA designation after graduation should take FIN 402 as a major elective.

Proposed Sequence of Study (third year and above)
Bachelor of Science in Business Administration (BSBA)
Finance Major

THIRD YEAR (33 credit hours)			
Term	**Course #**	**Course Title**	**Credit**
Fall	ENG 208	Public Speaking	3
	BLW 301	Business Law	3
	QBA 202	Operations Management	3
	FIN 330	Investments	3
	FIN 310	Analysis of Financial Statements	3
		Total	15
Spring	ENG 225	Writing for Business	3
	MGT 360	Business Ethics and Social Responsibility	3
	FIN 320	Banking	3
	FIN 402	Futures and Options (recommended)	3
	HSS XXX	Humanities/Social Sciences	3
	FRE XXX	Free Elective/Minor	3
		Total	18
Summer	BUS 397	Business Internship	0

FOURTH YEAR (30 credit hours)			
Term	**Course #**	**Course Title**	**Credit**
Fall	FIN 401	International Finance	3
	MJE XXX	Major Elective	3
	MJE XXX	Major Elective	3
	FRE XXX	Free Elective/Minor	3
	FRE XXX	Free Elective/Minor	3
		Total	15
Spring	MGT 406	Business Policy and Strategy	3
	FIN 450	Case Studies in Corporate Finance	3
	FRE XXX	Free Elective/Minor	3
	FRE XXX	Free Elective/Minor	3
	FRE XXX	Free Elective/Minor	3
		Total	15

Notes on course selection and progress
- Students are expected to complete all the general education and business core requirements (except for MGT 406) before they progress into their senior year.
- Students who do not follow the recommended sequence of study should expect that their program will require more than four years to complete.

Major in Management

This major is designed to prepare students for positions of leadership and responsibility in modern organizations. Management is approached as a professional career that embodies knowledge and concern for the ethical, human and global aspects of organizations, emphasizing a thorough grounding in a common body of knowledge as the basis for making sound decisions and meeting future challenges. The curriculum explicitly focuses on developing communication, leadership and problem-solving skills.

In addition, management majors are required to complete an internship to develop insight and experience in the real world of business. Equipped with the intellectual tools and practical experience necessary to diagnose and resolve organizational challenges, and with effective communication skills, management students will be ready to excel in a wide variety of business settings.

Students must successfully complete MGT courses (and BLW 302) taken as major requirements and major electives with a minimum combined GPA of 2.00.

Major Requirements (15 credits)
- MGT 301 Organizational Behavior
- MGT 302 Managing Human Resources
- MGT 303 Management and Leadership Development
- MGT 305 International Business
- MGT 306 Cross-Cultural Management

Major Electives (minimum of 9 credits)

Students majoring in management must complete a minimum of nine credits in 300-level or above MGT courses not listed as major requirements. Students may also take BLW 302 to meet this requirement.

Proposed Sequence of Study (third year and above)
Bachelor of Science in Business Administration (BSBA)
Management Major

THIRD YEAR (33 credit hours)			
Term	Course #	Course Title	Credit
Fall	ENG 208	Public Speaking	3
	BLW 301	Business Law	3
	QBA 202	Operations Management	3
	MGT 301	Organizational Behavior	3
	FRE XXX	Free Elective/Minor	3
		Total	**15**
Spring	ENG 225	Writing for Business	3
	MGT 360	Business Ethics and Social Responsibility	3
	MGT 303	Management and Leadership Development	3
	MJE XXX	Major Elective	3
	HSS XXX	Humanities/Social Sciences	3
	FRE XXX	Free Elective/Minor	3
		Total	**18**
Summer	BUS 397	Business Internship	0

FOURTH YEAR (30 credit hours)			
Term	Course #	Course Title	Credit
Fall	MGT 305	International Business	3
	MGT 302	Managing Human Resources	3
	MJE XXX	Major Elective	3
	FRE XXX	Free Elective/Minor	3
	FRE XXX	Free Elective/Minor	3
		Total	**15**
Spring	MGT 406	Business Policy and Strategy	3
	MGT 306	Cross-Cultural Management	3
	MJE XXX	Major Elective	3
	FRE XXX	Free Elective/Minor	3
	FRE XXX	Free Elective/Minor	3
		Total	**15**

Notes on course selection and progress
- Students are expected to complete all the general education and business core requirements (except for MGT 406) before they progress into their senior year.
- Students who do not follow the recommended sequence of study should expect that their program will require more than four years to complete.

Major in Management Information Systems

Managers and non-managers alike depend upon information for enhancing their business processes and decision making. To be useful, information must be understandable, timely, accurate, thorough, focused, secure and distributed to the appropriate individuals. Accomplishing all these tasks is the challenge of managers of information systems. In this major, students will acquire professional skills in the areas of hardware and software, databases, business operations, decision-making management, systems development and operation, networks, communications and other skills needed by professionals working in the expanding field of information technology management.

Students must successfully complete MIS courses (and MGT 380) taken as major requirements and major electives with a minimum combined GPA of 2.00.

Major Requirements (18 credits)
- MIS 202 Principles of Business Programming
- MIS 301 Fundamentals of Database Management
- MIS 303 Introduction to Systems Analysis
- MGT 380 Project Management
- MIS 404 Internet Business Applications
- MIS 405 Information Systems Strategy

Major Electives (minimum of 6 credits)
Students majoring in management information systems must complete a minimum of six credits in 300-level or above MIS courses not listed as major requirements. Students may also take MIS 203 to meet the major electives requirement.

Proposed Sequence of Study (third year and above)
Bachelor of Science in Business Administration (BSBA)
Management Information Systems Major

THIRD YEAR (33 credit hours)			
Term	Course #	Course Title	Credit
Fall	ENG 208	Public Speaking	3
	BLW 301	Business Law	3
	QBA 202	Operations Management	3
	MIS 202	Principles of Business Programming	3
	FRE XXX	Free Elective/Minor	3
		Total	15
Spring	ENG 225	Writing for Business	3
	MGT 360	Business Ethics and Social Responsibility	3
	MIS 301	Fundamentals of Database Management	3
	MJE XXX	Major Elective	3
	HSS XXX	Humanities/Social Sciences	3
	FRE XXX	Free Elective/Minor	3
		Total	18
Summer	BUS 397	Business Internship	0

FOURTH YEAR (30 credit hours)			
Term	Course #	Course Title	Credit
Fall	MIS 303	Introduction to Systems Analysis	3
	MGT 380	Project Management	3
	MJE XXX	Major Elective	3
	FRE XXX	Free Elective/Minor	3
	FRE XXX	Free Elective/Minor	3
		Total	15
Spring	MGT 406	Business Policy and Strategy	3
	MIS 405	Information Systems Strategy	3
	MIS 404	Internet Business Applications	3
	FRE XXX	Free Elective/Minor	3
	FRE XXX	Free Elective/Minor	3
		Total	15

Notes on course selection and progress
- Students are expected to complete all the general education and business core requirements (except for MGT 406) before they progress into their senior year.
- Students who do not follow the recommended sequence of study should expect that their program will require more than four years to complete.

Major in Marketing

Students in this major study the role of marketing in modern organizations. The role of the marketer as the key connection between the product or service provider and the consumer requires a thorough understanding of marketing research and statistical techniques to make informed decisions about the design and development of marketing strategies. These strategies will encompass product and branding concepts, promotion and communication with customers,

pricing and distribution. Additionally, the field of study will stress practical applications of marketing concepts in areas such as consumer behavior, sales management and retailing. Students are allowed to custom design their major by choosing from an array of marketing electives.

Students must successfully complete MKT courses taken as major requirements and major electives with a minimum combined GPA of 2.00.

Major Requirements (15 credits)
• MKT 301 Consumer Behavior

• MKT 302 Marketing Research
• MKT 307 Business Marketing
• MKT 309 International Marketing
• MKT 401 Marketing Strategy

**Major Electives
(minimum of 9 credits)**
Students majoring in marketing must complete a minimum of nine credits in 300-level or above MKT courses not listed as major requirements.

**Proposed Sequence of Study (third year and above)
Bachelor of Science in Business Administration (BSBA)
Marketing Major**

THIRD YEAR (33 credit hours)			
Term	**Course #**	**Course Title**	**Credit**
Fall	ENG 208	Public Speaking	3
	BLW 301	Business Law	3
	QBA 202	Operations Management	3
	MKT 301	Consumer Behavior	3
	FRE XXX	Free Elective/Minor	3
		Total	15
Spring	ENG 225	Writing for Business	3
	MGT 360	Business Ethics and Social Responsibility	3
	MKT 302	Marketing Research	3
	MJE XXX	Major Elective	3
	HSS XXX	Humanities/Social Sciences	3
	FRE XXX	Free Elective/Minor	3
		Total	18
Summer	BUS 397	Business Internship	0

FOURTH YEAR (30 credit hours)			
Term	**Course #**	**Course Title**	**Credit**
Fall	MKT 307	Business Marketing	3
	MKT 309	International Marketing	3
	MJE XXX	Major Elective	3
	FRE XXX	Free Elective/Minor	3
	FRE XXX	Free Elective/Minor	3
		Total	15
Spring	MGT 406	Business Policy and Strategy	3
	MKT 401	Marketing Strategy	3
	MJE XXX	Major Elective	3
	FRE XXX	Free Elective/Minor	3
	FRE XXX	Free Elective/Minor	3
		Total	15

Notes on course selection and progress
• Students are expected to complete all the general education and business core requirements (except for MGT 406) before they progress into their senior year.

• Students who do not follow the recommended sequence of study should expect that their program will require more than four years to complete.

Department of Accounting and Finance

Dennis Olson, Head

Faculty

Abed Al-Nasser Abdallah
Omneya Abdelsalam
Asaad Abi Ali
Yass Alkafaji
Osamah Al-Khazali
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Mohsen Saad
Mohamed Feras Salama
Sabah Sedki
Laura Tuttle
Jeannette Vinke
Ronald Williams
Zaher Zantout
Taisier Zoubi

The Department of Accounting and Finance aims to educate and prepare students for successful careers in the fields of accounting and finance. Students learn to compile, present, analyze, interpret and apply accounting and financial data in the decision-making process.

Students pursuing the accounting major learn specific competencies to work in accounting and management in either the private or public sector. AUS accounting graduates have the background needed for further study toward the Certified Public Accountant (CPA), Certified Management Accountant (CMA) and Certified Internal Auditor (CIA) professional designations.

Studying finance at AUS provides students with the intellectual tools to succeed in careers in financial management, banking, investments, real estate and other sectors of the global financial world. The Department of Accounting and Finance

has partnered with the CFA Institute and has incorporated the Chartered Financial Analyst (CFA) Level I curriculum in its course offerings.

BSBA–Majors in Accounting and Finance

Faculty members from the Department of Accounting and Finance provide instruction in the Bachelor of Science in Business Administration (BSBA) program. For more information on the accounting and finance majors within the BSBA program, please see the previous section on the BSBA.

Minor in Accounting

This minor provides graduates with a basic background in financial and managerial accounting. It is a complementary field of study for students majoring in finance or MIS. It is also an attractive choice for other students who wish to obtain the accounting background needed in the business world, or to begin graduate study toward a professional designation such as a CPA or CMA.

Students applying to this minor should have completed a minimum of 60 credits and be in good academic standing.

The following rules apply:

- The minor consists of a minimum of 18 credits, including at least nine credits in courses at or above the 300 level in accounting.
- At least nine credits of the 18 credits required for the minor must be taken in residence at AUS.
- At least six credits of the nine credits at or above the 300 level must be taken in residence at AUS.
- A grade of at least C- in each course and a GPA of at least 2.00 must be earned in courses taken to satisfy the minor.

Prerequisite Courses
Students must complete the following courses or their equivalent. All course prerequisites must be satisfied. Courses in the minor may require additional prerequisites.
- ECO 201 Principles of Microeconomics
- ECO 202 Principles of Macroeconomics

- One of the following combinations: MTH 101 and MTH 102, or MTH 100 or MTH 111 and MTH 101, or MTH 103 and MTH 104
- QBA 201 Quantitative Business Analysis or

  STA 201 Introduction to Statistics for Engineering and Natural Sciences or

  STA 202 Introduction to Statistics for Social Sciences or

  NGN 111 Introduction to Statistical Analysis

Minor Requirements (9 credits)
- ACC 301 Intermediate Financial Accounting I
- ACC 302 Intermediate Financial Accounting II
- ACC 303 Cost Accounting

Minor Electives (minimum of 9 credits)
Students must complete a minimum of nine credits in 300-level or above ACC courses not listed as requirements for the minor.

Minor in Finance

This minor provides a basic background in the fields of banking and finance. It is a complementary field of study for students majoring in accounting, economics or marketing. It is also an attractive choice for other students who wish to obtain the finance background needed in the business world, or to begin graduate study toward a professional designation such as the CFA.

Students applying to this minor should have completed a minimum of 60 credits and be in good academic standing.

The following rules apply:

- The minor consists of a minimum of 18 credits, including at least nine credits in courses at or above the 300 level in finance.
- At least nine credits of the 18 credits required for the minor must be taken in residence at AUS.
- At least six credits of the nine credits at or above the 300 level must be taken in residence at AUS.
- A grade of at least C- in each course and a GPA of at least 2.00 must be earned in courses taken to satisfy the minor.

Prerequisite Courses

Students must complete the following courses or their equivalent. All course prerequisites must be satisfied. Courses in the minor may require additional prerequisites.

- ECO 201 Principles of Microeconomics
- ECO 202 Principles of Macroeconomics
- One of the following combinations: MTH 101 and MTH 102, or MTH 100 or MTH 111 and MTH 101, or MTH 103 and MTH 104
- QBA 201 Quantitative Business Analysis or
  STA 201 Introduction to Statistics for Engineering and Natural Sciences or
  STA 202 Introduction to Statistics for Social Sciences or
  NGN 111 Introduction to Statistical Analysis

Minor Requirements (9 credits)

- FIN 320 Banking
- FIN 330 Investments
- FIN 450 Case Studies in Corporate Finance

Minor Electives (minimum of 9 credits)

Students must complete a minimum of nine credits in 300-level or above FIN courses not listed as requirements for the minor.

Department of Economics

Hugo Toledo, Head

Faculty

Bassam Abu Al-Foul
Benjamin Artz
Mohammad Arzaghi
Hamid Baghestani (sabbatical Fall 2009)
Andy Barnett
Daron Djeredjian
Ismail Genc
Marina Irimia-Vladu
Ilker Kaya
Samer Kherfi
Jong Kim
Michael Malcolm
Cassia Marchon
Peter Mitias
George Naufal
Jay Squalli
Joseph Wallis
Jayed Younad

The Bachelor of Arts (BA) in Economics is designed to give students an in-depth understanding of how individuals acting as consumers, as business managers, as participating citizens within a society and as government agents make decisions. Students who graduate with a BA degree in economics will have the knowledge and analytical skills required to understand and solve complex business and social problems.

Like the BA in economics, the BSBA in economics is designed to provide students with an understanding of how people make choices in all aspects of human activity. The BSBA, however, provides greater focus on the choices people make in a business context. Students with the BSBA major in economics will acquire the analytical tools required to become successful managers of firms or not-for-profit organizations.

Bachelor of Arts in Economics (BAE)

Economics encompasses a diverse range of fields including international trade, finance, development and growth, urban and regional economics, industrial organization, labor economics, banking and monetary economics, natural resources and environmental economics. All, however, are approached with the same set of analytical tools that characterize the economic way of thinking.

Indeed, the economics discipline is distinguished by a small set of powerful ideas that can be applied to a variety of problems from a wide range of topics. These fundamental ideas are incentives, equilibrium and efficiency. From an observation, economists model a real-world situation and test the model empirically to arrive at the model's implications, and use those implications and make recommendations for policy and institutional reform. While economists do not attempt to establish society's goals, they do examine the consequences of different ways of pursuing them. Economic principles, when applied, can lead to outcomes that benefit all of society.

An economics degree provides students with skills that are valuable for a number of careers in which critical thinking and careful decision making are required. The economics program provides a firm foundation for a career in public policy analysis, banking, finance, market analysis and business management.

The purpose of the Bachelor of Arts in Economics degree program is to provide students with strong undergraduate training in the theory and application of economics built upon the foundation of education in the liberal arts and science. The program aims to prepare students for rewarding employment in business and government, nationally or internationally, and, if they choose, for graduate study in business, law, economics and other advanced professional degrees at internationally recognized universities.

These functions of the economics program unite in a single mission: the delivery of an American-standard undergraduate economics program offering qualifications that are readily recognized and understood internationally by employers and graduate programs.

The commitment to an American standard is achieved by benchmarking the content of economics courses to peer institutions and remaining current as the discipline evolves. Success requires faculty members who have sound training in the major specializations in economics and who actively pursue research.

Program Objectives

Economics students learn to think creatively about the economic concerns facing the world today. Students learn to apply a variety of theoretical perspectives to issues of economic efficiency, economic growth, globalization, wealth and poverty, individual freedom, discrimination, cultural values and environmental concerns. The strategic objectives of the economics program are to:

- maintain a high-quality curriculum that remains current as the discipline evolves

- recruit, retain and develop a highly qualified faculty that ranks student learning among its highest priorities
- promote value-added research and intellectual contributions
- foster motivation and opportunities for lifelong learning
- develop in students a competence in critical thinking, communications, teamwork, information technology and adaptation to change
- create an exciting student environment that reflects a diverse society

Program Outcomes

The Bachelor of Arts in Economics program is designed to improve the ability of students to think critically, to organize and synthesize information, and to write and speak convincingly regarding economic issues. Students earning the Bachelor of Arts in Economics will have a diverse set of skills and competencies. Economics majors will:

- be able to identify the role of supply and demand in a market economy, the role of prices and the necessary conditions for market economies to function efficiently
- have a working understanding of the economic role of government, fiscal and monetary policy, and market structures
- be able to identify policy options and assess the likelihood they would improve economic growth and efficiency
- be able to demonstrate their ability to apply economic theory to a range of economic problems and effectively communicate their analysis
- be able to identify the net benefits of international trade and globalization
- have a basic understanding of research methodology, including literature surveys, data gathering and data analysis
- be able to assess the significance of national and international events on the economy

Distinctive Features of the Program

Students pursuing the Bachelor of Arts in Economics at AUS learn about contemporary economics and its place within the wider social sphere. Students' understanding of economic

principles helps them to analyze economic trends and government responses to them. Students have the opportunity to develop good analytical and problem-solving skills. By exploring economic theories that help explain human behavior, AUS students learn to develop their own arguments and to assess their own values regarding the issues discussed in class.

Admission

Admission to the program follows the university's undergraduate admission requirements. AUS students transferring into the program must have a minimum cumulative GPA of 2.00 or higher and permission of the associate dean.

Degree Requirements

To qualify for graduation with a Bachelor of Arts in Economics degree, students must complete a minimum of 120 credits with a cumulative GPA of 2.00 or better, including:

- a minimum of 45 credits of general education requirements
- 27 credits of major requirements with a 2.00 minimum GPA
- a minimum of 36 credits of major electives
- a minimum of 12 credits of free electives

General Education Requirements (minimum of 45 credits)

- BIS 101 Business Information Systems
- MTH 101 Mathematics for Business I
- STA 202 Introduction to Statistics for Social Sciences or
  QBA 201 Quantitative Business Analysis

For information on the remaining general education requirements, see the Academic Policies and Regulations section of this catalog.

Major Requirements (27 credits)

Students must complete the following required courses with a 2.00 minimum GPA:

- ECO 201 Principles of Microeconomics
- ECO 202 Principles of Macroeconomics

- ECO 301 Intermediate Microeconomics
- ECO 302 Intermediate Macroeconomics
- ECO 305 International Trade
- ECO 310 Development Economics
- ECO 330 Money and Banking
- ECO 351 Introduction to Econometrics
- ECO 495 Senior Seminar in Economics

Major Electives (minimum of 36 credits)

Focus Courses (minimum of 18 credits)

Students must complete a minimum of 18 credits from ECO courses at the 300 level or above not listed under the major requirements.

Related Courses (minimum of 18 credits)

Courses may be selected from the fields listed below, subject to approval by the advisor. A student may satisfy part or all of the related courses requirement by completing a minor in one of the related fields listed below. A student pursuing the Bachelor of Arts in Economics may not minor in economics.

- accounting
- computer science
- economics (any course at the 300 level or above)
- finance
- history (any course at the 200 level or above)
- international studies
- management
- management information systems
- marketing
- mathematics (any course other than MTH 100 or MTH 111)
- political science
- psychology
- statistics (any course other than STA 201 or STA 202)
- quantitative business analysis (any course other than QBA 201)

Free Electives (minimum of 12 credits)

Students must complete a minimum of 12 credits of free electives, excluding MTH 100.

Proposed Sequence of Study
Bachelor of Arts in Economics (BAE)

FIRST YEAR (30 credit hours)			
Term	Course #	Course Title	Credit
Fall	BIS 101	Business Information Systems	3
	ECO 201	Principles of Microeconomics	3
	WRI 101	Academic Writing	3
	MTH 101	Mathematics for Business I	3
	SCI XXX	Science	3
		Total	15
Spring	WRI 102	Writing and Reading Across the Curriculum	3
	ECO 202	Principles of Macroeconomics	3
	STA 202 or QBA 201	Introduction to Statistics for Social Sciences or Quantitative Business Analysis	3
	MJE XXX	Related Field Elective	3
	SCI XXX	Science	3
		Total	15

SECOND YEAR (30 credit hours)			
Term	Course #	Course Title	Credit
Fall	ECO 302	Intermediate Macroeconomics	3
	ECO 310	Development Economics	3
	ARA XXX	Arabic Heritage	3
	ENG XXX	English Language Competency	3
	HSS XXX	Humanities/Social Sciences	3
		Total	15
Spring	ECO 301	Intermediate Microeconomics	3
	ECO 330	Money and Banking	3
	MJE XXX	Related Field Elective	3
	ENG XXX	English Language Competency	3
	HSS XXX	Humanities/Social Sciences	3
		Total	15

THIRD YEAR (30 credit hours)			
Term	Course #	Course Title	Credit
Fall	ECO 305	International Trade	3
	MJE XXX	Focus Course	3
	MJE XXX	Related Field Elective	3
	HSS XXX	Humanities/Social Sciences	3
	HSS XXX	Humanities/Social Sciences	3
		Total	15
Spring	ECO 351	Introduction to Econometrics	3
	MJE XXX	Related Field Elective	3
	MJE XXX	Focus Course	3
	HSS XXX	Humanities/Social Sciences	3
	FRE XXX	Free Elective	3
		Total	15

FOURTH YEAR (30 credit hours)			
Term	Course #	Course Title	Credit
Fall	ECO 495	Senior Seminar in Economics	3
	MJE XXX	Focus Course	3
	MJE XXX	Related Field Elective	3
	MJE XXX	Related Field Elective	3
	FRE XXX	Free Elective	3
		Total	15
Spring	MJE XXX	Focus Course	3
	MJE XXX	Focus Course	3
	MJE XXX	Related Field Elective	3
	FRE XXX	Free Elective	3
	FRE XXX	Free Elective	3
		Total	15

Note: Students who do not follow the recommended sequence of study should expect that their program will require more than four years to complete.

BSBA–Major in Economics

Faculty members from the Department of Economics provide instruction in the Bachelor of Science in Business Administration (BSBA) program. For more information on the economics major within the BSBA program, please see the previous section on the BSBA.

Minor in Economics

This minor complements the program of students in other majors and is designed to help them develop a basic understanding of the principles and applications of economics. By pursuing this minor, students will develop an understanding of microeconomic and macroeconomic theory, the role of markets, and the effects of government regulation and policy on economic behavior.

Students applying to this minor should have completed a minimum of 60 credits and be in good academic standing.

The following rules apply:

- The minor consists of a minimum of 18 credits at or above the 300 level in economics.
- At least nine credits of the 18 credits required for the minor must be taken in residence at AUS.
- At least six credits of the nine credits at or above the 300 level must be taken in residence at AUS.

- A grade of at least C- in each course and a GPA of at least 2.00 must be earned in courses taken to satisfy the minor.

Prerequisite Courses

Students must complete the following courses or their equivalent. All course prerequisites must be satisfied. Courses in the minor may require additional prerequisites.

- ECO 201 Principles of Microeconomics
- ECO 202 Principles of Macroeconomics
- One of the following combinations: MTH 101 and MTH 102, or MTH 100 or MTH 111 and MTH 101, or MTH 103 and MTH 104
- QBA 201 Quantitative Business Analysis or

STA 201 Introduction to Statistics for Engineering and Natural Sciences or

STA 202 Introduction to Statistics for Social Sciences or

NGN 111 Introduction to Statistical Analysis

Minor Requirements (6 credits)
- ECO 301 Intermediate Microeconomics
- ECO 302 Intermediate Macroeconomics

Minor Electives (minimum of 12 credits)

Students may complete any four 300-level or above ECO courses not listed as a minor requirement, for a minimum of 12 credits. Students should consult with their advisors when choosing their minor electives.

Department of Management Information Systems

Charles Love, Head

Faculty

Norita Ahmad
Sameh Al-Natour (Spring 2010)
Linda Angell
Jeffrey Baker
Kim Heng Chen
Ananth Chiravuri
Abdelkader Daghfous
Narasimhaiah Gorla
Mehmet Gumus
Asif Hashim
Ali Khawaja
Munir Majdalawieh
Toufic Saifi
Xiaobo Xu

The Department of Management Information Systems helps students learn about information and communication technologies, business processes, logistics and scientific principles directed to the design, implementation and management of information systems. The aim of the department is to prepare successful graduates for professional business careers, emphasizing the innovative re-engineering of business processes for increased business success.

Successful MIS graduates will have a solid knowledge of computer technologies and be able to offer technology solutions in all areas of business. The technical and business knowledge gained in the program can help graduates find high-paying jobs and provides them the flexibility to select different career paths as business problem-solvers who can harness the power of technology as a competitive advantage. MIS is also an excellent choice for those interested in focusing on two majors or in graduate studies in accounting, marketing, finance and management, given the increased use of software systems to conduct work in these areas.

BSBA–Major in Management Information Systems

Faculty members from the Department of Management Information Systems provide instruction in the Bachelor of Science in Business Administration (BSBA) program. For more information on the management information systems major within the BSBA program, please see the previous section on the BSBA.

Minor in Management Information Systems

The minor in management information systems (MIS) prepares graduates for professional careers that rely on the application of information technology to business processes and managerial decision making. An understanding of the principles of data storage, analysis, communication and networking offers students from a variety of business, technical and social science disciplines the skills necessary to stay in step with rapid changes in the role of IT in the world economy.

Students applying to this minor should have completed a minimum of 60 credits and be in good academic standing.

The following rules apply:

- The minor consists of a minimum of 18 credits, including at least nine credits in courses at or above the 300 level in MIS.

- At least nine credits of the 18 credits required for the minor must be taken in residence at AUS.

- At least six credits of the nine credits at or above the 300 level must be taken in residence at AUS.

- A grade of at least C- in each course and a GPA of at least 2.00 must be earned in courses taken to satisfy the minor.

Prerequisite Courses

Students must complete the following courses or their equivalent. All course prerequisites must be satisfied. Courses in the minor may require additional prerequisites.

- BIS 101 Business Information Systems (not required for students from engineering and computer science)
- ECO 201 Principles of Microeconomics
- ECO 202 Principles of Macroeconomics
- One of the following combinations: MTH 101 and MTH 102, or MTH 100 or MTH 111 and MTH 101, or MTH 103 and MTH 104
- QBA 201 Quantitative Business Analysis or

  STA 201 Introduction to Statistics for Engineering and Natural Sciences or

  STA 202 Introduction to Statistics for Social Sciences or

  NGN 111 Introduction to Statistical Analysis

Minor Requirements (9 credits)
- MIS 202 Principles of Business Programming
- MIS 301 Fundamentals of Database Management
- MIS 303 Introduction to Systems Analysis

Minor Electives (minimum of 9 credits)

Students minoring in management information systems must complete a minimum of nine credits in 300-level or above MIS courses not listed as minor requirements.

Department of Management, Marketing and Public Administration

Joseph Wallis, Head

Faculty

Saladin Al-Jurf
John Allee
Linda Angell
Nicholas Ashill
Robert E. Bateman II
Omar Belkhodja
Virgina Bodolica
Jean Boisvert
Tor Brodtkorb
Gary Gold
Matti Haverila
J. Lade Heaton
Sajid Khan
Andrew Klein
Marian Mason
Peter Mason
J. Reagan McLaurin
Susan Morey
R. Earl Naumann
Syed Rizvi
Annibal Scavarda
Daniel Simonet
Martin Spraggon-Hernandez
Marie-France Waxin
A. Paul Williams
Fang Zhao

The Department of Management, Marketing and Public Administration aims to educate and prepare students for successful careers at the managerial level in the private, public and non-profit sector. Students learn the leadership and management skills and techniques that are essential to help corporations and organizations achieve their goals and objectives; the practical application of marketing concepts such as the processes for developing promotions, product pricing, distribution channels, and brand and sales management strategies; and the methods used by policy makers to shape and improve communities and people's lives. The department offers a Bachelor of Arts in Public Administration and BSBA majors in management and marketing. With its balanced emphasis on developing both "hard" and "soft" skills and an appreciation of the challenges posed by cultural diversity and a global marketplace, the courses offered by this department provide a solid foundation for either entry-level managerial positions or graduate study in MBA, MPA or business-subject PhD programs.

Bachelor of Arts in Public Administration (BAPA)

Effective public management creates an environment in which investment and business activity can produce a growing and dynamic economy. Efficient public service delivery also contributes to the quality of life enjoyed by private citizens. The mission of the Bachelor of Arts in Public Administration program is to give students training in public management and the administrative sciences, providing them with the skills necessary to serve in professional roles in government, nonprofits and other service organizations. Drawing on an interdisciplinary liberal arts education, students will be prepared to function as both informed citizens and potential public leaders.

Program Objectives and Outcomes

SBM encourages students in public administration to think creatively, applying theories, concepts and practicable skills to important policy and management concerns facing the region and the world. The BAPA program aims at meeting the objectives listed below. Graduates from the BAPA program are expected to demonstrate the acquisition of corresponding outcomes:

- *Professional competence based on conceptual ability and technical proficiency*

  Student will use knowledge of management processes, budgeting, human resource administration, organizational behavior and information technology to address public needs.

- *A sense of personal and organizational ethics based on the principle of stewardship in public service*

  Students will develop an understanding of the importance of integrity and trust in public service, applying concepts of legality, utility, justice, rights, legitimacy and equity to the management of public resources in an environment of competing interests.

- *An ability to think critically and independently in the analysis of policy and administration*

  Students will use qualitative and quantitative analysis to challenge existing paradigms and develop new approaches to public leadership in the context of development in the region.

- *An attitude of broad-based learning*

  Students will respect diversity and seek to learn from a variety of sources, including history, societies and cultures, advances in the arts and sciences, current events and interaction with an interdisciplinary faculty.

Distinctive Features of the Program

The Bachelor of Arts in Public Administration is unique to the region in its delivery of an undergraduate education in public administration. Its interdisciplinary approach draws on political science, economics and philosophy in addition to courses from business and management. The faculty is deeply committed to teaching students effective administration by sharpening their analytical skills, refining their ability to research topics, and improving their ability to convey findings in written and oral presentations. The program encourages team projects and interaction with public, private and non-governmental organizations.

Although not required, most students take advantage of the opportunity to complete an internship with a public organization. This program allows participants to apply the lessons learned in their course work and offers a chance to experience first-hand the challenges faced by working administrators as they attempt to serve a public with competing demands and priorities.

The mission is achieved with the help of dedicated, qualified faculty members actively pursuing applied research and providing consulting services to

governments, businesses, NGOs and international organizations, enabling professors to bring new initiatives and practices into the classroom.

Admission

Admission to the program follows the university's undergraduate admission requirements. Students transferring into the program must have a minimum cumulative GPA of 2.00 or higher and permission of the associate dean.

Degree Requirements

To qualify for graduation with a Bachelor of Arts in Public Administration, students must complete a minimum of 120 credits with a cumulative GPA of 2.00 or better, including:

- a minimum of 42 credits of general education requirements
- 42 credits of major requirements with a 2.00 minimum GPA
- a minimum of 27 credits of major electives
- a minimum of nine credits of free electives
- completion of an internship in a public organization

General Education Requirements (minimum of 42 credits)
- MTH 101 Mathematics for Business I or MTH 102 Mathematics for Business II
- STA 202 Introduction to Statistics for Social Sciences

For information on the remaining general education requirements, see the Academic Policies and Regulations section of this catalog.

Major Requirements (42 credits)
Students must complete the following required courses with a 2.00 minimum GPA:

- ACC 201 Fundamentals of Financial Accounting

- BIS 101 Business Information Systems
- ECO 201 Principles of Microeconomics
- ECO 202 Principles of Macroeconomics
- ECO 325 Public Economics
- ECO 345 Public Choice
- PBA 101 Introduction to Public Administration
- PBA 201 Public Management or MGT 201 Fundamentals of Management
- PBA 301 Organizational Behavior or MGT 301 Organizational Behavior
- PBA 304 Public Budgeting
- PBA 306 Human Resource Management in Public Organizations
- PBA 495 Seminar in Public Administration
- PHI 204 Ethics for Professionals
- POL 201 Introduction to Political Studies

Major Electives (minimum of 27 credits)

Focus Courses (minimum of 12 credits)

Students will work with an advisor to select a series of courses leading to in-depth knowledge in a specific area, such as public finance, human resource management or public economics, among others. This requirement is satisfied with 300-level courses in PBA and other courses in SBM at the 300 level or above with the approval of the advisor. Use of courses outside of SBM will require specific justification by the student and advisor approval. No required course for the PBA major may be used to meet this requirement.

Related Courses (minimum of 15 credits)

Students take courses in related fields to develop an appreciation for other disciplines and perspectives. Six of the credits used to meet this requirement must be at the 200 level or above. Courses may be selected from the related fields listed below, subject to approval by the advisor. A student may satisfy part or all of this requirement by completing a minor in one of the following fields related to public administration, but will require approval from the department head for courses outside of the related fields listed:

- engineering management
- environmental science
- geography
- history
- international studies
- mass communication
- mathematics
- political science
- psychology
- sociology
- statistics
- courses offered in the School of Business and Management at the 200 level or above

Internship
Students in the BAPA program must complete an internship in a public organization normally in the summer preceding their senior year. The internship will be graded as pass/fail. PBA 397 fulfills this requirement. For details on internship eligibility and registration, please refer to Internship Registration under Registration and Course Information in the Academic Policies and Regulations section of this catalog.

Free Electives (minimum of 9 credits)
Students must complete a minimum of nine credits at the 100 level or above, excluding MTH 100.

Proposed Sequence of Study
Bachelor of Arts in Public Administration (BAPA)

FIRST YEAR (30 credit hours)			
Term	**Course #**	**Course Title**	**Credit**
Fall	MTH 101	Mathematics for Business I	3
	WRI 101	Academic Writing	3
	PBA 101	Introduction to Public Administration	3
	BIS 101	Business Information Systems	3
	ECO 201	Principles of Microeconomics	3
		Total	**15**
Spring	WRI 102	Writing and Reading Across the Curriculum	3
	ECO 202	Principles of Macroeconomics	3
	STA 202	Introduction to Statistics for Social Sciences	3
	ARA XXX	Arabic Heritage	3
	SCI XXX	Science	3
		Total	**15**

SECOND YEAR (30 credit hours)			
Term	**Course #**	**Course Title**	**Credit**
Fall	ACC 201	Fundamentals of Financial Accounting	3
	PHI 204	Ethics for Professionals	3
	PBA 306	Human Resources Mgt. in Public Org.	3
	ENG XXX	English Language Competency	3
	HSS XXX	Humanities/Social Sciences	3
		Total	**15**
Spring	POL 201	Introduction to Political Studies	3
	PBA 201 or MGT 201	Public Management or Fundamentals of Management	3
	PBA 304	Public Budgeting	3
	ENG XXX	English Language Competency	3
	HSS XXX	Humanities/Social Sciences	3
		Total	**15**

THIRD YEAR (30 credit hours)			
Term	**Course #**	**Course Title**	**Credit**
Fall	ECO 325	Public Economics	3
	PBA 301 or MGT 301	Organizational Behavior	3
	MJE XXX	Focus Course	3
	HSS XXX	Humanities/Social Sciences	3
	SCI XXX	Science	3
		Total	**15**
Spring	ECO 345	Public Choice	3
	MJE XXX	Focus Course	3
	MJE XXX	Related Field Elective	3
	HSS XXX	Humanities/Social Sciences	3
	FRE XXX	Free Elective	3
		Total	**15**
Summer	PBA 397	Internship in a Public Organization	0

FOURTH YEAR (30 credit hours)			
Term	**Course #**	**Course Title**	**Credit**
Fall	MJE XXX	Focus Course	3
	MJE XXX	Related Field Elective	3
	MJE XXX	Related Field Elective	3
	HSS XXX	Humanities/Social Sciences	3
	FRE XXX	Free Elective	3
		Total	**15**
Spring	PBA 495	Seminar in Public Administration	3
	MJE XXX	Focus Course	3
	MJE XXX	Related Field Elective	3
	MJE XXX	Related Field Elective	3
	FRE XXX	Free Elective	3
		Total	**15**

Note*:* Students who do not follow the recommended sequence of study should expect that their program will require more than four years to complete.

BSBA–Majors in Management and Marketing

Faculty members from the Department of Management, Marketing and Public Administration provide instruction in the Bachelor of Science in Business Administration (BSBA) program. For more information on the management and marketing majors within the BSBA program, please see the previous section on the BSBA.

Minor in International Business

This minor is designed to provide interested students with the tools, theory and practical knowledge required to function in an international business environment and to prepare students for an entry-level position at a multinational corporation. Emphasis is on essential international business knowledge, supplemented by courses from other disciplines such as economics and international relations.

Students applying to this minor should have completed a minimum of 60 credits and be in good academic standing.

The following rules apply:

- The minor consists of a minimum of 18 credits, including at least nine credits in courses at or above the 300 level in the international business discipline.
- At least nine credits of the 18 credits required for the minor must be taken in residence at AUS.
- At least six credits of the nine credits at or above the 300 level must be taken in residence at AUS.
- A grade of at least C- in each course and a GPA of at least 2.00 must be earned in courses taken to satisfy the minor.

Prerequisite Courses

Students must complete the following courses or their equivalent. All course prerequisites must be satisfied. Courses in the minor may require additional prerequisites.

- ECO 201 Principles of Microeconomics
- ECO 202 Principles of Macroeconomics

- One of the following combinations: MTH 101 and MTH 102, or MTH 100 or MTH 111 and MTH 101, or MTH 103 and MTH 104
- QBA 201 Quantitative Business Analysis or

  STA 201 Introduction to Statistics for Engineering and Natural Sciences or

  STA 202 Introduction to Statistics for Social Sciences or

  NGN 111 Introduction to Statistical Analysis

Minor Requirements (9 credits)

- ECO 305 International Trade
- MGT 305 International Business
- MGT 306 Cross-Cultural Management

Minor Electives (minimum of 9 credits)

One of the following courses:

- ACC 420 International Accounting Standards
- ECO 321 Comparative Economic Systems
- FIN 401 International Finance
- MKT 309 International Marketing
- QBA 311 Logistics Management

Plus any two of the following not already taken:

- ACC 420 International Accounting Standards
- ECO 310 Development Economics
- ECO 315 Economics of the Middle East
- ECO 321 Comparative Economic Systems
- ECO 394 Special Topics in Economics (by approval)
- FIN 401 International Finance
- MGT 394 Special Topics in Management (by approval)
- MIS 404 Internet Business Applications
- MKT 309 International Marketing
- QBA 311 Logistics Management

Minor in Management

This minor is designed for students outside the major in management or outside the School of Business and Management who desire to increase

their networking skills, expand their business knowledge, increase their career opportunities, improve their readiness for corporate life and support their candidacy for an MBA or other graduate programs.

Students applying to this minor should have completed a minimum of 60 credits and be in good academic standing.

The following rules apply:

- The minor consists of a minimum of 18 credits, including at least nine credits in courses at or above the 300 level in management.
- At least nine credits of the 18 credits required for the minor must be taken in residence at AUS.
- At least six credits of the nine credits at or above the 300 level must be taken in residence at AUS.
- A grade of at least C- in each course and a GPA of at least 2.00 must be earned in courses taken to satisfy the minor.

Prerequisite Courses

Students must complete the following courses or their equivalent. All course prerequisites must be satisfied. Courses in the minor may require additional prerequisites.

- ECO 201 Principles of Microeconomics
- ECO 202 Principles of Macroeconomics
- One of the following combinations: MTH 101 and MTH 102, or MTH 100 or MTH 111 and MTH 101, or MTH 103 and MTH 104
- QBA 201 Quantitative Business Analysis or

  STA 201 Introduction to Statistics for Engineering and Natural Sciences or

  STA 202 Introduction to Statistics for Social Sciences or

  NGN 111 Introduction to Statistical Analysis

Minor Requirements (9 credits)

- MGT 301 Organizational Behavior
- MGT 303 Management and Leadership Development
- MGT 305 International Business

Minor Electives (minimum of 9 credits)

Students should complete a minimum of nine credits in 300-level or above MGT courses not listed as requirements for the minor.

Minor in Marketing

This minor is designed to provide a student with the basic coverage of key marketing concepts. The minor is intended for students whose major discipline involves interaction with customers in some way. The minor will demonstrate how customer feedback can be used in a variety of disciplines and careers.

Students applying to this minor should have completed a minimum of 60 credits and be in good academic standing.

The following rules apply:

• The minor consists of a minimum of 18 credits, including at least nine credits in courses at or above the 300 level in marketing.
• At least nine credits of the 18 credits required for the minor must be taken in residence at AUS.
• At least six credits of the nine credits at or above the 300 level must be taken in residence at AUS.
• A grade of at least C- in each course and a GPA of at least 2.00 must be earned in courses taken to satisfy the minor.

Prerequisite Courses

Students must complete the following courses or their equivalent. All course prerequisites must be satisfied. Courses in the minor may require additional prerequisites.

• ECO 201 Principles of Microeconomics
• ECO 202 Principles of Macroeconomics
• One of the following combinations: MTH 101 and MTH 102, or MTH 100 or MTH 111 and MTH 101, or MTH 103 and MTH 104
• QBA 201 Quantitative Business Analysis or
  STA 201 Introduction to Statistics for Engineering and Natural Sciences or
  STA 202 Introduction to Statistics for Social Sciences or
  NGN 111 Introduction to Statistical Analysis

Minor Requirements (9 credits)

• MKT 301 Consumer Behavior
• MKT 302 Marketing Research
• MKT 401 Marketing Strategy

Minor Electives (minimum of 9 credits)

Students should complete a minimum of nine credits in 300-level or above MKT courses not listed as requirements for the minor.

Minor in Public Administration

Students enrolling in the public administration minor must have completed a minimum of 30 credits of course work and be in good academic standing. In rare circumstances, exceptions may be made with the permission of the department head.

The following rules apply:

• The minor consists of a minimum of 18 credits, including at least nine credits in courses at or above the 300 level in PBA.
• At least nine credits of the 18 credits required for the minor must be taken in residence at AUS.
• At least six credits of the nine credits at or above the 300 level must be taken in residence at AUS.
• A grade of at least C- in each course and a GPA of at least 2.00 must be earned in courses taken to satisfy the minor.

Prerequisite Courses

• BIS 101 Business Information Systems (not required for students from engineering or computer science)
• ECO 201 Principles of Microeconomics
• ECO 202 Principles of Macroeconomics
• MTH 101 or MTH 102 or MTH 103 or MTH 104 or MTH 111

Minor Requirements (12 credits)

• ECO 325 Public Economics
• PBA 101 Introduction to Public Administration
• PBA 201 Public Management
• PBA 306 Human Resource Management in Public Organizations

Minor Electives (minimum of 6 credits)

Students must complete two additional PBA courses, for a minimum of six credits, at the 300 level or above.

AUS
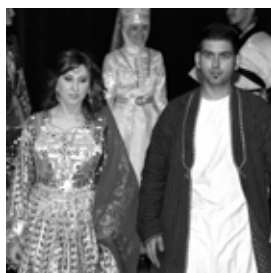
College of Arts and Sciences

AMS American Studies

AMS X94 Special Topics in American Studies (1 to 4 credits). Presents a theoretical or practical topic proposed by the faculty beyond what is offered in existing courses. Can be repeated for credit. Prerequisites: topic specific. Lab/tech fee may apply.

Check the Special Topics Courses section at the end of the College of Arts and Sciences course descriptions for more information on special topics.

ARA   Arabic
Arabic Language

ARA 104 Arabic as a Second Language I (3-0-3). (Formerly ARA 100). Introduces students to the script of modern written Arabic and develops their confidence and knowledge in the four skill areas. Employs materials that are designed using a modern approach to foreign language teaching. Does not satisfy the Arabic heritage requirement.

ARA 200 Arabic as a Second Language II (3-0-3). Builds upon the language skills developed in ARA 104 to further extend students' knowledge and proficiency in modern Arabic. Does not satisfy the Arabic heritage requirement. Prerequisite: ARA 104 or permission of the instructor.

ARA 210 Composition for Native Speakers of Arabic (3-0-3). (Formerly ARA 103). Aims to develop the writing skills of the native speaker of Arabic. Develops themes such as letter writing and gives attention to the development of personal style. Takes a historical look at styles of composition in Arabic.

ARA 220 Composition for Non-Native Speakers of Arabic (3-0-3). Aims to develop the writing skills of non-native speakers of Arabic. Develops themes such as letter writing and gives attention to the development of different styles in modern and contemporary Arabic writings. Prerequisite/concurrent: ARA 200.

ARA 300 Arabic as a Second Language III (3-0-3). Builds on the earlier Arabic courses using materials that are more advanced. Uses video materials that build on grammatical structures and conversational skills practiced in earlier courses as the focus for this course. Does not satisfy the Arabic heritage requirement. Prerequisite: ARA 200.

ARA 309 Business Arabic (3-0-3). Develops students' abilities in reading and writing Arabic-language business documents and proposals. Teaches Arabic speaking and listening skills necessary for effective communication in the business world. Does not satisfy the Arabic heritage requirement. Prerequisite: ARA 200 or ARA 210.

ARA 314 Media Arabic (3-0-3). Teaches and practices the language skills necessary to comprehend and contribute to a wide range of Arabic-language media. Does not satisfy the Arabic heritage requirement. Prerequisite: ARA 200 or ARA 210.

ARA 340 The Social Context of Arabic (3-0-3). (In English). Discusses language issues in the Arab world by relating language to national identity. Identifies and characterizes sociopolitical problems related to the development of Modern Standard Arabic in the Arab world today and how they affect language planning, literacy development and evolution of MSA. Prerequisite: ENG 203 or ENG 204.

ARA 404 Working with MSA Texts (3-0-3). Builds on the earlier Arabic courses using materials that are more advanced. Uses Modern Standard Arabic texts (political, economic and social) to develop further the grammatical structures and the four skills practiced in earlier courses. Covers advanced language competency and skills such as skimming, summarizing, paraphrasing and extended writing. Prerequisite: permission of advisor. Does not satisfy the Arabic heritage requirement. Prerequisite: ARA 200 or ARA 210.

Arabic Literature

ARA 101 Readings in Arabic Heritage I (3-0-3). (In Arabic and English). Examines selections from writings in Arabic prose and poetry that reflect the intellectual, literary and cultural development of the Arabs from pre-Islamic times up to the fall of Baghdad in 1258 CE.

ARA 102 Readings in Arabic Heritage II (3-0-3). (In Arabic and English). Examines selections from writings in Arabic prose and poetry that reflect the intellectual, literary and cultural development of the Arabs from the fall of Baghdad in 1258 CE up to the present day.

ARA 201 Arabic Literature in Translation (3-0-3). (In English). Provides a detailed study of genre and theme in Arabic literature with special emphasis on the modern period. Prerequisite: WRI 102.

ARA 202 Arab-Islamic History and the History of Arabic Literature (3-0-3). (In English). Designed to illustrate the essential facts of Arab history. This very intensive and wide-ranging survey course focuses on the landmarks of Arabic literature from pre-Islamic to modern times and provides glimpses of the literary fruits borne within that milieu. Prerequisite: WRI 102.

ARA 206 Modern Arabic Prose (3-0-3). (In Arabic). Surveys the renaissance of Arabic prose from the 19th century to the present. Probes and examines in the modern Arabic novel, short story, play and autobiography. Examines the rise of these fundamentally Western literary forms in the Arab world as a result of the Nahda. Prerequisite: ARA 101.

ARA 207 Arabic Drama (3-0-3). (In Arabic). Looks at the emergence of Arabic drama in the 19th century until the present day and assesses prototype drama forms of the medieval period. Provides, through a study of selected plays by prominent authors, a picture of the influence of Arabic drama on Arabic literature. Prerequisite: ARA 101.

ARA 209 Modern Arab History through Literature (3-0-3). (Formerly HIS 209). (In English). Introduces students to modern Arab history through literature and links literary production to its historical and cultural context. Helps students become aware of how history and literature intersect and of the similarities and differences in historical and literary writing. Readings include works of fiction and non-fiction such as novels, short stories, memoirs, biographies and autobiographies. Prerequisite: WRI 102.

ARA 213 Contemporary Arabic Literature (3-0-3). (In Arabic). Surveys modern and postmodern Arabic fiction, drama, poetry and criticism. Includes themes such as love, death, exile, and social and political concerns. Examines the nexus between literary works and contemporary Arab life. Prerequisite: ARA 101.

ARA 302 Arab Identity and Thought (3-0-3). (Formerly CSC 302). (In English). Examines representative writings by Arab authors dealing with Arab identity formation in relation to or in opposition to other nations and cultures. Prerequisite: WRI 102.

ARA 303 Classical Arab/Islamic Culture (3-0-3). (In English). Explores the ways in which Islam has shaped the history and culture of the Arabs and discusses some of the significant features of Arab/Islamic culture and the several contributions this culture has made. Prerequisite: WRI 102.

ARA 304 Modern Arabic Poetry (3-0-3). (In Arabic). Surveys the renaissance of Arabic poetry from the 19th century to the present. Prerequisite: ARA 101.

ARA 310 Images of America in Arabic Literature and Film (3-0-3). (In English).Discusses the way in which America and the Americans have been portrayed in the Arabic travel accounts, Arab mass media, films, plays and cartoons from the 1890s to present. Prerequisite: WRI 102.

ARA 312 Modern Arabic Literature: Prose and Poetry (3-0-3). (In Arabic). Surveys the renaissance (Nahda) of Arabic literature from the early 20th century to the present. Illustrates contemporary literary trends such as neo-classicism, romanticism and modernism through the study of selected novels, short stories, drama and poetry. Prerequisite: ARA 101.

ARA 320 Arabs and the West: The Andalusian Symbiosis I (3-0-3). (Formerly THM 301). (In English). Introduces students to the cultural symbiosis between Arabs and Europeans during the eight centuries of Arab/Muslim rule in Spain. Examines and reevaluates the literary and cultural developments of that time. Discusses the historical, literary, linguistic and artistic products of Al Andalus. Satisfies the Arabic Heritage requirement. Prerequisite: junior standing.

ARA 321 Arabs and the West: The Andalusian Symbiosis II (3-0-3). (In English). (Formerly THM 302). Examines the channels through which philosophical, religious, scientific and technological knowledge in Muslim Spain was produced and transmitted. Ends with a reevaluation of the Andalusian legacy to the Arab World and the West. Satisfies the Arabic heritage requirement. Prerequisite: junior standing.

ARA 385 Islamic Texts in Translation (3-0-3). (In English). Explores the development of the Arab-Islamic intellectual tradition and traces the genesis of religious learning by examining the influence of the Islam's primary sacred texts and how they shaped the religion's intellectual history. Discusses the literary production of this evolution by selectively examining a range of Islamic texts from a number of disciplines such as Islamic jurisprudence (fiqh), scholastic theology (kalam) Arab philosophy (falsafa) and Islamic spirituality and mysticism (tazkiyat al-nafs). Prerequisite: ENG 203 or ENG 204.

ARA 401 Literary Criticism from the Arab Perspective (3-0-3). (In Arabic). Surveys the history of literary criticism in Arabic literature from the classical period to the present. Prerequisite: ARA 210.

ARA 402 Qur'anic Studies (3-0-3). (Formerly CSC 402). (In English). Aims to develop the understanding of major topics in Qur'anic studies such as the revelation of the Qur'an, the characteristic features of Meccan and Medinan revelations, the notion of abrogation in the Qur'an, circumstances of revelation and parables in the Qur'an and their moral lessons. Provides students the opportunity to study Qur'anic exegesis and to explore the Qur'an's various themes and theological, spiritual and legal concepts. Requires a basic understanding of Qur'anic script. Prerequisites: ARA 101, and ENG 203 or ENG 204.

ARA 403 War and Peace in Arabic Literature and Film (3-0-3). (In English). Analyzes the way the twin themes of war and peace have been treated in modern Arabic literature and film by surveying Arabic novels, short stories, poetry, autobiographies and selected feature films. Prerequisite: ENG 203 or ENG 204.

ARA 405 Literature of the Arabian Gulf (3-0-3). (Formerly ARA 305) (In Arabic). Examines the contribution of literary figures in the Arabian Gulf, especially those of the United Arab Emirates, to Arabic literature in general. Prerequisite: ARA 210.

ARA 431 Alf Laylah wa-Laylah [The Thousand and One Nights] (3-0-3). (In Arabic). Examines the Thousand and One Nights, better known in the West as the Arabian Nights, and analyses selected stories from the collection along with criticism in order to understand their literary relevance to popular and classical Arabic literature. Studies the social context of the stories in relation to other historical, economic and social tracts and accounts. Prerequisite: ARA 303 or ARA 304 or ARA 312.

ARA 432 The Maqamat (3-0-3). (In Arabic). Acquaints students with classical Arabic narrative tradition as it evolved in urban centers during the Abbasid period. Focuses on al-Hamadhani's assemblies in particular in order to improve students' competence in Arabic language and engage them with social life in the classical period. Prerequisite: ARA 303 or ARA 304 or ARA 312.

ART — Art and Art History

ART 101 Survey of Art I (3-0-3).
Explores art's contribution to Western civilization. Introduces personalities, ideas and the cultural context that established major styles in painting, sculpture and architecture. The first part of this two-course sequence covers the time span from Prehistory to the Middle Ages. Not open to students who have taken DES 121. Prerequisite/concurrent: WRI 101.

ART 203 Da Vinci and the Age of Discovery (3-0-3). Explores the context. themes and personalities that shaped the shift from the Middle Ages to the Renaissance. Traces the role of Christianity and Islam in shaping medieval faith and art. Investigates classical humanism, Leonardo da Vinci, Michelangelo, the Reformation and the impact of scientific and geographic discovery. Prerequisite: WRI 102.

BIO — Biology

BIO 101 General Biology I (3-3-4).
Covers the molecular basis of life, the carbon atom, cells, organelles, plant and animal physiology, genetics, speciation, evolution, the origins of life and bacteriology. Gives students an in-depth study of biology that will prepare them for a profession in biology. Lab/Tech fee rate A applies.

BIO 102 General Biology II (3-3-4).
Covers plant and animal diversity, animal evolution, plant and animal form and function, body systems, animal behavior, ecology and conservation biology. Gives students an in-depth study of organism biology that will prepare them for a profession in biology. Prerequisite: BIO 101. Lab/Tech fee rate A applies.

BIO 103 Introduction to Life Sciences (3-0-3). Surveys biological concepts with a strong emphasis on human biology. Includes the following topics: the scientific method, biochemistry, cell biology, functions and dysfunctions of the human organ systems and a strong emphasis on maintaining a healthy lifestyle. Not open to science or engineering students.

BIO 210 Introduction to Anatomy and Physiology (3-0-3). Provides a basic foundation in human anatomy and physiology with an emphasis on the normal functions of the major human organ systems. Discusses current literature on some human diseases resulting from dysfunction. Prerequisite: BIO 101.

BIO 251 Environmental Ecology (2-3-3). Deals with the general principles of ecology with an emphasis on desert ecology and conservation. Includes case studies that illustrate important ecological principles. Emphasizes through laboratory exercises basic field ecology techniques, experimental design, data collection, modeling and analysis. Requires students to complete two professional-quality written reports. Prerequisite: BIO 102. Lab/Tech fee rate A applies.

BIO 260 Genetics (2-3-3). Covers the general principles of genetics from Mendelian to modern molecular genetics, including replication, transcription, translation, mutations, gene regulation, quantitative genetics, genetic engineering, genomics and genetics in medicine, agriculture and law enforcement. Illustrates general principles discussed in class with laboratory experiments using modern equipment. Prerequisite: BIO 102. Lab/Tech fee rate B applies.

BIO 330 Ecosystems Management (3-0-3). Focuses on the policies of ecosystems management from a scientific and natural approach. Gives special attention to current research and case studies of organism adaptations and roles in specific habitats and adverse environments, and to formulate approaches and policies most suitable for the management of natural, restored and artificial ecosystems. Reviews management practices in light of current scientific and sociobiological understanding of biodiversity, conservation and sustainability. Prerequisite: BIO 251.

BIO 332 Cell Biology (3-0-3).
Includes all of the concepts related to the "unit of life," the cell. Focuses on the metabolic pathways of the cell as they relate to the structure and function of the cell organelles and other anatomical components. Covers macromolecules, organelles, energy flow, signal transduction in neurons, cellular reproduction, gene expression, cyctoskeletal systems, motility and metabolic regulatory mechanisms. Prerequisite: BIO 260.

BIO 335 Microbiology (3-3-4). Covers the biology of microorganisms (viruses, bacteria, fungi and helminthes). Emphasizes the role they play in our lives, especially as related to epidemiology, health, prevention of infection and identification. Teaches students sterile techniques, how to culture and identify bacteria, and how to control them in clinical, personal and environmental settings. Prerequisite: BIO 101. Lab/Tech fee rate A applies.

BIO 361 Evolution and Biodiversity (3-0-3). Introduces principles of evolution as applied to all organisms. Covers the origins of life, the history of evolution, biogeography, population genetics, speciation, phylogenetic analysis, human evolution and applications to current problems in agriculture, species conservation, population dynamics and the effects of environmental change. Prerequisite: BIO 260.

BIO 421 Aquatic Environments (2-3-3). Focuses on interactions between biological, chemical and physical processes in marine environments. Places strong emphasis on marine ecology and local fauna of the Gulf region. Includes the following topics: marine physics and chemistry and their importance to marine biology, oceanic plankton and nekton, deep-water biology, coastal habitats, energy flow, fisheries and marine conservation issues. Prerequisite: BIO 251. Lab/Tech fee rate A applies.

BIO 461 Desert and Maritime Plants (3-0-3). Gives students a good working knowledge of the desert and maritime plants that are unique to the United Arab Emirates. Familiarizes them with the proper taxonomy and identification of species, and provides knowledge about the environment in which they grow. Emphasizes the adaptations of plant species to the special stresses plants encounter in the hot, dry and often salty

environments found in this region. Prerequisite: BIO 25.

BIO 491 Senior Research Project I (0-6-3). Requires students to select a biology problem for independent research project. Upon approval of the department, the student begins with a literature search then follows up with laboratory studies. The results are then presented in a seminar as well as thesis form. Prerequisite: senior standing. Lab/Tech fee rate B applies.

BIO 492 Senior Research Project II (0-6-3). Continuation of BIO 491. Requires students to select a new or related biology problem for independent research project. Upon approval of the department, the student begins with a literature search then follows up with laboratory studies. The results are then presented in a seminar as well as thesis form. Prerequisite: senior standing. Lab/Tech fee rate B applies.

CHM   Chemistry

CHM 101 General Chemistry I (3-3-4). Covers the fundamental chemical principles, concepts and laws. Includes the following topics: reaction stoichiometry, types of chemical reactions, solution stoichiometry, gas laws, kinetic theory of gases, thermochemistry, atomic structure and periodicity, the Bohr model, Lewis structures, ionic and covalent bonding. Laboratory experiments illustrate principles discussed in the course. Lab/Tech fee rate A applies.

CHM 102 General Chemistry II (3-3-4). Covers the solid state and crystallography, the liquid state and phase diagrams, properties of solutions, including colligative and chemical properties; reaction kinetics, acid-base and complex ion equilibria; laws of thermodynamics; enthalpy and free energy; electrochemistry; and nuclear chemistry. Includes laboratory experiments illustrating principles discussed in the course. Prerequisite: CHM 101. Lab/Tech fee rate A applies.

CHM 103 Chemistry and Everyday Life (3-0-3). Introduces the fundamental principles of chemistry and the role of chemistry in everyday activities.

Includes the following topics: chemistry of the nucleus and the atomic bomb, acids and bases, petroleum products, environmental chemistry, perfumes, cosmetics, soaps and detergents, chemistry in the kitchen, food additives and food coloring, pesticides, toxins and poisons, chemistry of the mind, forensic chemistry and DNA finger printing. Not open to science or engineering students.

CHM 105 Chemistry and the Environment (3-0-3). Covers topics related to air and energy, toxic substances, water and waste treatment. Gives special attention to the ozone layer, ground level pollution, air and marine pollution, heavy metals in soil, global warming and environmental impact of energy production. Includes the following learning activities: projects, web searches and demonstrations. Not open to science or engineering students.

CHM 215 Organic Chemistry I (3-0-3). Surveys reactions of aliphatic and aromatic compounds including modern concepts of bonding, mechanisms, conformational analysis and stereochemistry. Includes the following topics: alkanes and cycloalkanes; alkenes; alkynes; biologically active acetylenic compounds; electrophilic and nucleophilic reactions; resonance; alkyl halides; and SN1, SN2, E1 and E2 mechanisms. Prerequisite/concurrent: CHM 102.

CHM 216 Organic Chemistry II (3-0-3). Deals with modern spectroscopic techniques for structure determination; chemistry of oxygen and nitrogen compounds; and chemistry of alcohols, ethers, carbonyl compounds and amines. Gives special attention to mechanistic aspects. Prerequisite: CHM 215.

CHM 217 Organic Chemistry Laboratory I (0-4-1). (Formerly CHM 215L). Includes experiments on purification, separation and identification techniques, as well as synthesis of various organic compounds. Prerequisite: CHM 215. Lab/Tech fee rate A applies.

CHM 218 Organic Chemistry Laboratory II (0-4-1). (Formerly CHM 216L). Includes experiments related to the theoretical principles and synthetic methods of modern organic chemistry.

Prerequisites: CHM 216 and CHM 217. Lab/Tech fee rate A applies.

CHM 221 Basic Concepts of Inorganic Chemistry (3-0-3). Introduces basic concepts of inorganic chemistry. Covers atomic structure and the periodic table; molecular models, Lewis structure, electron pair repulsion model, hybridization and its use in explaining molecular properties; symmetry, point groups, electronic transitions and molecular vibrations; and molecular orbital theory of homonuclear and heteronuclear diatomic molecules and some triatomic molecules. Includes applications of inorganic compounds in environmental systems. Prerequisite: CHM 102.

CHM 241 Quantitative Analysis (2-3-3). Introduces the basic theories underlying analytical methods of chemical analysis. Covers fundamentals and applications of electrochemistry; compleximetric titrations; spectrophotometry; gravimetric and combustion analysis. Gives special attention to analysis of environmental samples. The laboratory component deals with a variety of analytical techniques. Prerequisite: CHM 102.

CHM 315 Organic Chemistry III (3-0-3). Covers chemistry and reactions of b-dicarbonyl compounds, neighboring group effects, phenols, aryl halides, electrocyclic and cycloaddition reactions, thiols, reactions and synthesis of heterocyclic amines, alkaloids, carbohydrates, lipids, amino acids and proteins. Prerequisite: CHM 216.

CHM 321 Chemistry of Transition Metals (3-3-4). Covers principles and applications of transition metal chemistry. Includes the following topics: coordination chemistry, group theory, organometallic reaction mechanisms, electrochemistry, photochemistry, bioinorganic chemistry, catalysis and applications to organic synthesis. In the practical part, typical inorganic complexes of some non-transition and transition elements are prepared and characterized using physical methods and spectroscopic techniques. Prerequisite: CHM 221. Lab/Tech fee rate A applies.

CHM 330 Physical Chemistry I (3-0-3). Investigates in depth the basic concepts of thermodynamics.

Analyzes the properties of gases as the basis for the study of the laws of thermodynamics, which are applied to questions of chemical equilibrium, phases and solutions, phase equilibrium and other applications. Prerequisites: CHM 102 and MTH 104.

CHM 331 Physical Chemistry II (3-0-3). Covers kinetics, electrochemistry, surface chemistry and transport properties. Emphasizes the theory of reaction rates and methods of handling kinetic data. Examines the conventions, underlying theory and practical applications of electrochemical cells. Prerequisite: CHE 303 or CHM 330.

CHM 332 Physical Chemistry III (3-0-3). Comprises three parts: quantum mechanics (structure of the atom, simple quantum mechanical systems, H-atom, harmonic oscillator and angular momentum); chemical spectroscopy (atomic spectrum, IR spectroscopy and electronic spectra of molecules); and statistical mechanics (Maxwell's distribution, partition and thermodynamic functions). Prerequisite: CHM 331.

CHM 335 Physical Chemistry Laboratory (1-5-2). Comprises individually performed experiments. Includes the following topics: thermodynamics, kinetics, electrochemistry, surface chemistry and transport phenomena. Requires students to submit an original report after each experiment, including sample calculations and error analysis. Prerequisite/concurrent: CHM 331. Lab/Tech fee rate B applies.

CHM 345 Instrumental Analysis (2-3-3). (Formerly CHM 445). Introduces modern instrumental methods of analysis utilized by scientists, environmentalists and engineers. Provides an understanding of the principles, laws and operation of modern instrumentation, including molecular and optical spectroscopy, flame and plasma absorption spectroscopy, electrochemical and analytical methods, thermal methods, separation and chromatographic techniques, and mass spectroscopy. Prerequisite: CHM 102. Lab/Tech fee rate B applies.

CHM 350 Introduction to Biochemistry (3-0-3). Introduces the fundamental principles of biochemistry: protein structure and function; carbohydrates; lipids and the structure of biological membranes; enzymatic catalysis and regulations; and metabolism of carbohydrates, lipids and amino acids. Discusses the vital relationship between structure and function of major organic macromolecules. Surveys fundamental nucleic acid and protein biochemistry topics such as DNA replication, transcription and translation. Prerequisite: CHM 215.

CHM 415 Spectroscopy in Organic Chemistry (3-0-3). Deals with modern methods of structure determination employing spectroscopic techniques and stereochemistry. Includes the following topics: infrared spectroscopy of organic functional groups; nuclear magnetic spectroscopy (NMR) (chemical shifts, coupling constants, first- and second-order spectra, two-dimensional spectroscopic methods); ultraviolet spectroscopy, its origin and applications to different chromophores; mass spectrometry (spectrum generation, interpretation and fragmentation patterns of various classes of organic compounds); and solving combined structure problems. Prerequisite: CHM 216.

CHM 431 Biophysical Chemistry (3-0-3). Deals with the physical chemistry of biological and biochemical molecules. Covers applications of chemical potential to membranes; multiple equilibria in biochemical systems; binding of small molecules and ions to macromolecules; cooperative phenomena; types of molecular weights; transport process (diffusion, sedimentation, viscosity, and electrophoresis); polarography; light scattering; enzyme kinetics and pharmacokinetics; the physical chemistry of nucleic acids; the relation between structure and function of biological macromolecules; and conformational transitions. Prerequisite: CHM 331.

CHM 491 Senior Research Project I (0-6-3). Requires students to select a chemistry problem for independent research project. Upon approval of the department, the student begins with a literature search then follows up with laboratory studies. The results are then presented in a seminar as well as thesis form. Prerequisite: senior standing. Lab/Tech fee rate B applies.

CHM 492 Senior Research Project II (0-6-3). Continuation of CHM 491. Requires students to select a new or related chemistry problem for independent research project. Upon approval of the department, the student begins with a literature search then follows up with laboratory studies. The results are then presented in a seminar as well as thesis form. Prerequisite: senior standing. Lab/Tech fee rate B applies.

EDU   Education

EDU 210 Philosophy of Education (3-0-3). Focuses on the aims and purposes of education and traces the development of education and the concept of schooling from Plato and Confucius to contemporary educational thinkers. Gives special attention to issues of current educational concern including gender and educational values. Prerequisite: WRI 102.

EDU 220 Introduction to Teaching (3-0-3). Introduces students to the basic issues important to the teaching profession. Covers effective teaching practices such as planning, classroom organization, behavior management and use of technology in the classroom. Explores other issues in teaching, including motivation, leadership, and multicultural and international education. Prerequisite: WRI 102.

EDU 225 Globalization and Education (3-0-3). Introduces students to globalization in relation to schooling and educational issues. Explores ways that "globalization" has been problematized and researched in educational literature. Examines globalization from an educational stance and explores the macro and micro elements of a globalized economy. Prerequisite: WRI 102.

EDU 307 Teaching and Learning in an Electronic Environment (3-0-3). Focuses on the prominent research and best practices trends in content and language learning, as well as the social and individual factors that affect

teaching processes in an electronic environment. Explores how research and best practices in the area of e-learning can be utilized in different classroom situations. Prerequisite: EDU 210 or EDU 220.

EDU 309 Classroom Discourse (3-0-3). Focuses on patterns of language used by students and teachers in a variety of classrooms. Examines how these patterns can affect the equality or inequality of students' educational and learning opportunities. Analyzes discourse from the perspective of teaching practitioners in different professional settings. Prerequisite: EDU 210 or EDU 220.

EDU 319 Teaching and Learning in a Foreign Language (3-0-3). Discusses various theoretical models dealing with teaching in a foreign language to children and adolescents. Examines the processes involved when reading and learning in a foreign language as well as effective instructional strategies based on current research in the field. Prerequisite: EDU 210 or EDU 220.

EDU 325 Methodology and Materials Development (3-0-3). Introduces students to pedagogical approaches, techniques and methodologies that can be useful in various educational settings. Offers students the opportunity to evaluate and adapt commercially available textbooks as well as to create their own discipline-specific teaching materials. Prerequisite: EDU 210 or EDU 220.

EDU 329 Curriculum Development (3-0-3). Introduces students to the basic principles of effective assessment and course design. Covers evaluating learner centered/communicative curriculum, setting goals and objectives, analyzing resources, writing syllabi and conducting students' needs analyses. Prerequisite: EDU 210 or EDU 220.

ENG   English
English Language

ENG 203 Writing about Literature (3-0-3). (Formerly COM 203). Builds upon the skills acquired in WRI 102 to develop further students' critical

thinking and academic writing competencies. Requires students to read short stories, poetry and drama and produce a research paper using analytical and critical skills in response to literary texts. Prerequisite: WRI 102.

ENG 204 Advanced Academic Writing (3-0-3). (Formerly COM 204). Builds upon the skills acquired in WRI 102 to develop further students' critical thinking and academic writing competencies. Requires students to read and respond to a variety of texts from different disciplines and produce a research paper using analytical and critical skills in response to non-literary texts. Prerequisite: WRI 102.

ENG 207 English for Engineering (3-0-3). (Formerly COM 207). Intended for engineering students only. Introduces students to English used for communication in their field with a special emphasis on writing and presenting technical reports. Prerequisites: ENG 204 and junior standing.

ENG 208 Public Speaking (3-0-3). (Formerly COM 208). Introduces students to the art of public speaking, debate and argument. Helps students gain confidence as public speakers by learning the techniques of making effective presentations and by gaining extensive practice in public speaking. Prerequisite: ENG 203 or ENG 204 or ENG 231 or MCM 231.

ENG 223 Introduction to Language Study (3-0-3). Defines language and how it works. Leads students to examine their own beliefs and attitudes about language and provides them with techniques of language analysis. Covers grammar and appropriate usage, oral vs. written language, formal vs. informal language, standard vs. non-standard languages, language universals and language typology. Prerequisite: WRI 102.

ENG 224 English Grammar (3-0-3). Focuses on the fundamental rules of English grammar as they relate to sentence structure and function. Explores different systems of analysis, including an introduction to the analysis of texts. Prerequisite: WRI 102.

ENG 225 Writing for Business (3-0-3). (Formerly COM 225). Aims

to develop students' skills in writing business documents such as CVs, correspondence, memoranda, short and long reports, and proposals necessary to communicate effectively in the business world. Prerequisites: ENG 203 or ENG 204 and junior standing.

ENG 226 Development of the English Language (3-0-3). Traces the development of the English language from its Indo-European roots to the present day. Emphasizes linguistic change in English throughout its history. Prerequisite: WRI 102.

ENG 231 Writing for Visual Media (3-0-3). (Formerly COM 231). Introduces students to existing and emerging communication technology and examines its impact on the communication process. Prepares students to manage the process of designing documents, from the planning stage through final production. Helps students learn basic rhetorical principles and apply them by writing articles, stories and advertising copy. Prerequisites: ENG 203 or ENG 204 and junior standing.

ENG 234 Language in Society (3-0-3). Introduces the student to the sociolinguistic approach to language. Focuses on how language structure and language use are interrelated and also examines variables responsible for language variation within a speech community. Explores definitions of language, dialect, diglossia and multilingualism. Prerequisite: WRI 102.

ENG 302 Stylistics (3-0-3). Examines the essential concepts and techniques of literary stylistics. Uses selected literary texts to illustrate and explain a variety of English language structures. Prerequisite: ENG 203 or ENG 204.

ENG 320 Intercultural Communication (3-0-3). (Formerly COM 220; cross-listed as MCM 320). Provides an overview of world cultural literacy and shows how cultures influence communication. Helps students acquire broad knowledge about the interrelation of the humanities, music, mythology, art, theatre, history and science. Prerequisite: ENG 203 or ENG 204.

ENG 331 The Sound Patterns of Language (3-0-3). Examines the nature

of the rules governing the sound system of language with special emphasis on English. Introduces the study of the physiology of speech production and phonetic transcription through practical exercises. Examines inflectional and derivational rules in language and word formation processes. Prerequisite: ENG 223 or ENG 224.

ENG 332 The Psychology of Language (3-0-3). Introduces the study of the psychology of language by exploring the relationship between language and the mind. Examines processes involved in comprehension, production and acquisition of language, and initiates students to research techniques and linguistic data collection. Prerequisite: ENG 203 or ENG 204.

ENG 385 Language and Gender (3-0-3). Examines the reasons behind the differences in men's and women's talk. Explores how categories of language influence one's belief about one's self and others and the ways in which gendered language use relates to power and dominance in society. Prerequisite: ENG 223 or ENG 224.

ENG 401 Advanced English Grammar (3-0-3). (Cross-listed as ELT 501). Provides an intensive investigation into contemporary English sentence structure, function and meaning. Analyzes how structure types and sentence relationships are realized in various texts and genres. Discusses issues relative to descriptive/prescriptive approaches to language. Prerequisite: ENG 223 or ENG 224.

ENG 405 Discourse Analysis (3-0-3). Looks at the interpretation of meaning situated beyond the level of the sentence. Examines the role of notions such as background knowledge, cohesion and coherence in texts and conversational interaction in order to achieve a better understanding of how language works as a communication medium. Prerequisite: ENG 223 or ENG 224 or TRA 220.

ENG 495 Seminar in English (3-0-3). Focuses on various topics in English language or English literature. Prerequisite: junior standing.

English Literature

ENG 210 Introduction to Literature (3-0-3). Focuses on the study of fiction, poetry or drama and shows how writers use the basic elements of their craft to convey their insights into human nature. Focuses primarily on accessible modern and contemporary work. Designed for non-majors who need to fulfill their English language competency requirement or humanities requirement as well as for English majors. Prerequisite: ENG 203 or ENG 204.

ENG 214 Nineteenth Century American Literature (3-0-3). Examines American literature from the colonial period to 1900, concentrating on the philosophical, social and political issues that shaped the styles and ideas of such writers as Franklin, Poe, Emerson, Thoreau, Dickinson, Whitman and Twain. Prerequisite: ENG 203 or ENG 204.

ENG 215 Contemporary World Literature (3-0-3). Introduces students to contemporary literary movements such as postmodernism, magic realism, feminism, regionalism and postmodernism. Studies the works of major international writers such as Grass, Calvino, Kundera, Allende, Mahfouz, Mimouni and Soyenka. Works studied will be written in or translated into English. Prerequisite: ENG 203 or ENG 204.

ENG 300 Introduction to Literary Theory (3-0-3). Highlights a variety of 20th century critical practices and theoretical approaches to the study of literature. Offers practical applications of the theoretical texts under examination. Prerequisite: ENG 312 or ENG 210 or ENG 214 or ENG 215.

ENG 301 Creative Writing (3-0-3). (Formerly ENG 201). Introduces the basic elements of writing and evaluating poetry, fiction and creative non-fiction. Requires students to submit at least 20 pages of material suitable for inclusion in the student literary magazine. Prerequisite: ENG 203 or ENG 204.

ENG 303 Shakespeare's Plays (3-0-3). Examines works by Shakespeare. Covers Shakespeare's histories, romances, comedies and tragedies

within the context of the politics, history and culture of his time. Prerequisite: ENG 203 or ENG 204.

ENG 312 English Poetry and Prose I: Beginnings to 1800 (3-0-3). (Formerly ENG 202). Surveys English poetry and prose from the Anglo-Saxon, Medieval, Renaissance, Restoration and the Age of Reason literary periods. Representative texts are studied in relationship to their social, political and historical background. Prerequisite: ENG 203 or ENG 204.

ENG 313 English Poetry and Prose II: 1800 to Present (3-0-3). (Formerly ENG 213). Surveys English poetry, prose and drama from the Romantic, Victorian and Modern literary periods. Studies representative texts in relationship to their social, political and historical background. Prerequisite: ENG 203 or ENG 204.

ENG 314 Twentieth Century American Literature (3-0-3). Examines American literature from 1900 to the present, concentrating on the philosophical, social and political issues that shaped the work of writers. Discusses the changing form and content of American fiction, drama, poetry and essay, as well as relevant literary theories. Prerequisite: ENG 203 or ENG 204.

ENG 315 East Meets West: Colonial and Post-Colonial Encounters (3-0-3). Examines the representations of the Middle East, India, China and North Africa in the works of North American and European writers. Addresses the responses to and representations of Westerners by non-Western writers. Prerequisite: ENG 203 or ENG 204.

ENG 316 Modern Drama and Beyond (3-0-3). (Formerly ENG 216). Introduces students to developments in drama from the modern period to the present. Exposes students to major literary developments in drama such as realism, theater of the absurd, epic theater and various types of experimental and contemporary theater. Prerequisite: ENG 203 or ENG 204.

ENG 378 Literature as Film (3-0-3). (Cross-listed as MCM 378). Uses literary works and their cinematic adaptations to introduce students to

film theory ideas and their parallel techniques in literature. Prerequisite: ENG 203 or ENG 204.

ENG 393 Shakespeare on Film (3-0-3). (Cross-listed as MCM 393). Uses an interdisciplinary approach (incorporating English literature and media/film studies) to teach how to synthesize elements of film theory and literary criticism and incorporate them into a series of research papers. Prerequisite: ENG 203 or ENG 204.

ENG 410 The American Novel (3-0-3). (Formerly ENG 309). Examines the styles and concerns of the American novel from the 19th century to the present and includes representative examples of such national and international literary movements as romanticism, realism, modernism, postmodernism and magic realism, with particular emphasis on how American novelists adapted these styles to suit their own society and culture. Prerequisite: ENG 210 or ENG 214 or ENG 215 or ENG 314.

ENG 421 Early English Novel (3-0-3). (Formerly ENG 420). Traces the development of the novel from its rise in the early 18th century to its flowering in the great realistic novels of the 19th century. Prerequisite: ENG 210 or ENG 215 or ENG 312 or ENG 313.

ENG 430 Modern British Novel (3-0-3). (Formerly ENG 313). Examines trends in the 20th century British novel, including such literary movements as realism, modernism and postmodernism. Prerequisite: ENG 210 or ENG 215 or ENG 312.

ENG 490 Senior Research Project (3-0-3). Focuses on the study of a literary movement or literary writer of the student's and professor's choice and the writing of a long critical paper or creative work on this writer or movement or in response to a specific literary problem. Prerequisite: senior standing.

ENG 495 Seminar in English (3-0-3). Focuses on various topics in English language or English literature. Prerequisite: junior standing.

ENV   Environmental Science

ENV 100 Principles of Environmental Science (3-0-3). Introduces the basic principles of environmental science. Explores the scientific method, structure of matter, energy principles, ecological concepts, organism interactions, communities and ecosystems, population dynamics, energy sources, biodiversity, human activities and the environment, managed ecosystems, water management, air quality and solid waste management. Not open to engineering and science students.

ENV 201 Fundamentals of Environmental Science (3-0-3). (Formerly ENV 101). Combines ideas and information from chemical, physical and biological disciplines. Helps students acquire knowledge on how nature works and how environmental systems are interconnected. Employs scientific laws, principles and concepts to help understand environmental and resource problems and their possible solutions. Makes connections between natural systems and environmental issues using different physical science perspectives. Presents information that will ultimately be related to real-world environmental problems. Prerequisite: CHM 102.

ENV 252 Environmental Chemistry (3-0-3). Investigates in detail the interaction between natural systems and human activity. Emphasizes the following topics: aquatic chemistry, with special attention paid to water pollution and water treatment; atmospheric chemistry, with emphasis on air pollution, protection of the atmospheric environment and global atmosphere problems; soil chemistry; and sources and treatment of hazardous wastes. Explores local and regional pollution problems in detail. Prerequisite: CHM 102.

ENV 261 Physical Geography (3-0-3). Covers the physical aspects of the geographic environment. Includes topics such as cartography and geographic information systems, the

global energy balance, air temperature and pressure, atmospheric moisture content and precipitation, global wind circulation, weather systems, earth materials, forming and weathering processes, water cycling, fluvial processes and landforms. Prerequisite: CHM 101 or PHY 101.

ENV 311 Environmental Modeling (3-0-3). Deals with the study, collection, evaluation and interpretation of data and the modeling and analysis of urban and environmental problems. Includes topics such as population, pollution, mass transportation systems and climate modeling. Prerequisites: ENV 201 and MTH 104.

ENV 352 Environmental Toxicology (3-0-3). Combines principles of chemistry, biochemistry, biology and environmental science. Discusses the basic principles of environmental toxicology, including toxicant fate, bioavailability and biochemistry; dose-response relationships, toxicity testing, and species sensitivity distributions; and individual, population and community effects. Covers briefly principles of risk assessment and risk management of toxicants. Prerequisites: CHM 215 and ENV 201.

ENV 381 Environmental Strategies and Regulations (3-0-3). Reviews the historical development of environmental awareness that led to the present day of law and order in environmental protection. Compares major environmental regulations relevant to resource conservation, pollution prevention and mitigation, and human health care. Critically analyzes issues of environmental strategies in the GCC. Includes the preparation of individual case studies relevant to environmental strategies and regulations enforcement. Prerequisites: ENV 100 or ENV 201, and junior standing.

ENV 400 Environmental Physiology Systems (2-3-3). Explores the natural and anthropogenic stresses encountered by microorganisms, plants and animals in the environment and the roles they play in the environment. Explores the general physiology of organisms and then looks at the cellular and metabolic pathway levels. Allows students to

gain an understanding of the functions and dysfunctions in plants and animals and the reactions and adaptations to environmental stresses, pollution and manipulation. Prerequisite: BIO 335. Lab/Tech fee rate A applies.

ENV 411 Environmental Assessment and Management (3-0-3). Deals with the impact of human activities on the ecosystem. Demonstrates how environmental assessment results provide a basis for comparing various management options, enabling decision makers and the public to make informed decisions about the management of ecological resources. Discusses ethical and legal dimensions of a number of environmental problems. Emphasizes local and regional issues. Students cannot obtain credit for both ENV 411 and ENV 412. Prerequisite: ENV 201.

ENV 412 Concepts and Models in Environmental Management Systems (3-0-3). Introduces modern tools of environmental management. Presents various models of environmental management systems and explores their application in the UAE and GCC countries. Discusses the elements of decision making in environmental management heading to resource conservation and pollution prevention and mitigation. Discusses ethical and legal dimensions of a number of environmental problems with emphasis on regional case studies. Students cannot obtain credit for both ENV 411 and ENV 412. Prerequisites: ENV 100 and junior standing.

ENV 451 Waste Treatment (3-0-3). Introduces the modern concepts of solid and liquid waste treatment. Covers sources and classifications of hazardous waste and their transport in the environment; hazardous waste management problems; physical, chemical and biological waste treatment processes; waste minimization; and analysis systems for regional planning. Prerequisite: ENV 252.

ENV 452 Soil and Water Chemistry (3-0-3). Deals with the development of soil/water chemistry. Includes modern analysis methods for humic substances, minerals, particulates and pollutants in the soil. Covers topics such as mineralogy, soil solution, ion exchange/sorption, water acidity, wetlands and redox processes in aerobic soils and nitrogen transformations. Prerequisite: ENV 252.

ENV 453 Environmental Monitoring and Analysis Techniques (2-3-3). Provides students with an extensive understanding of sampling, storage, preservation and analytical techniques critical in obtaining quality data for environmental monitoring of pollutants in each component of the environment. Stresses the interrelationship of these components and their importance to ecosystems along with the difficulties in environmental sampling. Provides standard methods for the examination of environmental samples and applies them in practical application for all compartments of the environment. Includes field trips to collect samples for characterization of water and soil quality in local areas. Prerequisites: CHM 345, ENV 201 and STA 201. Lab/Tech fee rate A applies.

ENV 491 Senior Research Project I (0-6-3). Requires student to select an environmental problem for independent research project. Upon approval by the department, the student begins with a literature search then follows up with field and laboratory studies. In addition to the scientific component of the project, students are expected to comment on the ethical and legal dimensions of the environmental issues being investigated. The results are then presented in a seminar as well as in a thesis form. Prerequisite: senior standing.

ENV 492 Senior Research Project II (0-6-3). Continuation of ENV 491. Requires student to select a new or related environmental problem for independent research. Upon approval by the department, student begins with a literature search then follows up with field and laboratory studies. The results are presented in a seminar as well as in a thesis form. Prerequisite: senior standing.

ENV 497 Internship in Environmental Science (0-0-0). Requires applied work in environmental aspects with a government, municipal or private organization. Graded as Pass/Fail. Prerequisite: Junior II standing and approval of internship coordinator. Registration fee applies.

FLM   Film

FLM 101 Introduction to Film Studies (3-0-3). (Formerly MCM 155). Examines the influences and impact of pioneer and early silent filmmakers on contemporary popular film. Covers topics such as the evolution of the comedic form, cinema and society, and the effect of artistic movements such as impressionism and expressionism. Develops students' analytical and interpretive skills by examining relationships between a film and its technological and cultural impact. Prerequisite/concurrent: WRI 102.

FLM 102 Contemporary Popular Films (3-0-3). (Formerly MCM 156). Examines the influences and impact of landmark films and filmmakers on contemporary popular film. Covers topics such as the development of new film technologies and techniques as well as approaches that helped to make film a distinct art form. Discusses comparison with other art forms and the use of frame and image to convey emotional content, along with concepts such as montage, genre, auteur and mise-en-scene. Prerequisite/concurrent: WRI 102.

FLM 260 Scriptwriting for Film and Theatre (3-0-3). (Formerly MCM 373). Teaches students the craft of writing for the theatre and film. Explores basic script formats. Requires coursework consisting of practice in research, interviewing, treatment and dialogue writing. Explores the creative process regarding the realization of personal ideas as theatrical or film scripts. Prerequisites: FLM 101 or THE 101, and WRI 102.

FRN   French

FRN 101 French Language and Culture I (3-0-3). Introduces the students to French language and culture in the

areas of reading, writing, listening and speaking skills within the most advanced technological e-learning tools. Equips students with basic linguistic skills and cultural knowledge to face the challenges of today's globalized work market.

FRN 102 French Language and Culture II (3-0-3). Continuation of FRN 101. Develops further students' skills in the areas of reading, writing, listening and speaking within the most advanced technological e-learning tools. Equips students with basic linguistic skills and cultural knowledge to face the challenges of today's globalized work market. Prerequisite: FRN 101.

GEO　　Geography

GEO 201 World Cultural Geography (3-0-3). Provides a broad survey of the cultural geography of the world. Addresses cultural systems, agriculture and natural resources, urbanization, industrialization, development and political geography, among other topics. Prerequisite/concurrent: WRI 102.

HIS　　History

HIS 201 Western Cultural Studies I (3-0-3). (Formerly CSC 201). Introduces the student to the basic doctrines and concepts of Western civilization. Covers reading material from the Renaissance to modern times, focusing on selections from the great books that have made Western civilization what it is. Deals with readings that cover theology, politics, science and literature. Prerequisite: WRI 102.

HIS 202 Western Cultural Studies II (3-0-3). (Formerly CSC 202). Continues the introduction of students to the basic doctrines and concepts of Western civilization. Covers reading material from modern and contemporary authors focusing on selections from the great books that made Western civilization what it is. Deals with readings that cover theology, politics and literature. Prerequisite: WRI 102.

HIS 204 Modern Arab History (3-0-3). Studies the history of the modern Arab world focusing mainly on the history of the region from 1800 and the changes that began to take place at that time. Concentrates on four aspects of the region's transformation: the experience of imperialism and colonialism, modernity, nationalism and the development of the modern state system. Prerequisite: WRI 102.

HIS 205 World History I [up to 1500] (3-0-3). Studies the world's major civilizations prior to 1500 concentrating on their primary institutions and their cultural contacts. Devotes particular attention to the Arab and Islamic world and Western Europe. Prerequisite: WRI 102.

HIS 206 World History II [1500 to present] (3-0-3). Looks at some of the major changes that have taken place since 1500 including: the exploitation and settlement of the Americas; the shift in power from the East (the Middle East and Asia) to the West (Europe and the United States); the Industrial Revolution and the globalization of capitalism; the domination of most of the societies of the world by the European powers and the United States (i.e., colonialism and imperialism); political and social revolutions, including wars of national liberation against colonial regimes; and changes in technology. Prerequisite: WRI 102.

HIS 208 Women in History (3-0-3). Comparatively surveys women's history from antiquity to the present in Europe and the Middle East. Aims to examine the lives, achievements, contributions and position of women historically, as well as to introduce students to the methodology of women's history, the sources for the study of women and the theories that provide the framework for the research and writing of women's history. Prerequisite: WRI 102.

HIS 210 The Making of Modern Europe (3-0-3). Introduces students to modern European history by exploring the key events and trends that have shaped Europe from 1789 to the present. Investigates the French Revolution, the Industrial Revolution, European imperialism, the development of nationalism, the First World War, the Russian Revolution, the rise of fascism, the Second World War, the Cold War, the collapse of the Soviet Union and development of the European Union. The course will also focus on the key social, demographic and cultural trends that have redefined European life in the 19th and 20th centuries. Prerequisite: WRI 102.

HIS 212 Modern Japanese History (3-0-3). Surveys the history of Japan from its beginnings to today. Briefly outlines Japan's earliest times, then focuses on the period after the mid-1500s and the first contact with Europeans, the Edo Era (1600–1868), with major discussion of the history of economic, social, cultural, political and foreign policy developments from 1868 to the present day. Prerequisite: WRI 102.

HIS 221 History of Science and Technology (3-0-3). Studies the development of scientific thought and methodology from ancient Greece to the modern era. Covers topics such as contributions of China, Islamic lands and Europe; the surge of French and 17th century English science; and the influence of science on patterns of thinking and behavior. Touches upon diverse areas such as the histories of astronomy, nuclear energy, chemistry and forensics, as well as life and environmental sciences. Prerequisite/concurrent: WRI 102.

HIS 240 Introduction to American History (3-0-3). Surveys the history of North America with a particular emphasis on the United States of America from the first European settlements to the present day. Covers interactions with Native Americans, slavery, the foundation of government, the Civil War and its aftermath, immigration, the emergence of the US as an industrial power, the US' role as an international power in the 20th century, social movements including those for civil and women's rights, the Cold War and its consequences, and the present situation of the US in the world. Prerequisite: WRI 102.

HIS 307 Modern Palestinian History (3-0-3). Examines Palestinian history before 1948 and brings the story forward to the breakthrough Oslo Accord of 1993 and its troubled aftermath. Focuses primarily on the origins and key aspects of the Arab-Israeli conflict. Prerequisites: WRI 102 and junior standing.

HIS 310 Modern Gulf History (3-0-3). Introduces students to the history of the Gulf Arab states in the 19th and 20th centuries. Examines the traditional economy of the Gulf before oil, traditional forms of rulership, the traditional role of merchants, British involvement in the region and the impact of oil in the first half of the course. Surveys the individual histories of the six Gulf Arab states in the second half of the course. Prerequisites: WRI 102 and junior standing.

HIS 311 America and the Middle East (3-0-3). Traces the connections between the United States and the Arab and Persian world from the first official contacts between the "Barbary Pirates" and the Jefferson Administration to the present. Studies a wide variety of material, from politics, immigration and war to art, literature and film. Requires a research paper on the topic of the student's choice as a key component of the course. Prerequisite: HIS 206 or HIS 240 or HIS 29401.

HIS 312 Modern Iranian History (3-0-3). Introduces students to the history of modern Iran in the 19th and 20th centuries. Focuses on the political and social transformation of Iran under the influence of European imperialism and popular protest movements. Examines the roles of constitutionalism, modernity and nationalism in the development of the Qajar and Pahlavi monarchies, and the Iranian Revolution of 1978–1979. Prerequisite: ENG 203 or ENG 204.

HIS 330 Resistance and Collaboration in Modern France and Algeria (3-0-3). Analyzes the nature of resistance and collaboration in France and Algeria during 1940–1970. Investigates the reasons why different groups and individuals chose to either resist or collaborate in the Second World War and the Algerian War of Independence. Uses films, original documents, novels and academic writing to study the history of moral behavior in war, the role of Islam in colonial struggles, and the ways in which Western and Islamic forms of history are constructed in Europe and North Africa. Demands a personal engagement with ethical questions such as the following: for what causes is it

just to kill and in what circumstances would you collaborate with an enemy? Prerequisite: WRI 102.

INS   International Studies

INS 205 World Cultures (3-0-3). (Formerly CSC 205). Explores the varied cultures of the world. Helps students acquire an appreciation for the critical importance of societal culture as a tool of human survival. Provides the framework for an appreciation of cultural differences and similarities and thereby increases understanding of the complex world with which we must cope. Prerequisite/concurrent: WRI 102.

INS 290 Research Practicum I (3-0-3). Involves faculty-supervised student projects in special topics of current interest. Both oral and written presentations on the topics are required from students. Graded as Pass/Fail. Prerequisite: WRI 102.

INS 291 Research Practicum II (1 to 3 credits). Continuation of INS 290. Involves faculty-supervised student projects in special topics of current interest. Both oral and written presentations on the topics are required from students. Graded as Pass/Fail. Prerequisite: WRI 102.

INS 301 Globalization (3-0-3). (Formerly POL 301). Examines the process of globalization, which is well underway at all levels of society with sociopolitical impacts on all cultures. Introduces the globalization of economic systems, multinational organizations, technological, consumerism and worldwide communication systems. Prerequisite: POL 202.

INS 322 Global Political Economy (3-0-3). Deals with the roots and evolution of the global political economy from the end of the World War II and the launching of the Bretton Woods system to the Asia crisis of 1997 and its spread to Russia, Latin America and the Middle East. Focuses on the interplay between politics and economics for topics such as management of the international

financial system via the IMF, World Bank, World Trade Organization, globalization, trade, multinational corporations and changes in world production patterns, trade agreements such as the European Union, development strategies, debt crises, and attempts at political and economic liberalization in various countries. Prerequisites: ECO 201, ECO 202 and POL 202.

INS 325 Imperialism (3-0-3). Explores the origins, development and consequences of modern imperialism. Surveys the key patterns that have defined the growth and expansion of modern empires. Uses case studies of concrete historical situations to provide students with a detailed look at how empires grow and develop. Exhibits the development of imperial and colonial cultures in order to examine the durability of imperial orders. Investigates the decline and end of empires and the rise of nation states. Investigates the disparities between different patterns of decolonization and their respective legacies. Prerequisite: HIS 205 or HIS 206 or POL 201.

INS 400 Ethnic Politics in the Developing World (3-0-3). Examines the historical origins and contemporary dynamics of ethnic politics in the developing world. Surveys different theoretical approaches to the study of ethnic conflict, as well as the impact of colonialism on ethnic identities, and the legacy of decolonization on nationalist movements in the developing world. Examines a number of post-independence challenges faced by multiethnic states through the use of case studies. Prerequisite: POL 202.

INS 413 Political Economy of the Arab World (3-0-3). Surveys the political economic trajectories of selected states in the Arab world, paying special attention to the politics, societies and ideological currents of the Eastern (Mashreq) Arab world. Explores themes such as the process of post-colonial state formation, the rise of Arab nationalism and other forms of proto-nationalisms, variations in regime consolidation and state-society relations, the institutional structures of authoritarianism, the challenges of economic restructuring and political liberalization, and the

Islamist challenge. Prerequisites: ECO 201, ECO 202 and POL 202.

INS 414 Political Economy of the Asia Pacific Region (3-0-3). (Formerly INS 314). Explores political, economic, social and environmental issues in the Asia Pacific Region, which includes South, Southeast, East and Northeast Asia; Australasia; and the Pacific littoral states of North, Central and South America. Places special emphasis upon the efforts of regional cooperation organizations and lessons to be gleaned by the states of Southwest Asia and the Middle East. Prerequisites: ECO 201 and ECO 202, and INS 301 or INS 322 or POL 300 or POL 304.

INS 415 War and Peace in the Middle East (3-0-3). Examines inter-state conflict, and efforts to negotiate peace in the Middle East. Gives special attention to the interaction between the Arab-Israeli conflict, regional rivalries, the policies of the main international powers, and domestic politics in shaping regional dynamics. Some of the topics covered include the Arab-Israeli Wars, the different Gulf Wars and the Arab-Israeli peace process. Prerequisite: POL 202.

INS 495 Senior Seminar (3-0-3). Offered once a year and is considered the capstone course of the concentration. The topic of the course changes from year to year. Requires students to write a major research paper on the seminar topic. Restricted to international studies students. Prerequisite: Senior standing.

INS 497 Internship in International Studies (0-0-0). Involves applied work in international studies with businesses, a government organization or private agencies. Admission to the class must be approved by the student's advisor. Graded as Pass/Fail. Prerequisite: Junior II standing and approval of internship coordinator. Registration fee applies.

MCM Mass Communication

MCM 100 Introduction to Digital Media Design (3-0-3). Introduces students to digital media as part of developing practical communication skills. Covers aspects of advertising and public relations design and layout, web page design and basic animation techniques using keyboard, mouse, scanners, graphics tools such as graphics pad and stylus as well as still and video inputs and the use of printers. Introduces students to the basic use of digital design and animation software. Students cannot obtain credit for both MCM 100 and DES 100. Restricted to mass communication students. Lab/Tech fee rate A applies.

MCM 102 Introduction to Media Literacy (3-0-3). Introduces students to media as history as well as how and why various media forms were created. Discusses comparisons and relationships between visual arts, music, and oral, written and technological media. Gives students broad background knowledge on art, myth, music and the forces that helped foster their development. Prerequisite/concurrent: WRI 102.

MCM 150 Introduction to Mass Communication Studies (3-0-3). Examines the nature of the various areas of the mass media, (i.e., television, radio, newspapers, magazines and interactive outlets) and how they impact the individual and society. Prerequisite: WRI 102.

MCM 203 Effective Relational and Presentational Communication Skills (3-0-3). Examines theories and practices relevant to acquiring effective skills in relationship building and maintenance as well as in presenting information accurately and persuasively. Examines how personal and situational factors influence both interpersonal and public communication. Prerequisite: ENG 203 or ENG 204.

MCM 222 Integrated Marketing Communication (3-0-3). Explores the essential issues shaping contemporary communication practice including direct-response advertising, media technology, communication planning, sales, public relations and event marketing. Prerequisite: MCM 150; prerequisite/concurrent: MKT 201.

MCM 225 Theories of Mass Communication (3-0-3). Introduces students to the various prevailing communication theories, including agenda setting, uses and gratification, and diffusion constructs. Prerequisite: MCM 150.

MCM 231 Writing for Mass Communication (3-0-3). Introduces students to writing in a professional mass media environment and to the specific forms of writing used in the mass media. Includes news stories for print and broadcast, advertising copy for print and broadcast, and various types of writing for public relations. Prerequisites: MCM 100 or DES 100, and MCM 150. Lab/Tech fee rate A applies.

MCM 241 Media and Professional Presentations (3-0-3). Explores the range of presentation techniques needed by advertising, public relations and other media professionals. Includes advanced oral presentation skills, scripting and representational technology. Prerequisite: MCM 231.

MCM 255 Principles of Advertising (3-0-3). Provides students with an analysis of commercial advertising from a global perspective with attention to communication theory. Examines the structure of advertising messages, how they are adapted to specific audiences and the social settings in which they occur. Explores issues of Internet advertising and e-commerce. Prerequisite: MCM 231; prerequisite/concurrent: MKT 201.

MCM 265 Principles of Public Relations (3-0-3). (Formerly MCM 227). Surveys the fundamentals and techniques involved in public relations operations, including the history, philosophy and ethics of the practice and functions of management, planning, research and communication. Explores the theoretical and practical applications of public relations in contemporary society. Prerequisite: MCM 231.

MCM 275 Principles of Journalism (3-0-3). Introduces students to the basic principles of journalism as it occurs in a variety of media forms. Discusses the history of journalism, from the penny press, yellow journalism and muckraking to modern responsible journalism and tabloid journalism. Discusses a variety of legal and ethical

journalistic concerns. Covers writing techniques for newspapers, radio and television broadcast news. Prerequisite: MCM 231.

MCM 281 Principles of Media Production and Performance (3-0-3). Surveys a variety of media production and performance techniques. Presents media elements, such as concept development, writing, supervision, performance, scheduling and execution of a variety of media formats. Discusses background information on the history of specific media, media theory and aesthetics. Prerequisite/concurrent: MCM 231. Lab/Tech fee rate B applies.

MCM 300 Mass Communication Research Methods (3-0-3). (Formerly MCM 280). Introduces students to social science research methods within a mass communication context. Emphasizes the scientific method and surveys basic concepts of theoretical and empirical research. Covers a variety of methodologies, elementary statistics and criteria for adequate research. Prerequisites: MCM 225, MCM 231, and STA 202 or QBA 201 or NGN 111.

MCM 307 Film Criticism (3-0-3). (Formerly MCM 277). Introduces students to film genres and formulas (film noir, polyphonic narrative, comedy, romance, verities, etc.) and to critical approaches with which to analyze the cinematic text. Requires students to explore, discuss, research and write about films as well as screenplay texts, using such theoretical approaches as semiotics and structuralism, feminist, psychoanalytic, formalist and social criticism. Prerequisite: MCM 231.

MCM 320 Intercultural Communication (3-0-3). (Formerly MCM 220) (Cross-listed as ENG 320). Provides an overview of world cultural literacy and shows how cultures influence communication. Helps students acquire a broad knowledge about the interrelation of the humanities, music, mythology, art, theater, history and science. Prerequisite: ENG 203 or ENG 204.

MCM 321 Mass Communication Law and Ethics (3-0-3). Examines global legal issues affecting mass communication practices in advertising,

journalism and public relations. Introduces students to professional ethical theory and decision making, and corporate social responsibility. Prerequisite: MCM 255 or MCM 265 or MCM 275.

MCM 329 Mass Communication and Society (3-0-3). (Formerly MCM 229). Provides students with an overview of the effect of media on culture and society. Explores how media reflect and mold culture. Examines the role the media play in creating "the global village." Examines how the audience uses and is used by various media outlets and how that use affects the perception of various cultures. Prerequisite: MCM 225.

MCM 351 Advertising Copy and Layout (3-0-3). Explores issues, strategies, theories and practices in writing and editing advertising messages. Teaches the technical aspects of advertising: writing advertising copy and designing effective layouts based on clients' strategies, and elements of reproduction mechanicals. Teaches students how to embrace new technologies and design parameters to produce effective advertising. Considers audience differentiation, media strategy and creative strategy. Emphasizes persuasive and attention-getting techniques. Prerequisite: MCM 255. Lab/Tech fee rate A applies.

MCM 353 Direct Response Advertising (3-0-3). Introduces students to marketing communication that achieves an action-oriented objective as a result of the advertising message sent through a number of media, including telemarketing, direct mail and point-of-purchase. Prerequisite: MCM 255. Lab/Tech fee rate A applies.

MCM 354 The Internet and Marketing Communication (3-0-3). Introduces students to online marketing communication while bringing attention to the various strategies related to interactive advertising and communication. Explores issues related to research on the Internet, online marketing, e-mail marketing, webcasting and privacy. Prerequisite: MCM 255. Lab/Tech fee rate A applies.

MCM 360 Crisis and Conflict Management (3-0-3). Provides

practical insights into ways communication professionals recognize and manage organizational crisis and conflict, and ways of planning, executing and evaluating damage control mechanisms. Prerequisite: MCM 255 or MCM 265 or MCM 275.

MCM 361 Case Studies in Public Relations (3-0-3). Teaches students how to apply the principles and theories of public relations to solve problems or initiate opportunities for actual occurrences in the practice of public relations. Prerequisite: MCM 265.

MCM 369 Public Relations Writing (3-0-3). (Formerly MCM 269). Introduces students to the essentials of how to prepare and present written material for use in the practice of public relations. Teaches students the techniques needed for creating effective written communication at a standard generally expected of persons entering into the practice of public relations. Prerequisite: MCM 265.

MCM 370 Broadcast Journalism (3-0-3). (Formerly MCM 306). Introduces students to the basic principles of broadcast journalism as it occurs in radio, TV and online (webcasting). Includes discussions of technological, ethical and legal issues affecting broadcast news, as well as lab/studio practice in writing and producing broadcast reels. Prerequisite: MCM 275. Lab/Tech fee rate A applies.

MCM 371 News Writing (3-0-3). Builds students' expertise in the writing of news for newspapers and magazines. Gives students concentrated practice in the methods of research, interviewing, writing, marketing and publishing of articles, and in the skills required in the production of newspapers. Prerequisite: MCM 275.

MCM 374 Feature Writing (3-0-3). Teaches students how to plan, write and edit news features, personality profiles, issue-oriented articles and human impact stories for the print media. Emphasizes narrative, descriptive, analytic and storytelling skills. Includes one-on-one instructor-student conferences that stress story-building and revision techniques. Prerequisite: MCM 275.

MCM 375 Editing for the Print Media (3-0-3). Provides students with practical exposure to skills in preparing and editing manuscripts for publications. Emphasizes a number of editing styles and employs appropriate editing symbols. Prerequisite: MCM 275.

MCM 377 Photojournalism (3-0-3). Teaches the technical basis of using a 35mm or digital camera to take photos for publication. Early lectures detail technical issues such as lens settings, shutter speed, lighting and composition. Students are then given weekly photojournalism assignments for the student newspaper. Requires access to a digital or 35mm camera. Prerequisite: MCM 255 or MCM 265 or MCM 275. Lab/Tech fee rate B applies.

MCM 378 Literature as Film (3-0-3). (Cross-listed as ENG 378). Introduces students to the critical terms and techniques used in both film and literary fiction, examining the ways of conveying meaning that both film and literature employ. Focuses on the attempts to translate literary classics to the medium of film, and evaluates reasons for success and/or failure of these attempts. Prerequisite/concurrent: ENG 203 or ENG 204.

MCM 380 Persuasive Communication (3-0-3). Teaches students a comprehensive and critical treatment of theory and research in persuasion. Discusses attitudes, behaviors/actions, functional approaches to attitude, belief-based models of attitude, cognitive dissonance theory, theories of behavioral intention, campaign strategies, message factors, receiver and context factors, and persuasive effects. Prerequisite: MCM 255 or MCM 265 or MCM 275.

MCM 383 Organizational Communication and Leadership (3-0-3). (Formerly MCM 363). Teaches students the role of communication in creating a productive organizational environment in terms of interpersonal and group behavior. Reviews the theory and practice of team building, conflict resolution and problem solving and explores how communication and organizational cultures relate to each other. Prerequisite: MCM 255 or MCM 265 or MCM 275.

MCM 393 Shakespeare on Film (3-0-3). (Cross-listed as ENG 393). Uses an interdisciplinary approach (incorporating English literature and media/film studies) to teach how to synthesize elements of film theory and literary criticism and incorporate them into a series of research papers. Prerequisite: ENG 203 or ENG 204.

MCM 401 Media Publications (3-0-3). (Formerly MCM 301). Introduces students to producing and editing techniques for public relations for a variety of publications, including brochures, business reports, newsletters, corporate videos, etc. Builds students' proficiency in the art of copy preparation, typography, graphic design, layout and desktop publishing. Prerequisite: MCM 255 or MCM 265 or MCM 275. Lab/Tech fee rate A applies.

MCM 410 Media Producing and Project Management (3-0-3). Discusses media producing and its individual components of media supervision, operational management, contact and freelance personnel management. Focuses on project management as well as discussions on audience/marketing and advertising revenue. Covers broadcast management, scheduling and budgeting. Prerequisite: MCM 281. Lab/Tech fee rate B applies.

MCM 411 Multiple Camera Studio Production (3-0-3). Introduces students to multiple camera and studio production techniques. Emphasizes practical knowledge of basic video and cinema production techniques from the viewpoint of the producer. Requires students to develop and write multiple camera scripts in a variety of formats such as live news, game show and drama. Focuses on a variety of producing skills regarding supervision of crew and talent. Prerequisite: MCM 281 or MUM 310 or VIS 310. Lab/Tech fee rate B applies.

MCM 431 Strategic Communications Research (3-0-3). (Formerly MCM 451). Expands on basic knowledge and skills introduced in MCM 300 and principles courses to prepare students to use relevant research methods essential to strategic contributions in advertising and public relations campaigns. Emphasizes designing and developing

research projects. Prerequisites: MCM 255 or MCM 265 or MCM 275, and MCM 300.

MCM 453 Advertising Media Planning (3-0-3). Examines media planning, buying and sales as performed by advertising agencies, clients and media. Teaches students to evaluate and select advertising media for various market situations. Examines target audience, media characteristics and data sources. Prerequisite: MCM 255. Lab/Tech fee rate A applies.

MCM 454 Case Studies in Advertising (3-0-3). Exposes students to major issues in advertising, with a focus on the characteristics of successful ad campaigns. Examines international and cross-cultural problems in advertising within and across industry, government and institutions. Prerequisite: MCM 255.

MCM 455 Advertising Campaigns (3-0-3). Requires students to collaborate on a semester-long project that includes the conception, research, development and execution of real-life advertising campaigns. Emphasizes advanced copywriting and layout and production concerns for print, broadcast and new media. Requires students to organize, manage and perform all functions: soliciting business, conducting market and consumer research, contacting clients, writing plans, creating advertising campaigns, evaluating media and preparing campaign evaluations for community service agencies. Prerequisites: MCM 351 and MCM 453.

MCM 463 International Public Relations (3-0-3). Helps students develop the skills necessary to plan and implement international public relations programs, taking into account social, economic, political, legal and cultural factors. Prerequisite: MCM 361.

MCM 465 Public Relations Campaigns (3-0-3). Functions as a full-service public relations firm, requiring students to embark on a semester-long PR project that uses all the relevant skills gained in other MCM courses. Prerequisites: MCM 361 and MCM 369.

MCM 467 Public Relations for Non-Profit Organizations (3-0-3). Explores fund-raising techniques, alumni

relations and foundation management. Prerequisite: MCM 361.

MCM 469 Advanced Public Relations Writing (3-0-3). Offers advanced public relations students experience in the wide range of writing styles and applications that are essential for students to successfully begin their professional career. Focuses on understanding and mastering action-oriented communication methods and best professional practices. Provides both a conceptual framework and in-depth training in advanced techniques. Prerequisite: MCM 369.

MCM 470 Writing and Reporting for Broadcast News (3-0-3). Examines broadcast news writing, with emphasis on practical experience and exercises involving real or simulated airtime. Students are assigned beats and topics and are expected to regularly create scripts and at least three news packages by the end of the semester. Prerequisite: MCM 370. Lab/Tech fee rate B applies.

MCM 471 Advanced News Writing (3-0-3). (Formerly MCM 372). Teaches students how to write carefully researched stories, using writing, reporting and interviewing skills acquired in previous classes. Emphasizes immersion or in-depth reporting; students spend a great deal of time with a subject to develop skills in storytelling and organization. Prerequisite: MCM 371.

MCM 472 Editorial and Critical Writing (3-0-3). Teaches the basics of writing editorials, op-eds and columns, including analyzing arguments, generating ideas, researching supporting data, assessing and engaging the audience, structuring the article, writing concisely, controlling style voice and tone appropriate to subject matter and audience, and writing to meet deadlines. Prerequisite: MCM 371.

MCM 473 Writing for Multimedia (3-0-3). Offers advanced students hands-on experience with writing and producing shorter-form texts for electronic media. Studies comparative perspectives of writing for radio, television, Internet and CD-ROM texts. Covers generating ideas, writing proposals, research and development

of topics, planning and employing the stylistic conventions of professional writers in the field. Teaches the distinctive competencies of writing for each medium and of working from concepts to actual productions. Prerequisites: MCM 231 and MCM 281. Lab/Tech fee rate A applies.

MCM 475 Writing and Producing for Documentaries (3-0-3). Exposes students to representative documentaries with regard to history, form, technique, trends and audience objectives. Examines different formats used in documentary production and the concepts used in transforming research efforts into production of a full half-hour program. Emphasizes genre-specific research methodologies, planning a production schedule, interviewing skills, videotape shooting, sound, scriptwriting and rewriting for longer form reports, sound and video editing, graphics and post-production. Prerequisites: MCM 231.

MCM 480 Critical Analysis of the Mass Media (3-0-3). (Formerly MCM 450). Examines the uses of critical theory and specific methodological approaches in the study of mass media. Considers sources of influence in society and the implications of media production and consumption. Prerequisite: MCM 300.

MCM 481 International Mass Communication (3-0-3). (Formerly MCM 461). Helps students gain an understanding of world mass media systems: what they are like; how they operate; what impact they have on people; what policies are and could be used by the various countries to develop or regulate them; and how they are influenced by a country's political, economic, social and cultural make-up. Prerequisite: MCM 329.

MCM 485 Integrated Marketing Communication Campaigns (3-0-3). Examines all aspects of integrated marketing communication (IMC) campaigns. Covers research, strategy planning, creative planning, media planning and pitching. Requires collaborative work focused on developing and executing an IMC campaign. Prerequisites: MCM 351 and MCM 453, or MCM 361 and MCM 369.

MCM 490 Senior Project (3-0-3). Requires faculty-supervised student projects in special topics of current interest. Requires both oral and written presentations on the topics. Prerequisites: Junior II standing and approval of instructor.

MCM 491 Print Media Project (3-0-3). (Formerly MCM 477). Requires students to conceptualize, write, develop, manage and produce a multimedia campaign using a variety of forms (e.g., print, broadcast, web-based, etc.). The semester-long project culminates in discrete, marketable productions as well as a coherent campaign, thus providing each student with a writer-producer's portfolio and demo reel to present to prospective employers as the student embarks on a career as a media professional. Prerequisite: MCM 275. Lab/Tech fee rate A applies.

MCM 497 Mass Communication Internship (0-0-0). Provides MCM students with a minimum of six weeks (normally 240 hours) of on-the-job training and experience with a professional firm in either advertising creativity, sales, advertising media, writing and/or editing for print and/or electronic media. Students are expected to find their own placement for this requirement. Graded as Pass/Fail. Prerequisites: Junior II standing and approval of internship coordinator. Registration fee applies.

MTH Mathematics

MTH 001 Preparatory Mathematics for Engineers (3-2-4). Preparatory for MTH 103 Calculus I. Emphasizes the basic skills and techniques of algebra and trigonometry. Explores real and complex numbers, basic arithmetic, equations and inequalities, study of functions, polynomial and rational functions, exponential and logarithmic function, trigonometric functions and introduction to limits. Students are allowed to repeat a preparatory course up to Sophomore I standing (less than 45 credits). Prerequisite: Engineering Math Placement Test with grade less than D.

MTH 002 Preparatory Business Mathematics (3-0-3). Preparatory for MTH 101 Mathematics for Business. Covers integers and variable expression, fractions, decimals and real numbers, basic algebraic operations, equations and inequalities, functions and graphs, polynomial and rational functions, and exponential and logarithmic functions. Students are allowed to repeat a preparatory course up to Sophomore I standing (less than 45 credits).

MTH 003 Preparatory Mathematics for Architects (3-0-3). Preparatory for MTH 111 Mathematics for Architects. Covers basic ideas and concepts of arithmetic, algebra, geometry and trigonometry and calculus applications needed for architecture and design. Students are allowed to repeat a preparatory course up to Sophomore I standing (less than 45 credits).

MTH 004 Pre-Calculus (3-0-3). Preparatory for MTH 103. Covers graphs and functions, exponential and logarithmic function and their graphs, trigonometric functions of real numbers and angles, analytic trigonometry and introduction to limits. Students are allowed to repeat a preparatory course up to Sophomore I standing (less than 45 credits). Prerequisite: Engineering Math Placement Test with grade D.

MTH 100 Fundamentals of Logic and Geometry (3-0-3). Covers logic and set theory, geometry in the plane and space, and basic algebra. Includes the following topics: fundamentals of inductive and deductive reasoning; propositional and first order logic; sets, relations and functions; Euclidean and analytical geometries in two and three dimensions; and linear transformations and quadratic forms. Not open to architecture, engineering, interior design, science and School of Business and Management students.

MTH 101 Mathematics for Business I (3-0-3). Covers coordinate systems and graphs, matrices, linear systems and applications, elementary linear programming, set theory, counting techniques, permutations and combinations, introduction to probability, and the mathematics of finance. Emphasizes techniques and applications. Prerequisite: MTH 002 or

any AUS math placement test or SAT II Math 1C test with score 600 and above.

MTH 102 Mathematics for Business II (3-0-3). Covers the derivative, rules for differentiation and their applications, definite and indefinite integrals, methods of integration and applications, functions of more than one variable, partial differentiation and applications to optimization. Emphasizes techniques and applications. Not open to science or engineering students. Prerequisite: MTH 101.

MTH 103 Calculus I (3-1-3). Covers functions and limits; differentiation of algebraic, logarithmic, exponential, trigonometric and inverse trigonometric functions; applications of derivatives including maxima and minima, related rates, approximations, theory of integration with applications including areas, volumes, lengths, and surface areas. Includes a computer laboratory component. Prerequisite: MTH 001 or MTH 004 or Engineering Math Placement Test or SAT II Math 1C test with score 600 and above. Lab/Tech fee rate A applies.

MTH 104 Calculus II (3-1-3). Covers inverse functions, inverse trigonometric functions, hyperbolic functions, techniques of integration, improper integrals, infinite series, power series, parameterized curves, polar coordinates, integration in polar coordinates and complex numbers. Prerequisite: MTH 103.

MTH 111 Mathematics for Architects (3-2-4). Introduces the topics of geometry and calculus needed for architecture. Reviews trigonometry, areas and volumes of elementary geometric figures, and the analytic geometry of lines, planes and vectors in two and three dimensions. Covers differential and integral calculus, including applications on optimization problems, and areas and volumes by integration. Includes a computer laboratory component. Restricted to architecture and interior design students. Prerequisite: MTH 001 or MTH 004 or MTH 003 or Architecture Math Placement Test or Engineering Math Placement Test or SAT II Math 1C test with score 600 and above. Lab/Tech fee rate A applies.

MTH 203 Calculus III (3-1-3). Covers calculus of functions of several variables, vectors and analytic geometry of three-dimensional space, partial derivatives, gradients, directional derivatives, maxima and minima, multiple integrals, line and surface integrals, Green's theorem, divergence theorem and Stokes' theorem. Includes a computer laboratory component. Prerequisite: MTH 104.

MTH 205 Differential Equations (3-0-3). Covers mathematical formulation of ordinary differential equations, methods of solution and applications of first order and second order differential equations, power series solutions, solutions by Laplace transforms and solutions of first order linear systems. Prerequisite: MTH 104.

MTH 211 Geometry for Art and Architecture (3-0-3). Introduces the relation between geometry and architecture. Focuses on the use of geometrical concepts in art and architecture. Includes the following topics: sculpture and ancient Greek geometry; Egyptians and the geometry of the pyramids; basic geometric constructions; use of proportion in art, symmetry and isometry; Euclidean geometry; and polygons. Not open to science and engineering students. Prerequisite: MTH 100 or MTH 102 or MTH 111 or MTH 103

MTH 213 Discrete Mathematics (3-0-3). (Cross-listed with CMP 213). Covers prepositional and predicate calculus, sets, functions and related algorithms, asymptotic analysis of functions, mathematical induction, recursive definitions, counting, relations, graphs, trees and Boolean algebra. Prerequisite: MTH 102 or MTH 103.

MTH 221 Linear Algebra (3-0-3). Covers systems of linear equation, algebra of matrices, linear transformations, determinants, vector spaces, inner product spaces, eigenvalues and eigenvectors, diagonalization and orthogonality, special matrices and applications. The use of computer software is essential. Prerequisite: MTH 104.

MTH 304 Mathematics of Finance (3-0-3). Covers interest measurement, pricing of annuities (due, immediate,

increasing, decreasing, geometric, with payments frequency smaller than the compounding period), amortization schedule, sinking fund method (with different remunerative and reproductive rate), yield rate, and bonds (pricing, book value, market value, flat price, bound amortization schedule, callable bounds). Introduces the basic principles of life table, life annuities and life insurance Prerequisite: MTH 102 or MTH 103 or MTH 111.

MTH 305 Life Contingencies (3-0-3). Provides a basic review of interest theory, life tables and population problems, life annuities (due, immediate, temporary, deferred, increasing, decreasing) with basic pension application, life insurance (pure endowment, term insurance, deferred insurance, n-year endowment insurance, varying), net single premium, annual premium and reserves and statistical considerations. Prerequisite: MTH 102 or MTH 103 or MTH 111.

MTH 311 Intermediate Analysis (3-0-3). Covers sets and the real number system, functions, mathematical induction, sequences and series, limits and continuity, uniform continuity, basic topology of the real number system, differentiation, Riemann integration, sequences and series of functions, and uniform convergence. Prerequisite: MTH 203.

MTH 312 Advanced Calculus (3-0-3). Provides an in-depth study of vector calculus including vector fields, Stieltjes integrals, the theory of integration of functions of two and three variables, divergence and Stokes' theorems, the inverse and implicit function theorems, as well as an introduction to the basic topology of Euclidean space, continuity and differentiation vector valued functions including linear operators on Euclidean space, and curves and surfaces. Prerequisite: MTH 203.

MTH 313 Number Theory and its Applications (3-0-3). Covers the Euclidean algorithm, linear congruencies and the Chinese Remainder Theorem, Fermat's Little Theorem, quadratic residues and quadratic reciprocity, Pythagorean triples and sums of squares. Includes applications in communication, public

key cryptography, computer arithmetic, random number generators and music. Prerequisite: MTH 213.

MTH 320 Modern Algebra with Applications (3-0-3). Covers Boolean algebra, groups, subgroups, cyclic groups, Lagrange's theorem, quotient groups, direct product of finite groups, rings, polynomial rings, fields, and in particular, finite fields, circuits, machines, coding and decoding. Prerequisite: MTH 221.

MTH 325 Coding Theory (3-0-3). Introduces coding theory, linear codes, Hamming codes, Hamming distances, Hamming weights, probability, Shannon's theorem, dual codes, weight distribution of linear codes, cyclic codes, BCH codes, convolution codes, encoding and decoding. Prerequisite/ concurrent: MTH 221.

MTH 330 Fundamental Concepts of Geometry (3-0-3). Describes elementary theory in foundations of geometry and logical systems, and basic theory in the fields of Euclidean, non-Euclidean and synthetic coordinate projective geometry, including homogeneous coordinates. Prerequisite: MTH 103 or MTH 111.

MTH 341 Computational Methods (3-0-3). (Cross-listed as CMP 341). Introduces the fundamentals of numerical algorithms and their application for scientific computing. Includes topics such as error analysis, root finding, interpolation and function approximations, integration and differentiation, optimization techniques and linear programming. Prerequisite/ concurrent: MTH 221.

MTH 343 Numerical Analysis I (3-0-3). Introduces numerical approximation techniques including topics such as error analysis, root finding, interpolation, function approximations, numerical differentiation, numerical integration and numerical solutions of initial value problems. Prerequisite: MTH 221.

MTH 350 Introduction to Probability (3-0-3). Introduces probability spaces, axioms of probability, combinatorial counting techniques for discrete probability spaces, conditional probability and independent events; random variables, univariate and

multivariate probability density functions expectation; variance and higher moments and moment generating functions. Prerequisite: STA 201; prerequisite/concurrent MTH 203.

MTH 351 Methods of Applied Mathematics (3-0-3). Introduces a broad range of mathematical tools used to solve scientific and engineering problems. Includes the following topics: Fourier analysis, integral transforms, calculus of variation, special functions and coordinate systems. Discusses applications problems, including mechanical structures, electrical circuits, fluid mechanics, continuum mechanics and geometry. Prerequisite: MTH 205.

MTH 360 Probability and Stochastic Processes (3-0-3). (Cross-listed as COE 360, ELE 360 and STA 360). Covers set theory, preliminaries of probability theory and random variables, stochastic processes, spectral characteristics, applications to systems, Markov chains and queueing theory. Prerequisites: NGN 111 or STA 201, and ELE 323 or MTH 351 or prerequisite/concurrent: ELE 321.

MTH 382 Linear Programming and Optimization (3-0-3). Introduces optimization theory and methods, nonlinear unconstrained optimization, linear programming, sensitivity analysis, various algorithms and search methods for optimization and their analysis. Provides examples from various disciplines. Prerequisite: MTH 221.

MTH 412 Complex Variables (3-0-3). Studies functions of a complex variable, algebra of complex numbers, elementary functions with their mapping properties, analytic functions, power series, integration, Cauchy's Theorem, Laurent series and residue calculus, elementary conformal mappings and boundary value problem. Prerequisite: MTH 203.

MTH 418 Graph Theory (3-0-3). Covers graphs and sub graphs, connected and disconnected graphs, matrices, trees and girth, planar and nonplanar graphs, graph embeddings, connectivity and edge connectivity, Hamiltonian graphs, matching, factorization and coverings, networks and applications to science and engineering. Prerequisite: MTH 213 or CMP 213.

MTH 420 Advanced Modern Algebra (3-0-3). Introduces group homomorphisms and isomorphism, classification of Abelian finite groups, Sylow theorems, ring homomorphisms, factorization of polynomials, unique factorization domains, field extensions and, in particular, cyclotomic field extensions and Galois's theory. Prerequisite: MTH 320.

MTH 431 Dynamical Systems (3-0-3). Examines the second order differential equations in phase plane, linear systems and exponential operators, canonical forms, stability of equilibria. Lyapunov functions, autonomous systems, the existence of periodic solutions and applications to various fields. Prerequisites: MTH 205 and MTH 221.

MTH 432 Partial Differential Equations (3-0-3). Covers mathematical formulations and solutions of partial differential equations of physical problems, includes the wave, heat and Laplace's equation. The mathematical tools include Fourier transform, Fourier series and Laplace transform. Prerequisite: MTH 205.

MTH 443 Numerical Analysis II (3-0-3). Introduces techniques and concepts of numerical analysis. Includes the following topics: direct and iterative methods for solving linear systems, and numerical methods for non-linear system of equations, initial and boundary value problems and partial differential equations. Prerequisite: MTH 341 or CMP 341 or MTH 343.

MTH 490 Senior Project (0-6-3). Provides individualized study in which a student conducts research on a topic not specifically covered in other courses under the supervision of a faculty member with expertise in that area. Prerequisite: senior standing and consent of instructor.

MUS   Music

MUS 101 Fundamentals of Music I (3-0-3). Introduces fundamentals in the theory of Western music. Relates theory to musical literature. Includes notation, rhythm, modes and aural comprehension. Synthesize theoretical skills in rudimentary composition.

MUS 151 Choral Ensemble I (1-4-3). Studies, rehearses and performs a variety of choral literature. Includes required participation in a scheduled public performance. Prerequisite: consent of instructor based on audition.

MUS 200 Introduction to European Classical Music (3-0-3). Introduces to the history and development of music within the European Classical tradition and its impact on culture worldwide. Examines the chronological development and the factors involved in the evolution of musical thought and experience. Prerequisite: WRI 102.

MUS 201 History and Development of Jazz (3-0-3). Surveys the history and development of jazz as a unique American art form, with emphasis on the musical, sociological, folk and non-Western backgrounds of jazz, as well as the contribution of jazz as an art form. Examines the individual contribution of the pioneers, innovators and practitioners of this art form. Prerequisite: WRI 102.

MUS 202 Survey of World Music (3-0-3). Studies music as a world phenomenon with emphasis on its relationship to culture, indigenous customs, function and significance. Focuses on important figures, instruments and theories, but equally on music's ethical and social dimensions. Prerequisite: WRI 102.

PHI   Philosophy

PHI 201 Introduction to Philosophy (3-0-3). Introduces basic questions, ideas and methods of philosophy. Discusses philosophers selected from various historical periods. Encourages and teaches students to develop a philosophical mind. Prerequisite: WRI 102.

PHI 202 Introduction to Islamic Philosophy (3-0-3). Surveys the major philosophers in Islam, focusing on religious doctrines interacting with philosophical traditions. Discusses the relationship between Islamic and Western philosophy. Prerequisite: WRI 102.

PHI 204 Ethics for Professionals (3-0-3). Examines the ethical character

of professional life. Develops a background for ethical judgment, and awareness of one's own viewpoint. Both historical sources and contemporary case studies may be used. Not open to computer science students. Prerequisite: WRI 102.

PHI 206 Ethics and Information Technology (3-0-3). Examines the ethical questions raised by our life with information technology. Develops a background for ethical judgment, and awareness of one's own viewpoint. Both historical sources and contemporary case studies may be used. Prerequisite: WRI 102.

PHI 303 Political Philosophy (3-0-3). Introduces the fundamental questions of how a polity should be structured. Emphasizes the justifications for fundamental decisions in shaping political orders. Both historical and contemporary readings apply. Prerequisite: POL 202 or PHI 201.

PHI 304 Themes in Western Thought (3-0-3). Explores selected themes from the history of Western thought with relevance in the present. Makes clear how ideas shape culture and inform life far into the future. Emphasizes the relationship between Western thought and the students' lives. Prerequisite: ENG 203 or ENG 204.

PHI 305 Advanced Social Political Philosophy (3-0-3). Concentrates on advanced issues in social political philosophy and offers a normative approach to social political issues from a historical perspective that allows students to understand better contemporary debates. Concentrates on a specific issue (e.g., equality, personal liberty, human rights, property rights, etc., depending on the year and instructor) and explores its significance in detail. Prerequisite: PHI 303.

PHI 309 Ethics and the Environment (3-0-3). Explores the philosophical dimensions of how we are related to the environment. Studies why, or whether, life on Earth should be respected. Reflects on the philosophy of nature. Prerequisite: ENG 203 or ENG 204.

PHY   Physics

PHY 001 Preparatory Physics (3-0-3).
Provides students with problem-solving skills and development using algebra, trigonometry, and calculus through the study of elements of kinematics (motion in one and two dimensions) and dynamics (Newton's laws, momentum, work and energy). Required for science and engineering students with an insufficient background in physics. Students are allowed to repeat a preparatory course up to Sophomore I standing (less than 45 credits).

PHY 100 Conceptual Physics (3-0-3).
Gives non-science and non-engineering majors an understanding of the basic concepts of physics without complex mathematics. Emphasizes conceptual understanding of physical phenomena, firmly grounded in the scientific methods. Covers simple elements of mechanics, waves and light, electricity and magnetism, atoms and nuclei. Not open to engineering and science students. Prerequisite/concurrent: MTH 001 or MTH 002 or MTH 003 or MTH 004 or MTH 100 or any AUS math placement test.

PHY 101 General Physics I (3-0-3).
Introduces the fundamental principles, laws and concepts of mechanics to students of science and engineering. Covers mechanics (kinematics in one and two dimensions; Newton's laws of motion with applications; work and energy; conservation of energy and momentum; general rotation, including torque and angular momentum; static equilibrium) as well as some introductory material on mechanical waves (simple harmonic motion). Prerequisite: PHY 001 or PHY Placement Test; prerequisites/concurrent: MTH 103 and PHY 101L.

PHY 101L General Physics Laboratory I (0-3-1). Provides the students with the opportunity to perform experiments that demonstrate the principles and laws of mechanics. Includes experiments on kinematics; Newton's laws of motion with friction and other forces; work and energy; conservation of momentum; rigid body rotational inertia; torque; static equilibrium; and simple harmonic motion. Prerequisite/ concurrent: PHY 101. Lab/Tech Fee rate A applies.

PHY 102 General Physics II (3-0-3). Builds upon General Physics I. Covers electricity (electric fields, including Gauss's law; electric potential; capacitors and resistors; DC circuits), magnetism (sources of the magnetic field, including Ampere's law; induction, including Faraday's law and Lenz's law), and alternating current circuits, as well as introductory material on electromagnetic waves. Prerequisites: PHY 101 and PHY 101L; prerequisite/concurrent: PHY 102L.

PHY 102L General Physics Laboratory II (0-3-1). Trains students how to use new equipment and perform experiments with it that demonstrate their understanding of the basics of electricity and magnetism. Experiments include charge of the electron, electric field mapping, Ohm's law, Wheatstone bridge, power transfer, Kirchhoff's rules, RC circuit, force on a current-carrying wire in a magnetic field, magnetic field due to a circular loop, and the charge-to-mass ratio of the electron. Prerequisite/concurrent: PHY 102. Lab/Tech Fee rate A applies.

PHY 103 Astronomy (3-0-3). Presents a broad view of descriptive astronomy without complex mathematics. Introduces and familiarizes the students with basic astronomical facts and phenomena that one can observe, study and explain using scientific methods. Consists of studying the night sky, using celestial coordinates, understanding the motion of heavenly bodies, familiarizing oneself with the tools of astronomers, reviewing the solar system, understanding what stars are and how they evolve, and getting a general overview of galaxies and the universe.

PHY 104 Physics for Architects (3-0-3). Teaches selected set of algebra-based topics in physics to students of architecture. Topics covered Include: elements of mechanics (kinematics and dynamics); optics (geometrical as well as interference); sound (including general principles of acoustics, such as the propagation, transmission, attenuation and reverberation of sound); heat and energy. Not open to engineering and science students. Not open for students who have taken PHY 101. Prerequisite/concurrent: MTH 101 or MTH 103 or MTH 111.

PHY 105 Physics for Environmental Sciences (3-0-3). Introduces environmental science majors to the basic concepts of physics as they apply to environmental problems. Covers elements of fluid mechanics (fluid flow, Bernoulli's equation), electricity and magnetism (high voltages, electric power, transmission), optics (light dispersion, interference), atomic physics (Bohr model, atomic and molecular structure, absorption and emission, X-rays) and radioactivity. Considers some specific applications in the general areas of energy processes. Restricted to environmental science students. Prerequisites: PHY 101 and PHY 101L.

PHY 105L Physics for Environmental Sciences Laboratory (0-3-1). Provides students with the opportunity to perform experiments that demonstrate the principles and laws underlying phenomena in environmental physics. Includes experiments on fluid mechanics (buoyancy, Archimedes' principle and viscosity), electricity and magnetism (electron charge, the charge to mass ratio e/m of the electron, and magnetic force on a current-carrying conductor), light and optics (prism spectrometer and Young's double-slit) and modern physics (the photoelectric effect and radioactivity). Prerequisite/concurrent: PHY 105. Lab/Tech Fee rate A applies.

PHY 106 General Physics III (3-0-3). Covers fluid mechanics (pressure, buoyant force, the continuity equation and Bernoulli's equation), basics of oscillatory motion (simple harmonic motion and damped and forced oscillations), mechanical waves (waves on a string, sound waves, the Doppler effect, standing waves, resonance and beats), thermodynamics (temperature, heat and heat engines, the laws of thermodynamics and the kinetic theory of gases), and light and optics (laws of geometric optics, image formation and basics of interference). Prerequisites: PHY 101 and PHY 101L.

PHY 106L General Physics III Laboratory (0-3-1). Comprises a selected set of experiments illustrating the principles, laws and concepts discussed in PHY 106. Includes experiments on fluid mechanics (buoyant force and viscosity), oscillatory motion (simple pendulum and the mass-spring system), mechanical waves (speed of sound), thermodynamics (specific heat and thermal expansion of metals) and optics (laws of reflection, Snell's law, the spherical mirror and lens-maker's equations and Young's double-slit experiment). Prerequisite/concurrent: PHY 106. Lab/Tech Fee rate A applies.

PHY 201 Modern Physics (3-0-3). Deals with special relativity, introductory quantum mechanics, nuclear physics, elements of solid state and semi-conductor physics. Recommended for engineering majors, particularly electrical and computer engineering. Prerequisites: PHY 102 and PHY 102L, or PHY 105 and PHY 105L.

PHY 201L Modern Physics Laboratory (0-3-1). Provides students with the chance to perform experiments that demonstrate the ideas of 20th century physics. Includes e/m ratio of the electron, the photoelectric effect, Frank-Hertz experiment, spectrometer, fluorescence of a luminous screen by x-rays, Young's double slit and light interference, X-ray diffraction (Bragg Reflection), hall effect, the wave model of light vs. the quantum model (h/e) experiment, and absorption of Beta and Gamma rays. Prerequisite/concurrent: PHY 201. Lab/Tech Fee rate A applies.

PHY 232 Properties of Matter (3-0-3). Provides a thorough and technical overview of the physical properties of matter to students with a background in basic physics. Includes the following topics: states of matter, classes of materials, atomic bonding, structural properties of matter, X-ray diffraction, experimental diffraction methods (simulation), imperfections in solids, atom movements and diffusion, mechanical properties of matter and electrical properties of matter. Prerequisites: PHY 102 and PHY 102L.

PHY 251 Meteorology (3-0-3). Deals with general weather phenomena and overviews the physical processes involved including atmospheric pressure, laws of thermodynamics, general air circulation, atmospheric moisture, energy, laws and phenomena of radiation, and heat transfer. Covers violent phenomena (storms and hurricanes) and important current event topics (meteorological control, weather forecasting, air quality and pollution, global warming and the El Nino oscillation phenomenon). Required for environmental physics majors but also very useful to other environmental science majors and engineering students. Prerequisites: PHY 101 and PHY 101L.

PHY 301 Energy Sources (3-0-3). Examines energy from a physics perspective. Examines present and future alternative energy sources, including hydroelectric, nuclear, solar, geothermal and tidal energy. Investigates the problems caused by each energy source and the issue of sustainability. Recommended for environmental science majors and engineering students. Prerequisites: PHY 102 and PHY 102L, or PHY 105 and PHY 105L.

PHY 303 Atmospheric Physics (3-0-3). Deals with applications of thermodynamics, radiation theory, optics and mechanics to atmospheric phenomena: composition, origin and structure; atmospheric processes; extra-tropical synoptic scale disturbances; cloud microphysical processes; radiation transfer and trapping; energy balance; and atmospheric dynamics. Prerequisites: PHY 105 and PHY 105L, or PHY 106 and PHY 106L.

PHY 304 Issues in Environmental Physics (3-0-3). Examines current environmental issues from a physical perspective, including nuclear waste disposal and contamination, nuclear radiation and shielding, electromagnetic radiation and its effects, ozone depletion and global warming. Prerequisites: PHY 102 and PHY 102L, or PHY 105 and PHY 105L.

PHY 305 Modern Optics and Lasers (3-0-3). Provides a modern introduction of ray and wave optics and laser physics to students with a background in modern physics and electricity and magnetism. Covers the propagation of light (waves, phase and group velocities, and the Doppler Effect), the vectorial nature of light (electromagnetic fields, the Poynting vector, polarization, reflection and refraction), coherence and interference, optical spectra and light amplification (stimulated emission, population inversion and lasers). Prerequisite: PHY 201.

PHY 313 Satellites and Space Physics (3-0-3). Covers topics that prepare and allow the student to understand the latest developments, discoveries and trends in space science and technology. Emphasizes the relevance and application of various physical principles and laws (mechanics for orbits and electromagnetism for communication, signal detection and processing, energetics, and image processing for remote sensing, etc.) Focuses on practical applications and tools in this field. Prerequisites: PHY 102, PHY 102L and PHY 103.

PHY 401 Physics of Semiconductors (3-0-3). Covers the basics of semiconductor devices. Provides a general introduction to semiconductors (crystal structures, crystal symmetry, crystal growth techniques), carrier modeling (band structures, effective masses, density of states, carrier distribution, and carrier concentration), carrier action (mobility, resistivity, band bending, diffusion, recombination), pn junction diodes (build-in potential, step-junctions, boundary value solution using Poisson's equations, I-V characteristics) and optoelectronic devices (solar cells and LEDs). Designed for students with a thorough understanding of general physics and some exposure to quantum phenomena. Prerequisite: PHY 201.

POL   Political Science

POL 201 Introduction to Political Studies (3-0-3). Introduces the science of politics and examines the nature of government and public policymaking. Focuses on the processes of government, including public administration, foreign policy and international relations. Prerequisite: WRI 102.

POL 202 Introduction to International Relations (3-0-3). Aims to acquaint students with the main stages of the evolution of international relations as a discipline since 1945, which can be seen as an ongoing debate about the explanatory value of one particular theory—Realism. Gives a profound introduction to theories of international relations as well as a theory-based introduction to foreign policy analysis. Analyzes the different schools of international relations theory as well as their respective critiques. Prerequisite: POL 201.

POL 208 Introduction to American Government (3-0-3). Surveys American government and examines the essential elements of the US political system. Covers such areas as the Constitution, Congress, the presidency, the judiciary and the electoral system. Discusses the nature of American democracy and examines such topics as federalism, culture, public opinion, political parties, interest groups, elections and the media. Prerequisite: WRI 102.

POL 300 Comparative Politics (3-0-3). Introduces students to key themes, theories and debates in comparative politics. Examines these topics either in the context of the developed or the developing world, depending on the instructor's choice. Provides students with an overview of the historical, political, economic and ideational dynamics that have shaped the states and societies of the developed and developing worlds. Prerequisite: POL 202.

POL 302 Law and Diplomacy (3-0-3). Introduces students to the core concepts of the law and legal philosophy and explores the relationship between the law and political dynamics. Explores the changing functions of the state and how they were manifest in law and diplomacy. Introduces students to the concept of the diplomatic and consular law, and its sources and scope. Prerequisite: POL 201.

POL 304 International Organizations (3-0-3). (Cross-listed as SOC 304). Introduces the structure and function of international organizations and their role in economic, political, military, cultural or humanitarian relations among nation-states. Selected organizations such as the United Nations, NATO, OPEC and the WTO are examples. Prerequisite: POL 202.

POL 305 Public International Law (3-0-3). Examines substantive international law, including the Law of the Seas, crimes against humanity, environmental law, the Geneva accords, international treaties, regional treaties, the Charter of the United Nations and trade agreements. Analyzes selected legal institutions such as the International Court of Justice in The Hague and other tribunals dealing with international disputes. Prerequisite: POL 202.

POL 307 Wars, Conflicts and Diplomacy (3-0-3). Introduces the causes of war and other levels of violent international conflict, and the efforts that nations and international organizations make to avoid them. Includes an examination of the techniques of diplomacy that have been utilized, historically speaking, in these attempts to avoid wars and violent conflicts. Emphasizes concepts of national self-interest, realpolitik, just and unjust wars, non-interference with internal sovereign issues and nuclear weapons issues. Analyzes case studies of specific wars and considers various theories for controlling potential future flare-ups and real international conflict situations. Prerequisite: POL 202.

POL 308 American Foreign Policy (3-0-3). Examines the evolution and impact of American foreign policy. Studies the major issues in past and current US foreign policy, with a focus on the historic debates that have shaped American international conduct and their relevance to today's politics. Studies the processes of American foreign policy and examines the various factors in both the domestic and international contexts that have shaped and currently shape foreign policy initiatives. Gives particular attention to the sources of basic American policies during the past half century, along with a focus on the various theoretical approaches to explanation. Examines the pressing issues of today, particularly those pertaining to the Middle East and the West. Prerequisites: POL 201, and POL 202 or POL 208.

POL 309 The American Political System (3-0-3). Aims to provide students with an understanding of the nature of the American political system, its constitutional framework, its principles and practice. Focuses on the constitutional system of separated powers and checks and balances, and examines the dynamics of American politics, the interaction between its various political actors, and the relationships between the institutions of the presidency, congress and courts as "rivals for power." Provides students with a better appreciation of the workings of the American political system and the issues that are essential to American political life. Prerequisites: POL 201, and POL 202 or POL 208.

PSY   Psychology

PSY 101 General Psychology (3-0-3). Explores topics such as research methods, the nature of psychological phenomena, physiological bases of behavior, life-span development, altered states of consciousness, sensation, perception, learning, conditioning, memory, language, thinking, motivation, emotion, personality, individual differences, conflict and stress, abnormal behavior, therapeutic techniques and social psychology. Prerequisite/concurrent: WRI 101.

PSY 102 Social Psychology (3-0-3). Introduces the scientific study of social behavior and social influences on behavior. Focuses on the study of how our behaviors, thoughts and emotions are affected by the real or imagined presence of other people. Presents theories and research on such topics as attitude change and persuasion, stereotypes and prejudice, conformity and obedience to authority, altruism, conflict, interpersonal attraction and friendship. Prerequisite/concurrent: WRI 101.

PSY 210 Scientific Method in Psychology (3-0-3). Explores various methods within the social sciences that have transformed our understanding of human thought and behavior; contrasts the most common methods and explores their strengths and limitations; provides

skills in seeking sources of scientific information; introduces basic concepts for data analysis and provides hands-on training with common applications; guides students through research projects, emphasizing the process of study design and material creation. Prerequisites: PSY 101 and WRI 102; prerequisite/concurrent: STA 202 or STA 201 or NGN 111 or QBA 201.

PSY 301 Abnormal Psychology (3-0-3). Covers different theoretical approaches and empirical studies of causes, symptoms and treatment of abnormal 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; and how such disorders arise from subtle interactions between organic or psychological predisposition. Prerequisite: PSY 210.

PSY 302 Developmental Psychology (3-0-3). Explores how human psychology changes over time; considers various factors in development from conception until death, including biological, cognitive, social and cultural influences; periods of emphasis may include infancy, childhood, adolescence or adulthood. Prerequisite: PSY 210.

PSY 303 Health Psychology (3-0-3). Takes a multi-disciplinary approach (psychology, sociology, anthropology and biology) to present the current research and controversies to explore the mind-body connection: how psychological and behavioral factors influence health and illness and how illness impacts the psyche. Prerequisite: PSY 210.

PSY 304 Personality Psychology (3-0-3). Provides students with a comprehensive overview of the role of personality in psychology. Develops and engages the critical thinking skills that are characteristic of behavioral scientists. Examines contemporary theories and explores the critique of social constructionists. Demonstrates the understanding of human behavior, drawing on phenomenology and personal construct theory. Prerequisite: PSY 210.

PSY 305 Cognitive Psychology (3-0-3). Provides students with a comprehensive overview of the role of cognition in psychology. Develops and engages the critical thinking skills that are characteristic of behavioral scientists. Explores the basics of cognitive psychology through the coverage of cognitive neuroscience, attention and consciousness, perception, memory, knowledge representation, language, problem solving and creativity, decision making and reasoning, cognitive development and intelligence. Prerequisite: PSY 210.

PSY 306 Organizational Psychology (3-0-3). (Formerly PSY 205). Develops and engages the critical thinking skills that are characteristic of behavioral scientists. Demonstrates the theories and application of psychology in the workplace with the following topics: psychology at work, establishing a strong workforce, social organization, and solving human problems of work. Prerequisite: PSY 210.

PSY 401 Psychology of Bilingualism (3-0-3). Explores a psychological perspective on the relationship between language and thought. Addresses the questions of what happens in our brain when we speak, read or write. Explores how we learn language and how we learn a second language. Investigates whether our language influences the way we think. Discusses whether the ability to speak more than one language changes our perception of the world. Presents an argument about whether we can make computers understand and produce human speech, and more generally, explores how a study of the psychological aspects of language processing can contribute to the creation of the Artificial Intelligence. Prerequisite: PSY 302 or PSY 304 or PSY 305.

SOC   Sociology

SOC 201 Introduction to Sociology (3-0-3). Surveys the discipline and provides a foundation for other sociology courses. Introduces some of the major concepts, theories and research findings of sociology. Considers topics such as education, race and ethnicity, organizations, the mass media, poverty and social deviance. Prerequisite: WRI 102.

SOC 220 American Society (3-0-3). Examines how American society is shaped by such social forces as race, class and gender. Considers additional topics such as immigration past and present, social movements, citizenship and democracy, and social control and deviance. Prerequisite: WRI 102.

SOC 302 Environmental Sociology (3-0-3). (Formerly SOC 202). Examines how societies adapt to and transform their physical environment. Considers topics such as sustainable development, environmentalism as a social movement, public policy and urban sprawl. Prerequisite: WRI 102.

SOC 304 International Organizations (3-0-3). (Cross-listed as POL 304). Introduces the structure and function of international organizations and their role in economic, political, military, cultural or humanitarian relations among nation-states. Considers selected organizations such as the United Nations, NATO, OPEC and the WTO. Prerequisite: POL 202.

SOC 380 Urban Sociology (3-0-3). Explores changing urban life in different cultural, social and historical settings. Examines both classic and contemporary debates within urban sociology. Considers topics such as social segregation, urban planning, homelessness, urban development and public service delivery. Prerequisite: WRI 102.

STA   Statistics

STA 201 Introduction to Statistics for Engineering and Natural Sciences (3-1-3). Explores descriptive statistics, probability distributions, experimental design and sampling, estimation, hypothesis testing, analysis of variance, regression analysis and correlation, analysis of categorical data and the use of statistical computer software. Not open to SBM students in the BSBA degree program. Prerequisite:

MTH 103 or MTH 111. Lab/Tech fee rate A applies.

STA 202 Introduction to Statistics for Social Sciences (3-1-3). Introduces acquisition and development of statistical methods that are commonly used in social sciences. Covers techniques for classification of data, descriptive statistics, probability distributions, sampling techniques, estimation, hypothesis testing, analysis of variance, categorical data analysis, simple regression and correlation, and the use of statistical computer software. Not open to SBM students in BSBA degree programs. Prerequisite: MTH 100 or MTH 101 or MTH 103 or MTH 111. Lab/Tech fee rate A applies.

STA 360 Probability and Stochastic Processes (3-0-3). (Cross-listed as COE 360, ELE 360 and MTH 360). Covers set theory, preliminaries of probability theory and random variables, stochastic processes, spectral characteristics, applications to systems, Markov chains and queueing theory. Prerequisites: NGN 111 or STA 201, and ELE 323 or MTH 351 or prerequisite/concurrent: ELE 321.

THE   Theatre

THE 101 Theatre Appreciation (3-0-3). Introduces fundamentals of theatre, history, plays, playwriting, movement and expression, acting and production. Explores the historical context of the development of Western Drama, and applies practical understanding of those elements. Explores theories related to each specific element.

THE 102 Dramatic Process (3-0-3). Explorers the speech, movement and improvisational techniques used to create dramatic expression and effective stage communication. Includes interactive ensemble performances.

THE 150 Play Production I (6-0-3). Provides a "hands-on" experience turning a dramatic script into a theatre performance. Employs rehearsal and performance techniques used in professional production. Includes a research paper on the historical period of the productions, as well as in-depth character analysis papers. Emphasizes

text study, warm-up, reading, blocking, audience-actor relationships, incorporation of director's guidance and the nuances of creating a character. Prerequisite: consent of instructor based on audition.

THM   Theme

THM 310 Social Science Analysis of Environmental Issues I (3-0-3). Provides students with a broad overview of social science issues related to the use of environmental and natural resources. Provides an overview of current and historical environmental trends; a framework of environmental policy analysis; and an overview of environmental law, environmental ethics, special interest group politics, and the role of political and economy systems in determining environmental quality. Prerequisite: junior standing.

THM 311 Social Science Analysis of Environmental Issues II (3-0-3). Uses the analytical tools and background studied in THM 310 to address specific environmental and natural resource problems. Addresses the environmental problems of global climate change, acid rain, ozone depletion, solid waste disposal, water resources, energy resources, fisheries, forests and biodiversity, among others. Prerequisite: THM 310.

TRA   Translation and Interpreting

TRA 210 Introduction to Translation (3-0-3). (Formerly TRA 101). Aims to familiarize students with the field of translation and the skills necessary to work as successful translators. Emphasizes a problem-solving approach, supported by text analysis (both in the pre-translation phase and in subsequent editing and evaluation). Practical tasks will involve translation into and out of English and Arabic. Prerequisite/concurrent: WRI 101.

TRA 220 Theoretical and Practical Issues in Translation (3-0-3). (Formerly TRA 201). Views translation

practice as seen in the light of various theories and models of translation. Invokes theories informed by modern linguistics, cultural studies and literary criticism with the aim of sensitizing the translator to the intricacies of the task. Assesses and examines at various levels of language organization (word level, sentence level, text level, pragmatics, etc.) the key notion of "equivalence." Examines issues such as the translation of metaphor and idiomatic expressions, dealing with meaningful repetition and biased translation shifts. Prerequisite: WRI 102.

TRA 230 Translating Arabic Literary Texts (3-0-3). Introduces basic theories of literary translation and applies them to a selection of Arabic literary texts from different genres. Covers linguistic and non-linguistic (cultural) dimensions of literary translation. Highlights the role of literary translation in human interaction. Prerequisite: WRI 102.

TRA 301 Modern Media Translation (3-0-3). Focuses on those modes and situations that relate to the translation of the print media. Includes the processing and translation of advertisements, news reports, magazine articles, public relations and promotional literature, and publicity materials within a framework of media translation studies. Prerequisites: TRA 210 or TRA 220, or ARA 101 and MCM 150.

TRA 303 Interpreting: Focus on the Community (3-0-3). (Formerly TRA 203). Introduces interpreting and distinguishes this skill from translation. Prepares students for interpreting through nurturing the ability to understand and analyze a message in the source language and convey it in the target language in a straightforward and clear manner. Develops the basic skills of liaison interpreting, with special emphasis on community interpreting (doctor-patient, court, official transactions, etc.) Prerequisite: TRA 210. Lab/Tech fee rate B applies.

TRA 401 Translation Evaluation and History (3-0-3). Explores the conceptual map of translation studies and reflects on important points in the history of translation. Emphasizes both Western and Eastern translation traditions and the role of translation in

the development of culture and identity. Introduces translation evaluation, and develops rigorous assessments schemes. Prerequisite: TRA 210.

WST   Women's Studies

WST 240 Introduction to Women's Studies (3-0-3). Provides an introduction to women's studies, its perspectives and its interdisciplinary nature. Emphasizes feminist analysis and critical thought as a way of making knowledge. Draws on history, literature, popular culture and the arts to analyze the forces that shape women's lives and examine women's position in culture and society. Prerequisite: WRI 102.

WST 250 Women's Voices Across Cultures (3-0-3). Examines debates surrounding the genre of autobiographical writing by women across cultures. Considers the aspirations, frustrations and achievements of women as documented in their own words. Explores the ways in which language and representation in various cultures shape subjectivity, challenge and redefine the boundaries of the autonomous self. Prerequisite: WRI 102.

WRI   Writing Studies

WRI 001 Fundamentals of Academic Discourse (3-0-3). (Formerly COM 001). Introduces students to basic strategies for university success with particular emphasis on reading and writing skills. Aids students in developing goal setting, time management and study skills while reading and responding to university texts. Helps students become familiar with the conventions of academic writing through reading and writing activities. Includes contextualized grammar instruction. Students are allowed to repeat a preparatory course up to Sophomore I standing (less than 45 credits).Prerequisite: EPT score less than 4.

WRI 101 Academic Writing (3-0-3). (Formerly COM 101). Challenges students to recognize, understand and produce academic writing.

Requires students to practice strategies for reading academic material by responding to texts in both formal and informal writing assignments and classroom discussion. Helps students enhance their writing skills through use of the writing process, and develop the necessary grammar and mechanical skills for written English proficiency through contextualized grammar instruction. Students are allowed to repeat WRI 101 up to Junior I standing (less than 75 credits). Prerequisite: EPT score of 4 or WRI 001.

WRI 102 Writing and Reading Across the Curriculum (3-0-3). (Formerly COM 102). Focuses on the development of active reading, critical thinking and analytical writing. Requires students to practice critical reading strategies by engaging with challenging and academically diverse texts and responding through formal and informal critical evaluations. Helps students develop their academic writing skills by identifying and fulfilling the requirements of supporting an academic thesis, as well as address issues of grammar and mechanics within the context of their writing. Introduces students to basic research techniques. Students are allowed to repeat WRI 102 up to Junior I standing (less than 75 credits). Prerequisite: EPT score of 5 or WRI 101.

WRI 221 Peer Tutoring in Writing (3-0-3). (Formerly WRI 29401). Focuses on issues and theories of writing and peer-collaboration as they relate to peer tutoring in writing. Involves readings and class discussion that help students think critically about writing and the teaching and tutoring of writing. Explores the views of different writers towards their craft, writers as individuals, issues of writing in a second language, and the role of "talking" in writing. Prepares students for the second part of the course in which they prepare for possible roles as Writing Center Tutors or Writing Fellows. Focuses largely on "hands-on" learning as students observe writing center tutorials, experience teaching each others, and comment on sample papers. Prerequisite/concurrent: ENG 203 or ENG 204.

Independent Study

Independent study is the umbrella term used to label two types of independent work: independent course and directed study.

Students are allowed to take one independent study. A second independent study could be approved by the student's associate dean for graduation purposes only.

Independent Course (1 to 4 credits). A course listed in the catalog but offered in an independent study format. The course is coded using the course number in the catalog.

Directed Study (1 to 4 credits). An investigation under faculty supervision beyond what is offered in existing courses. Prerequisites: minimum CGPA of 3.0, Junior II standing and consent of the instructor.

Directed study courses are numbered as 396 or 496 courses. The three-letter course prefix reflects the field of study of the course (e.g., independent study courses in Arabic are coded as ARA 396 or ARA 496).

For more details, please refer to Registration in Independent Study Courses in the Academic Policies and Regulations section of this catalog.

Special Topics Courses

Special Topics (1 to 4 credits). Presents a theoretical or practical topic proposed by the faculty beyond what is offered in existing courses. Can be repeated for credit. Prerequisites: topic specific. Lab/tech fee may apply.

Special topic courses are numbered as 194, 294, 394 or 494 courses. The three-letter course prefix reflects the field of study of the course.

Special topics courses at the 300 level require sophomore standing or above; 400-level special topic courses are restricted to junior standing and above.

Descriptions of particular special topics courses are made available in the college/school offering the course during registration.

College of Engineering

ASE — Aerospace Engineering

ASE 350 Introduction to Aerospace Engineering (3-0-3). Gives an overview of aerospace engineering, airplane and the atmosphere. Examines the basic aerodynamics; airfoils and wings; lift and drag; aerodynamics moments, circulation, boundary layers, and skin friction. Covers the performance or aircrafts: level flight, climb, range, endurance, takeoff and landing. Introduces stability and control, structures and materials, principles of propulsion of flight vehicles and space flight. Prerequisites: MCE 222, MCE 223, MCE 240 and MCE 241, or MCE 300.

ASE 415 Aircraft Stability and Control (3-0-3). Covers reference frames, equations of motion for a rigid body, forces and moments, trim, linearization, dynamic response characteristics for aircrafts and spacecrafts. Includes aircraft stability derivatives, static longitudinal and lateral stability, handling qualities, phugoid, short period, spiral, roll subsidence, Dutch roll modes and the corresponding transfer functions. Prerequisite: ASE 350.

ASE 454 Thermal Design Issues for Aerospace Systems (3-0-3). Deals with processes, systems, instruments and equipment for aerospace systems. Emphasizes issues of energy conversion and thermal design. Includes the following topics: thermodynamic concepts and heat transfer processes for aerospace systems, the space environment, influence of gravity on heat transfer, power generation for space systems (energy sources, solar cell arrays, energy storage), thermal control (analysis techniques, design procedures, active versus passive design, heating and refrigeration) and environmental effects. Prerequisite: ASE 350.

ASE 470 Aircraft Structures (3-0-3). Examines the characteristics of aircraft structures and materials; stress strain relationships in two and three dimensions; torsion, bending and flexural shear in thin-walled sections; buckling and fatigue analysis of thin wall structures; analysis of composite laminates; introduction to aeroelasticity and energy methods. Prerequisite: ASE 350.

ASE 475 Aircraft Design (3-0-3). Covers the theory, background and methods of aircraft design. Integrates aerodynamics, structure, propulsion, flight dynamics and control in the design of aircrafts. Prerequisites: ASE 415, ASE 470 and MCE 482.

ASE 486 Compressible Flow (3-0-3). Applies basic thermodynamics and fluid mechanics equations to model the flow phenomena of compressible fluids. Includes the following topics: reversible flow, flow with heat transfer, flow with friction, normal and oblique shock waves, diffuser and nozzle flow. Prerequisite: ASE 350.

BME — Biomedical Engineering

BME 210 Biomedical Ethics (1-0-1). Applies ethical principles and decision-making processes to selected problems in medicine, health care and biotechnology. Gives special attention to end-of-life choices, reproductive rights and technologies, organ transplantation, research ethics, genetic engineering and allocation of scarce resources. Focuses on social, legal, economic and scientific issues in ethical decisions in medicine. Prerequisites: BIO 101 and WRI 102.

BME 410 Biomedical Systems Modeling I (3-0-3). Introduces and applies engineering principles including biomechanics, fluid mechanics, heat transfer, chemical reaction kinetics and materials science to model physiological systems and solve medical problems. Prerequisite/concurrent: BIO 210.

BME 411 Biomedical Systems Modeling II (3-0-3). Applies principles of kinetics and mass transfer to model physiological systems including pharmacokinetics, membrane transport, renal filtration and gas exchange to design medical devices. Prerequisite/concurrent: BME 410.

BME 420 Biomedical Electronics I (3-0-3). Covers biomedical sensors and instrumentation, biopotential electrode, chemical and clinical biosensors, bioelectric phenomena, the electrocardiograph, the electroencephalograph, blood pressure and cardiac output measurements, and electrical safety. Prerequisite: ELE 225 or ELE 341.

BME 421 Biomedical Electronics II (3-0-3). Covers pulmonary system measurements, blood gas analysis, clinical laboratory instrumentation, biomedical optics and lasers, and therapeutic and prosthetic devices and systems. Prerequisite: BME 420.

BME 422 Biomedical Imaging (3-0-3). Covers imaging techniques, including ultrasound imaging, x-ray imaging, computerized tomography, magnetic resonance imaging, microwave imaging, thermal imaging and nuclear imaging. Covers the following for each of the addressed imaging techniques: radiation propagation and interaction with materials, generation and detection, and image construction and reconstruction. Covers radiation protection. Prerequisite: ELE 225 or ELE 341.

BME 430 Biomechanics (3-0-3). Presents the fundamentals of orthopedic biomechanics and the application of solid mechanics toward describing physiological systems. Emphasizes the interaction between biomechanical and physiologic factors (bone, connective tissue and muscle and joint physiology and structure) in the musculoskeletal system and application of engineering principles in clinical practice. Prerequisite: CHE 230 or MCE 222 or MCE 224 or MCE 225.

BME 431 Biomaterials (3-0-3). Provides an overview of materials used in biomedical applications, both internal and external to the human body. Covers structure and properties of biomaterials

in addition to material performance in hostile environments. Prerequisite: BME 410 or BME 430.

BME 432 Biothermofluids (3-0-3). Discusses the fluid and thermodynamics principles underlying the operation of physiological systems, including the heart and circulatory system and the lungs and pulmonary system. Prerequisite: BME 410 or BME 430.

BME 440 Bioinformatics (3-0-3). Discusses elementary topics in bioinformatics. Includes the basics of molecular genetics, the biological aspects of bioinformatics, data searches, algorithms for pairwise alignments and substitution patterns. Prerequisites: BIO 210, and ELE 360 or COE 360.

CHE   Chemical Engineering

CHE 205 Principles of Chemical Engineering I (1-2-2). Introduces the analysis of chemical process systems using mass conversion equations, stoichiometry and steady state calculations. Covers unit conversions and process flow sheets. Introduces ideal and real gas relationships. Prerequisite: CHM 101; prerequisites/concurrent: MTH 104 and NGN 111.

CHE 206 Principles of Chemical Engineering II (2-2-3). Covers the application of energy balances to chemical engineering equipment and processes. Includes the following topics: steady state energy balances with and without chemical reactions, heat of solution and mixing, humidity charts and simultaneous material and energy balances. Prerequisite: CHE 205; prerequisite/concurrent: CHM 102.

CHE 215 Fluid Flow (3-0-3). Explores introductory concepts of fluid mechanics and fluid statics, fluid properties, basic equations of fluid flow, flow of compressible and incompressible fluids in pipes and other shapes, velocity distribution, laminar and turbulent flow, flow past immersed bodies and dimensional analysis. Prerequisites: PHY 101, PHY 101L and CHE 205; prerequisite/concurrent: MTH 203.

CHE 230 Materials Science (2-3-3). Introduces material science, relationships between structure and properties of materials. Includes the following topics: atomic bonding, crystalline structures, crystal defects and imperfections; phase diagrams and equilibrium microstructural development; and properties of engineering materials. Prerequisite: CHM 101. Lab/Tech fee rate B applies.

CHE 240 Computer Methods in Chemical Engineering (2-2-3). Covers the use of modern computational techniques and software to solve chemical engineering problems. Includes the following numerical techniques: solution of linear and nonlinear algebraic equations, ordinary differential equations, and numerical integration and differentiation. Introduces chemical process simulation. Prerequisite: CHE 205; prerequisites/concurrent: MTH 205 and MTH 221. Lab/Tech fee rate B applies.

CHE 303 Chemical Engineering Thermodynamics I (2-2-3). Studies first, second and third law of thermodynamics and their application in chemical engineering; volumetric properties of pure fluids; definitions and use of internal energy, enthalpy, entropy and free energy; Maxwell relations; ideal and real cycles and processes; refrigeration and liquefaction. Prerequisites: CHE 206 and MTH 203.

CHE 304 Chemical Engineering Thermodynamics II (3-0-3). Examines thermodynamic properties of fluids and mixtures, residual properties, excess properties, phase equilibria and chemical reaction equilibria for gases and liquids. Prerequisite: CHE 303.

CHE 307 Heat Transfer (3-0-3). Covers mechanism of heat transfer; heat transfer by conduction, convection and radiation; and analysis of heat transfer equipment used in chemical engineering. Prerequisites: CHE 206, CHE 215 and MTH 205.

CHE 321 Chemical Reaction Engineering (3-0-3). Examines chemical reaction kinetics, interpretation of experimental rate data, design of batch and continuous reactors, effect of temperature and pressure, and heterogeneous catalysis. Prerequisite:

CHE 240; prerequisites/concurrent: CHE 307 and CHM 331.

CHE 329 Mass Transfer (3-0-3). Covers mechanisms of mass transfer, laws of diffusion, mass transfer coefficients, theories of mass transfer, and mass transfer and chemical reactions. Prerequisite/concurrent: CHE 307.

CHE 332 Engineering Economy (3-0-3). Covers topics in finance and economics involved in the design of chemical processes and equipment: time value of money, depreciation, profitability, evaluation of alternatives, replacement and capital analysis. Prerequisite: junior standing.

CHE 342 Separation Processes (3-0-3). Examines application of mass transfer principles to the design of multi-stage systems and countercurrent differential contacting operations. Prerequisite: CHM 215; prerequisites/concurrent: CHE 304 and CHE 329.

CHE 350 Transport Phenomena Laboratory I (0-3-1). Covers experiments in fluid flow, heat transfer, and thermodynamic measurement and analysis of devices. Includes experimental design, safety, and report writing. Prerequisites: NGN 111. Prerequisites/concurrent: CHE 303 and CHE 307. Lab/Tech fee rate B applies.

CHE 397 Professional Training in Chemical Engineering (0-0-0). Requires a minimum of five weeks of approved professional experience. Work undertaken must be documented in a formal report to the department by the beginning of the following term. Graded as Pass/Fail. Prerequisite: Junior II standing and approval of internship coordinator for the major. Registration fee applies.

CHE 421 Chemical Process Dynamics and Control (3-0-3). Examines principles of process dynamics and control in chemical engineering applications; transfer functions; block diagrams; input disturbance; frequency response and stability criteria; single and multi-loops; P, PI and PID controllers; and process control software. Prerequisites/concurrent: CHE 321 and CHE 342.

CHE 432 Process Design Safety and Economics (3-0-3). Covers the

application of chemical engineering principles to the design and integration of chemical equipment and processes. Includes the following topics: process safety, pollution prevention and waste minimization, plant economics and cost estimation. Prerequisites: CHE 321 and CHE 342; prerequisite/concurrent: CHE 332.

CHE 434 Petroleum Refining Processes (2-2-3). Presents an overview of petroleum refining processes. Includes the following topics: introduction to petroleum, its origins and composition, basic principles of refining, the effect of feedstock on refinery design, selection of refinery units, design of major equipment and refinery economics. Prerequisite: CHM 215; prerequisite/concurrent: CHE 342. Lab/Tech fee rate B applies.

CHE 436 Natural Gas Processing (3-0-3). Provides basic and applied knowledge in natural gas processing. Includes the following topics: characterization of natural gas and its products, phase behavior of natural gas, water-hydrocarbon phase behavior, prevention of hydrate formation, gas sweetening, gas dehydration using glycol, gas dehydration using solid dessicants, natural gas liquids recovery, sulfur recovery and design and sizing of equipment. Prerequisite/concurrent: CHE 432.

CHE 451 Transport Phenomena Laboratory II (0-3-1). Comprises hands-on laboratory experiments illustrating the application of chemical engineering principles and calculations: mass transfer equipment, reaction kinetics and reactor design. Includes experimental design, safety and report writing. Prerequisites: CHE 321 and CHE 350; prerequisite/concurrent: CHE 342. Lab/Tech fee rate B applies.

CHE 452 Unit Operations and Control Laboratory (0-3-1). Covers laboratory experiments illustrating various applications of chemical engineering principles and calculations in process control and physical and chemical separation. Includes experimental design, safety and report writing. Prerequisite: CHE 350; prerequisite/concurrent: CHE 421. Lab/Tech fee rate B applies.

CHE 461 Air Pollution (3-0-3). Covers environmental pollution; acid gas removal; sulfur oxides, nitrogen oxides and carbon gases removal; removal of volatile organic compounds; design of main process equipment and control devices; and aerosols. Prerequisite/concurrent: CHE 342.

CHE 467 Corrosion (2-3-3). Examines electrochemical principles; galvanic cell; Nernst equation; electromotive force; corrosion mechanisms and techniques; corrosion due to dissimilar metal, differential aeration, strain and temperature; corrosion types, cavitation, fatigue, microorganisms; corrosion prevention, inhibitors, electrical protection; and corrosion case studies in petroleum industry. Prerequisite: CHM 101. Lab/Tech fee rate B applies.

CHE 470 Waste Management and Control in Chemical Engineering (3-0-3). Covers management and control of gaseous, liquid and solid wastes; regulation and management procedures; waste minimization and resource recovery; and separations and reaction engineering approaches. Prerequisite/concurrent: CHE 342.

CHE 472 Water and Wastewater Treatment Design (2-2-3). Covers design and selection of biological, physical and chemical processes used in water and wastewater treatment, disposal of treated effluent, water quality, and industrial wastewater characterization. Prerequisite/concurrent: CHE 329. Lab/Tech fee rate B applies.

CHE 481 Fundamentals of Biomedical Engineering (3-0-3). Uses chemical engineering principles including fluid mechanics, heat transfer, kinetics and material science to model physiological systems and solve medical problems. Prerequisite/concurrent: CHE 307.

CHE 490 Senior Design Project I (1-2-1). Requires a supervised design project of defined chemical engineering significance. Work includes data collection, analysis, calculation, design and presentation of the work in a detailed technical report. Students must present and defend their project in oral presentation. Current practices in the chemical engineering field are discussed through guest lectures. Prerequisite/concurrent: CHE 432.

CHE 491 Senior Design Project II (0-6-2). Continues the work of CHE 490. Prerequisite: CHE 490.

CHE 495 Chemical Engineering Seminar (1-0-1). Introduces leading-edge practices in the chemical engineering field through guest lectures. Graded as Pass/Fail. Prerequisite: senior standing.

CMP Computer Science

CMP 110 Visual Basic (2-2-3). Introduces programming using Visual Basic. Includes the following topics: event-driven programming concepts, GUI design (using forms, labels, textboxes, buttons, listboxes, etc.), functions and procedures, and arrays. Emphasizes writing database applications using a relational DBMS. Not open to junior and senior students in computer science or computer engineering. Lab/Tech fee rate A applies.

CMP 120 Introduction to Computer Science I (2-3-3). (Cross-listed as COE 210). Provides an overview of computer architecture and programming. Examines elements of a C++ program, statements and expressions, data types, relational and logical operators, conditional and iterative control structures. Examines, file I/O, declaration and initialization of arrays and strings, pointers and function arguments. Covers program design and testing, and modular programming. Includes laboratory and programming assignments. Prerequisite: NGN 110. Lab/Tech fee rate A applies.

CMP 210 Digital Systems (3-3-4). Covers number systems, Boolean algebra, analysis and design of combinational circuits, minimization techniques, analysis and design of sequential circuits, and introduction to computer design. Prerequisite: CMP 120 or COE 210. Lab/Tech fee rate A applies.

CMP 213 Discrete Structures (3-0-3). (Cross-listed as MTH 213). Covers propositional and predicate calculus, sets, major classes of functions and related algorithms,

asymptotic analysis of functions, principle of mathematical induction, proof techniques, recursive definitions, counting, relations, graphs and trees. Prerequisite: MTH 103.

CMP 220 Introduction to Computer Science II (2-3-3). (Cross-listed as COE 211). Covers object-oriented programming concepts: constructors, destructors, objects, classes, functions and attributes, operator overloading and overriding, inheritance and polymorphism. Explores abstraction principles (interfaces, information hiding, encapsulation), templates, exception handling, I/O streams and advanced pointers. Uses the C++ programming language in laboratory work. Prerequisite: CMP 120 or COE 210; prerequisite/concurrent: MTH 103. Lab/Tech fee rate A applies.

CMP 235 Ethics for Computing and Information Technology (3-0-3). (Equivalent to PHI 206). Examines ethical theories and ethical decision-making models applied for computing and information technology. Offers in-depth discussion of social, ethical and professional issues in computing, including the codes of ethics of computing professional societies; intellectual property defined by copyright, patent and trade secrets; privacy; confidentiality; conflict of interest; cybercrime; hacking; viruses; and identity theft. Prerequisite: WRI 102.

CMP 240 Introduction to Computer Systems (3-3-4). (Cross-listed as COE 240). Examines hardware and software model of microprocessors; programming of microprocessors; memory systems, memory interface and memory access (DMA); input/output programming and interface; and design of microprocessors-based systems. Prerequisites: CMP 120 or COE 210 or MCE 234, and CMP 210 or COE 221. Lab/Tech fee rate B applies.

CMP 256 GUI Design and Programming (3-1-3). Covers the design and implementation of interactive 2D graphical user interfaces. Explores the event-driven paradigm and its application in GUI development. Examines multi-threading and exception handling. Covers widget layout, dialog construction and elementary

data visualization techniques. Covers essential functions such as drag-and-drop and basic graphics operations such as image I/O and 2D drawing. Addresses design, usability, standard interface building and cross-platform compatibility issues. Not open to computer engineering majors. Prerequisite: CMP220 or COE211. Lab/Tech fee rate A applies.

CMP 305 Data Structures and Algorithms (3-1-3). (Cross-listed as COE 311). Covers design and implementation of abstract data types, lists, stacks, queues and trees. Covers recursion and runtime stacks. Introduces the complexity of algorithms and data structures. Covers searching and sorting and basic graph algorithms. Laboratory work includes substantial programming assignments. Prerequisite: CMP 220 or COE 211; prerequisites/concurrent: CMP 256 or COE 312, and CMP 213 or MTH 213. Lab/Tech fee rate A applies.

CMP 306 Introduction to Programming and Data Structures (2-3-3). Introduces programming using an object-oriented language like Python or Java. Covers basic data structures and their applications, and elementary data structures lists, stacks, queues and trees). Not open to computer science and computer engineering majors. Lab/Tech fee rate A applies.

CMP 310 Operating Systems (3-1-3). (Cross-listed as COE 381). Introduces operating systems, process management, process scheduling, interprocess communications, memory management techniques, virtual memory, I/O management, deadlock avoidance, file system design and security issues. Employs examples of commonly used operating systems (e.g., Windows and UNIX). Prerequisites: CMP 305 or CMP 306 or COE 311, and CMP 240 or COE 240. Lab/Tech fee rate A applies.

CMP 320 Database Systems (3-1-3). (Cross-listed as COE 422). Introduces the basic principles of database management systems; data models, including conceptual and logical models; translation between data models; query languages; normalization of relations; and formal database design and database application development. Prerequisite: CMP 305 or CMP 306 or

COE 311. Lab/Tech fee rate A applies.

CMP 321 Programming Languages (3-1-3). Provides an overview of programming languages syntax and semantic definitions, language translators, language categories, and programming in a high-level language other than the one taken in CMP 120 or COE 210. Prerequisite: CMP 305 or CMP 306 or COE 311. Lab/Tech fee rate A applies.

CMP 340 Design and Analysis of Algorithms (3-0-3). Covers algorithmic analysis; algorithmic strategies; advanced searching and sorting algorithms; hashing, graph and spanning trees algorithms; topological sort; pattern matching; numerical algorithms; matrix operations; complexity classes; approximation algorithms; and basic computability theory. Prerequisites: CMP 305 or CMP 306 or COE 311, and STA 201 or NGN 111.

CMP 341 Computational Methods (3-0-3). (Cross-listed as MTH 341). Introduces the fundamentals of numerical algorithms and their application for scientific computing. Includes topics such as error analysis, root finding, interpolation and function approximations, optimization techniques and linear programming. Prerequisite/concurrent: MTH 221.

CMP 350 Software Engineering (3-1-3). (Cross-listed as COE 420). Introduces the basic principles and practices of software engineering. Emphasizes the different phases of the software development process and quality issues. Includes the following topics: software life cycle models; general design, implementation and testing issues; specification and design methodologies; model-based approaches to software design; project management; and the use of various design and development tools. Prerequisite: CMP 305 or CMP 306 or COE 311. Lab/Tech fee rate A applies.

CMP 352 Human Computer Interaction (3-0-3). Examines human behavior in relation to user interface design. Analyzes the conceptual models formed by users and evaluates user interface design. Examines multimedia interfaces; usability engineering; user interface design; and

project organization. Studies interface representation and user-centered prototyping tools. Examines a number of case studies. Requires a project. Prerequisite: CMP 305 or CMP 306 or COE 311.

CMP 397 Professional Training in Computer Science (0-0-0). Requires a minimum of five weeks of approved professional experience. Work undertaken must be documented in a formal report to the department by the beginning of the following term. Graded as Pass/Fail. Prerequisite: Junior II standing and approval of internship coordinator for the major. Registration fee applies.

CMP 412 Introduction to Distributed Systems (3-0-3). Covers the principles and practices underlying the design of distributed systems. Includes the following topics: concurrency, mutual exclusion, clock synchronization, logical time, election, consensus, global snapshot, resource allocation, consistency models and fault tolerance. Prerequisites: CMP 340, and CMP 310 or COE 381.

CMP 415 Introduction to Computer Networks (3-1-3). Introduces concepts in computer networks and network architectures. Includes the following topics: network reference models, circuit and packet switching, error control, data link layer, multiple access, wired LAN, network layer addressing, forwarding, routing, transport layer and application layer protocols. Not open to computer engineering majors. Prerequisites: CMP 310 or COE 381. Lab/Tech fee rate A applies.

CMP 416 Internet and Network Computing (3-1-3). Examines the Internet, its protocols and architecture; TCP/IP and Internet application protocols; designing Internet-based clients and servers; multi-tiered applications; network security and network management; distributed object computing; remote method invocation; emerging Internet technology standards such as XML and Web services; and building Internet-based applications. Prerequisites: CMP 310 or COE 381, and CMP 320 or COE 422. Lab/Tech fee rate A applies.

CMP 417 Parallel Computing Systems (3-0-3). Covers models of parallel computation; shared memory parallel machines; interconnection networks; parallel architectures; parallel algorithms, complexity and performance measures; parallel searching and sorting; parallel evaluation of expressions; issues of non-determinism, synchronization and deadlock; survey of parallel applications; and selected topics in the latest field developments. Prerequisites: CMP 240 or COE 240 and CMP 340.

CMP 432 Image Processing (3-0-3). Introduces basic techniques of analysis and manipulation of pictorial data by computer, digital image acquisition and formats, software-based image manipulation and enhancements in the spatial domain, frequency domain transformations and manipulations, lossless and lossy image compression, digital video coding and compressed domain processing. Prerequisites: CMP 305 or CMP 306 or COE 311, MTH 221, and NGN 111 or STA 201.

CMP 433 Artificial Intelligence (3-0-3). Introduces problems and techniques in artificial intelligence. Includes problem-solving methods; major structures used in artificial intelligence programs; study of knowledge representation techniques such as probabilistic reasoning, predicate and nonmonotonic logic; examples of expert systems; introduction to natural language understanding and various syntactic and semantic structures; and learning as a form of problem solving through problem decomposition and subparts interaction. Prerequisite: CMP 305 or CMP306 or COE 311.

CMP 434 Multimedia Compression (3-0-3). Covers the theory and applications of multimedia compression; presents information theory and its applications to compression; introduces lossless compression algorithms, such as statistical and dictionary based techniques; applies scalar and vector quantization to image and video compression; covers predictive coding and frequency domain transformations; and introduces international compression standards such as JPEG and MPEG. Prerequisites: CMP 305 or

CMP 306 or COE 311, MTH 221, and NGN 111 or STA 201.

CMP 435 Computer Security (3-0-3). (Cross-listed as COE 444). Covers a broad variety of topics in computer security. Includes the following topics: authentication and authorization, introduction and application of cryptography, social engineering attacks, physical security, network security, application security (web, e-mail), wireless security, operating system security, program security, security management, and ethical and legal issues in computer security. Prerequisite: CMP 310 or COE 370 or COE 381.

CMP 450 Object-Oriented Software Engineering (3-0-3). Explores object-oriented analysis and design. Covers topics in object-oriented analysis and design: object-oriented requirements capturing, modeling and refinement. Includes object-oriented design, design patterns and object-oriented testing. Requires students to complete a substantial object-oriented software project. Prerequisite: CMP 350 or COE 420.

CMP 451 Formal Specification Methods (3-0-3). Explores requirements elicitation and modeling using formal specification models and languages. Covers finite state automata, extended and communicating finite state machines, labeled transition systems, process algebra and Petri nets. Covers selected topics of the LOTOS, UML Statecharts and Z specification languages. Prerequisite: CMP 350 or COE 420.

CMP 452 Compiler Construction (3-0-3). (Cross-listed as COE 445). Analyzes issues associated with the implementation of high-level programming languages. Covers fundamental concepts, functions and structures of compilers, and basic program optimization techniques. Includes the following topics: parsing, abstract syntax representation, semantic analysis and code generation. Discusses run-time organization and various interpretive techniques to support execution of compiled programs. Prerequisite: CMP 305 or COE 311.

CMP 454 Software Testing and Quality Engineering (3-0-3). Provides an overview of software engineering. Covers software quality assurance; black-box and white-box testing; integration and regression testing; and selected topics from the following: object-oriented software testing, acceptance testing, conformance testing, diagnostic testing, test execution, distributed systems testing, test languages and test tools, GUI testing, interoperability testing, test metrics, and standards for software quality and testing. Prerequisite: CMP 305 or CMP 306 or COE 311; prerequisite/concurrent: CMP 350 or COE 420.

CMP 472 Multimedia Computing (3-0-3). Studies hardware and software components and processes involved in multimedia development. Covers digital representation and coding of multimedia building blocks (text, images, graphics, video and sound), hypertext and hypermedia concepts, compression and decompression techniques, multimedia authoring tools and building web applications. Includes selected multimedia applications. Prerequisite: CMP 310 or COE 381.

CMP 490 Project in Computer Science I (0-3-1). Includes faculty-supervised student projects on special topics of current interest. Requires students to give both oral and written presentations on the topics. Prerequisites: senior standing, and CMP 350 or COE 420.

CMP 491 Project in Computer Science II (0-6-2). Continues the work of CMP 490. Prerequisite: CMP 490.

COE Computer Engineering

COE 210 Programming I (2-3-3). (Cross-listed as CMP 120). Provides an overview of computer architecture and programming. Examines elements of a C++ program, statements and expressions, data types, relational and logical operators, conditional and iterative control structures. Examines file I/O, declaration and initializations of arrays and strings, pointers and function arguments. Covers program design and testing, and modular programming. Includes laboratory and programming assignments. Prerequisite: NGN 110. Lab/Tech fee rate A applies.

COE 211 Programming II (2-3-3). (Cross-listed as CMP 220). Covers object-oriented programming concepts: constructors, destructors, objects, classes, functions and attributes, operator overloading and overriding, inheritance and polymorphism. Explores abstraction principles (interfaces, information hiding, encapsulation), templates, exception handling, I/O streams and advanced pointers. Uses the C++ programming language in laboratory work. Prerequisite: COE 210 or CMP 120; prerequisite/concurrent: MTH 103. Lab/Tech fee rate A applies.

COE 221 Digital Systems (3-3-4). Covers number systems, representation of information, introduction to Boolean algebra, and combinational and sequential circuits analysis and design. Prerequisites: PHY 102 and PHY 102L. Lab/Tech fee rate A applies.

COE 240 Microprocessors (3-3-4). (Cross-listed as CMP 240). Examines hardware and software model of microprocessors; programming of microprocessors; memory systems, memory interface and memory access (DMA); input/output programming and interface; and design of microprocessors-based systems. Prerequisites: COE 210 or CMP 120 or MCE 234, and COE 221 or CMP 210. Lab/Tech fee rate B applies.

COE 311 Data Structures and Algorithms (3-1-3). (Cross-listed as CMP 305). Covers design and implementation of abstract data types, lists, stacks, queues and trees. Covers recursion and runtime stacks. Introduces the complexity of algorithms and data structures. Covers searching and sorting and basic graph algorithms. Laboratory work includes substantial programming assignments. Prerequisites: COE 211 or CMP 220; prerequisites/concurrent: COE 312 or CMP 256, and CMP 213 or MTH 213. Lab/Tech fee rate A applies.

COE 312 Software Design for Engineers (1-3-2). Covers basic software design patterns; implementation of communication interfaces including reading and writing, serial, parallel, synchronous and asynchronous streams and sockets; implementation of graphical user interfaces including menus, dialogs, windows, call-back functions and simple event-driven programming. Provides an overview of device drivers, persistence storage techniques and software component technologies. Not open to computer science majors. Prerequisites: COE 211 or CMP 220, and COE 240 or CMP 240. Lab/Tech fee rate B applies.

COE 341 Computer Architecture and Organization (3-0-3). Covers CPU organization and microarchitectural level design; RISC design principles; memory, peripheral devices and input/output busses; DSP processor architectures; and introduction to parallel computing. Prerequisite: COE 240 or CMP 240.

COE 360 Probability and Stochastic Processes (3-0-3). (Cross-listed as ELE 360, MTH 360 and STA 360). Covers set theory, preliminaries of probability theory and random variables, stochastic processes, spectral characteristics, applications to systems, Markov chains and queueing theory. Prerequisites: NGN 111 or STA 201, and ELE 323 or MTH 351 or prerequisite/concurrent ELE 321.

COE 370 Communications Networks (3-0-3). Examines the principles of communications networks. Includes the following topics: OSI and TCP/IP reference models, line coding, analog and digital modulation, transmission media, circuit and packet switching, telephony and DSL technology, datalink error and flow control, multiple access, LAN technologies and interconnections, network layer addressing and subnetting. Prerequisites: COE 221 or CMP 210, and MTH 104.

COE 371 Computer Networks I (2-3-3). Provides an overview of computer networks and the Internet, application layer services and protocols, transport layer services, principles of congestion control, network layer addressing, forwarding and routing, link layer protocols, addressing and multiple access, and VC networks (ATM, MPLS, Frame Relay, computer networks security). Prerequisite: COE 370. Lab/Tech fee rate B applies.

COE 381 Operating Systems (3-1-3).
(Cross-listed as CMP 310). Introduces operating systems, process management, process scheduling, interprocess communications, memory management techniques, virtual memory, I/O management, deadlock avoidance, file system design and security issues. Employs examples of commonly used operating systems (e.g., Windows and UNIX). Prerequisites: COE 311 or CMP 305 or CMP 306, and COE 240 or CMP 240.Lab/Tech rate A applies.

COE 397 Professional Training in Computer Engineering (0-0-0).
Requires a minimum of five weeks of approved professional experience. Work undertaken must be documented in a formal report to the department by the beginning of the following term. Graded as Pass/Fail. Prerequisite: Junior II standing and approval of internship coordinator for the major. Registration fee applies.

COE 412 Embedded Systems (2-3-3).
Examines micro-controllers hardware architectures and software models; instruction sets and programming; EPROM; EEPROM; inputs/outputs; ADC/DAC Interface and Programming; timer systems and interrupts; embedded systems building blocks, design and testing. Includes class projects. Prerequisites: COE 240, and ELE 241 or ELE 225. Lab/Tech fee rate B applies.

COE 420 Software Engineering (3-1-3). (Cross-listed as CMP 350). Introduces the basic principles and practices of software engineering. Emphasizes the different phases of the software development process and quality issues. Includes the following topics: software life cycle models; general design, implementation and testing issues; specification and design methodologies; model-based approaches to software design; project management; and the use of various design and development tools. Prerequisite: COE 311 or CMP 305 or CMP 306. Lab/Tech fee rate A applies.

COE 422 Database Systems (3-1-3).
(Cross-listed as CMP 320). Introduces the basic principles of database management systems; data models, including conceptual and logical models; translation between data models; query languages; normalization

of relations; introduction to formal database design and/or database application development. Prerequisite: COE 311 or CMP 305 or CMP 306. Lab/Tech fee rate A applies.

COE 423 Computer Networks II (3-0-3). Examines the most important communication networks used today. Includes the following topics: telephone networks and VoIP, wireless networks, ad-hoc and sensor networks, optical networks, multimedia networks, network management and network performance considerations (error/noise, delay models, throughput). Prerequisites: COE 360 and COE 371.

COE 424 Advanced Digital System Design (3-1-3). Covers advanced digital design techniques, structured design methods for advanced digital design, case studies of complex digital circuits, hardware description languages (HDL) and PLD implementations, reliable design and testing techniques. Prerequisite: COE 341. Lab/Tech fee rate B applies.

COE 425 Modern Computer Organizations (3-0-3). Covers performance measures, RISC processors, datapath and control units design, memory hierarchy, pipelining, I/O systems and multiprocessors. Prerequisite: COE 341.

COE 427 Internet Computing (3-0-3).
Introduces students to the underlying infrastructure of the Internet and the World Wide Web. Covers Internet protocols that support a variety of applications, including file transfer, client-server computing, peer-to-peer computing, and Internet messaging and web syndication. Covers front, middle and back-end technologies for non-trivial Internet applications. Introduces service-oriented architectures and web services and the semantic Internet. Includes and Internet programming project. Prerequisites: COE 312 and COE 370.

COE 428 VLSI Design (3-0-3). Covers CMOS technology, layout rules and techniques, CMOS logic and circuit design, circuit characterization and performance estimation, and design methodologies and tools. Prerequisites: COE 221 or CMP 210, and ELE 241.

COE 431 Industrial Computer Systems (3-1-3). Covers

microprocessor-based data acquisition units and their industrial applications, programmable logic controllers and their industrial applications, web-based monitoring and control of industrial plants. Includes a class project. Prerequisite: COE 412 or ELE 341. Lab/Tech fee rate B applies.

COE 434 Mobile Computing (3-0-3).
Introduces students to the challenging field of mobile computing. Includes the following topics: wireless communications and networks, location management, routing in ad hoc wireless network, file systems issues and caching strategies. Prerequisite: COE 371.

COE 444 Computer Security (3-0-3).
(Cross-listed as CMP 435). Covers a broad variety of topics in computer security. Includes the following topics: authentication and authorization, introduction and application of cryptography, social engineering attacks, physical security, network security, application security (web, e-mail), wireless security, operating system security, program security, security management, and ethical and legal issues in computer security. Prerequisite: COE 370 or COE 381 or CMP 310.

COE 445 Compiler Design (3-0-3).
(Cross-listed as CMP 452). Analyzes issues associated with the implementation of high-level programming languages. Covers fundamental concepts, functions and structures of compilers, and basic program optimization techniques. Includes the following topics: parsing, abstract syntax representation, semantic analysis and code generation. Discusses run-time organization and various interpretive techniques to support execution of compiled programs. Prerequisite: COE 311 or CMP 305.

COE 481 Real-time Industrial Networks (3-0-3). Explores industrial computer network principles, commercial industrial networks, third-generation industrial networks, network layout and intrinsic safety considerations, software issues, real-time data processing and case studies. Prerequisite: COE 371.

COE 482 Soft Computing (3-0-3).
Introduces theories and methods for automating the solution of problems

with inexact specifications, input, processing models or output. Covers fuzzy logic, neural networks and genetic algorithms and implements examples using CAE tools. Prerequisite: COE 360.

COE 490 Design Project I (0-3-1). Introduces design methodology in computer engineering through lectures and an open-ended, in-depth design project of significance in computer engineering. The project includes the design of a system process or component to achieve the functional objectives representative of problems encountered by practicing computer engineers. Students work in teams to define, complete, validate and document their design project. They work in close accord with one or more faculty members. Emphasizes engineering ethics and communication skills. Prerequisites: COE 240 or CMP 240, COE 311 or CMP 305, COE 370 and senior standing.

COE 491 Design Project II (0-6-2). Continues the work of COE 490. Prerequisite: COE 490.

CVE Civil Engineering

CVE 202 Construction Materials Laboratory (0-3-1). Focuses on the application of basic measurement techniques and instrumentation to the experimental investigation of construction materials: aggregate, bitumen, pavement materials, asphalt mixes, cement, concrete materials, concrete mixes, mild and high tensile steel testing, non-destructive testing. Includes timber and metals tests. Requires written reports covering the planning, execution, results and conclusions of the investigation. Emphasizes teamwork. Prerequisite/concurrent: CVE 221. Lab/Tech fee rate B applies.

CVE 211 Fundamentals of Graphics and Computer Programming (2-3-3). Covers graphical communication including lettering, drawing equipment and techniques. Includes the following topics: orthographic projections, sections and technical sketching; isometric and oblique projections; communication and documentation of

engineering design through engineering drawing; computer-aided design; and elements of computer programming and problem-solving techniques. Uses computer tools in data analysis, data display and visualization techniques. Prerequisite: NGN 111. Lab/Tech fee rate A applies.

CVE 220 Statics (3-1-3). Covers fundamental concepts and principles of mechanics, vectors and force systems; concepts of free-body-diagram; principle of equilibrium of particles and rigid bodies in two and three dimensions; analysis of structures (trusses, frames and machines); shear and bending moment in beams, center of gravity, centroids and area moment of inertia; and friction. Prerequisites: PHY 101 and PHY 101L.

CVE 221 Construction Materials and Quality Control (3-0-3). Examines properties of construction materials (aggregate, Portland cement, admixtures, concrete and bituminous materials used in construction and maintenance of structures, roads and pavements); design of concrete mixes including admixtures; concrete trial mixes on construction site; concrete curing methods; concrete strength and durability; design of paving mixtures; and production, specifications, tests and quality control of various construction materials. Prerequisite: CHM 101; prerequisites/concurrent: CVE 202 and CVE 223.

CVE 223 Mechanics of Materials (3-1-3). Covers stress and strains; mechanical properties of materials; axial load, torsion, bending and transverse shear; combined loading; stress transformation; deflection of beams and shafts; and buckling of columns. Prerequisite: CVE 220 or MCE 220 or MCE 224.

CVE 231 Geology (3-0-3). Covers the nature and structure of earth, formation of rocks, chemical and physical properties of minerals, weathering, volcanoes, earthquakes and tectonic movements, types of mountains and their formation, groundwater and surface water process, and rock mass instabilities. Prerequisite: NGN 110.

CVE 240 Fluid Mechanics (2-3-3). Examines fundamental concepts

including properties of fluids (specific gravity, viscosity and surface tension); fluid statics (pressure and its measurement, hydrostatics forces on submerged surfaces, stability of floating bodies); basic equations of motion (continuity, momentum and energy equations, Bernouli's equation); measurement of static and stagnation pressure, velocity and flow rate in closed conduits (internal flow), laminar and turbulent flow; flow over immersed bodies (external flow); lift and drag; and dimensional analysis and dynamic similitude. Prerequisites: CVE 220 and MTH 104. Lab/Tech fee rate B applies.

CVE 241 Elementary Surveying (3-0-3). Introduces geodetic positions, coordinate systems, datum, basic measurement procedures and use of surveying instruments. Covers principles and practice in measuring distance, elevation, and angles; and leveling, traverse, and earth work computations. Introduces GPS and GIS. Prerequisite: MTH 104; prerequisite/concurrent: CVE 242.

CVE 242 Field Plane Surveying (0-3-1). Covers fundamental principles of surveying; basic measuring procedures and use of surveying instruments; and use of surveying equipment for leveling, traverse and area/volume computations. Prerequisite/concurrent: CVE 241. Lab/Tech fee rate B applies.

CVE 263 Urban Transportation Planning (3-0-3). Examines urban transportation systems planning techniques: data collection, trip generation, trip distribution, factors underlying the choice of mode, traffic assignment, modeling and evaluation techniques, use of planning software packages, development of alternatives, and evaluation of civil engineering projects. Introduces Intelligent Transportation Systems (ITS). Prerequisites: CVE 241, and NGN 111.

CVE 267 Civil Engineering Cost Analysis (3-0-3). Covers economic analysis and evaluation of civil engineering proposals utilizing time-value and related factors, time value of money, worth of investments and economic evaluation of alternative choices, replacement and retention

decisions, selection from independent projects, inflation, cost estimating fundamentals, parametric cost estimating, depreciation methods, breakeven analysis and benefit cost analysis. Prerequisites: CVE 221, and NGN 111.

CVE 301 Theory of Structures (3-0-3). Covers stability and determinacy of structures; force calculation in trusses; axial load, shear and bending moment diagrams for beams and frames; approximate analysis of indeterminate frames; analysis of cables and arches; deflection calculations; influence lines for determinate structures; and analysis of statically indeterminate structures using classical methods. Uses commercial software for structural analysis. Prerequisite: CVE 223.

CVE 303 Geotechnical Engineering Laboratory (0-3-1). Includes experiments in soil mechanics. Laboratory experiments cover geotechnical test equipment and techniques. Includes the applications of testing principles to the measurement of fundamental aspects of soil behavior from classification to engineering properties. Emphasizes rigorous techniques to measure mechanical behavior under various boundary conditions. Provides exposure to error estimation. Utilizes standard test methods and equipment to assess physical, mechanical, chemical and hydraulic properties of soils for application in civil engineering design. Includes laboratory work on classification and engineering tests on intact and weathered rock. Prerequisite/concurrent: CVE 331. Lab/Tech fee rate B applies.

CVE 304 Environmental and Water Engineering Laboratory (0-3-1). Includes experiments in environmental engineering, hydraulic engineering and surface and ground water hydrology. Includes sampling, physical, chemical and bacteriological analysis of water and wastewater. Utilizes standard test methods and equipment for measurement of important environment parameters. Covers sampling methods and data presentation. Includes experiments in water surface run off and subsurface infiltration and flow, experiments in closed conduit, open

channel tests and related hydraulic structures. Prerequisite/concurrent: CVE 351. Lab/Tech fee rate B applies.

CVE 310 Fundamentals of Structural Dynamics (3-0-3). Examines fundamental concepts of kinematics and kinetics of rigid body motion. Introduces earthquake nature, causes and effects; types of dynamic forces and the basic concepts of structural dynamics; equations of motion of single degree of freedom systems, free and forced vibration; response to earthquake loading. Introduces multi-degree of freedom systems and applications to civil engineering disciplines. Uses relevant computer modeling and dynamic analysis programs. Prerequisites: CVE 301 and MTH 205.

CVE 312 Structural Steel Design (3-0-3). Covers loads on structures; design criteria and philosophies; and analysis and design of structural steel elements found in buildings and bridges including tension members, compression members, beams, columns, beam columns and connections. Requires a design project and use of computer software. Prerequisite: CVE 301.

CVE 313 Reinforced Concrete Design (3-0-3). Covers loads on structures; design criteria and factors of safety; analysis and design of reinforced concrete beams, short columns, one-way slabs and footings using ultimate strength method; and bond development of reinforcement. Requires a design project and use of computer software. Prerequisites: CVE 221 and CVE 301.

CVE 325 Numerical Methods in Engineering (3-0-3). Covers basic concepts of computational methods; errors, accuracy and precision; numerical solution of non-linear equations; direct and iterative methods for solving systems of linear algebraic equations; numerical differentiation and integration; and interpolation, approximation and curve fitting. Includes numerical solutions of ordinary differential equations and introduces partial differential equations. Includes applications of computational methods using computers. Prerequisites: CVE 211 and MTH 205; prerequisite/concurrent: MTH 221.

CVE 331 Geotechnical Engineering Principles (3-0-3). Studies physical properties of soils, classification systems, soil structure and soil water systems, effective stress principle and stresses in soil due to applied loads. Includes the following topics: compressibility, consolidation and swell; permeability and seepage analysis; soil compaction; stress-strain-shear strength relationships of soils; failure criteria; direct and triaxial shear testing; and soils used in construction. Introduces lateral earth pressures. Uses computer software for geotechnical analysis. Prerequisite: CVE 223; prerequisite/concurrent: CVE 303.

CVE 333 Geotechnical Engineering Design (3-0-3). Covers subsurface exploration and site investigation and evaluation; bearing capacity of shallow foundations in different types of soils; settlement analysis (consolidation and immediate); design of shallow foundations including footings and raftings; design of deep foundations including driven piles, shafts and drilled piers; pile load tests; end bearing and friction of deep foundations under axial loading; settlement of piles; bearing capacity and settlement of pile groups; piles subjected to lateral loading and moments; and design of pile foundations. Introduces design of retaining walls. Requires extensive use of computer-aided design in team projects. Prerequisite: CVE 331.

CVE 341 Water Resources Engineering (3-0-3). Introduces flow of water through pipes and channels, over the ground surface, and through the subsurface. Covers incompressible flow in pipes, methods of energy loss computations, pumps, steady flow in pipe networks, and design of pipe networks using computer applications. Includes open channel hydraulics, design of water supply canals, bridge and culvert hydraulics, and open channel flow modeling. Introduces surface hydrology including runoff modeling. Covers subsurface flow and wells hydraulics. Includes team projects, and analysis and design using computer software. Prerequisite: CVE 240.

CVE 351 Environmental Engineering (3-0-3). Covers materials balance, reaction kinetics and reactor theory.

Introduces water quality parameters, modeling, and source assessment; and planning and design of water and wastewater treatment methods and unit operations. Includes physical, chemical and biological phenomenon governing water and wastewater treatment steps; air quality standards and air quality treatment and control; solid waste planning and management; and hazardous waste treatment and management. Prerequisite: CHM 101; prerequisites/concurrent: CVE 304 and CVE 341.

CVE 363 Highway Design (3-0-3). Explores driver and vehicle characteristics, stopping and passing sight distances, cross section elements, vertical and horizontal alignment, intersections and interchanges, surface drainage, types of pavements, and principles, theoretical concepts and design of flexible and rigid pavements. Prerequisite: CVE 263.

CVE 367 Project Estimating, Planning and Control (3-0-3). Covers the application of cost estimating and planning techniques for construction projects. Introduces construction project management; quantity surveying; labor, material and equipment costing; indirect and general overhead costs; preparation of approximate and definitive estimates; work breakdown structures; project scheduling; network modeling; critical path method; time-cost tradeoff; earned value; and project controls. Prerequisite: CVE 267.

CVE 397 Professional Training in Civil Engineering (0-0-0). Requires a minimum of five weeks of approved professional experience. Work undertaken must be documented in a formal report to the program by the beginning of the following term. Graded as Pass/Fail. Prerequisite: Junior II standing and approval of internship coordinator for the major. Registration fee applies.

CVE 410 Computer Methods in Structural Analysis and Design (3-0-3). Explores structural systems; loading on structures (wind and earthquake loads); virtual work method, stiffness and flexibility methods; matrix formulation of the stiffness and flexibility methods; direct stiffness method; introduction to finite element method; computer analysis and design of 2D and 3D framed structures and high-rise buildings. Emphasizes team-based learning through specific design projects. Prerequisite: CVE 301.

CVE 411 Structural Concrete Design (3-0-3). Introduces flooring and structural systems. Covers design of reinforced concrete members including beams subjected to torsion, two-way slabs, column under biaxial bending, slender columns, combined footings and shear walls. Introduces pre-stressed concrete, pre-stress materials and losses. Includes design of pre-stressed beams and computer analysis and design of structures. Emphasizes team-based learning through specific design projects. Prerequisite: CVE 313.

CVE 413 Concrete Bridges Design (3-0-3). Covers design of highway bridges; history, classification and aesthetics of bridge structures; design philosophy; loading, girder distribution factors; and load combinations; design of concrete deck slab; design of reinforced concrete T-beam and box girders bridges; and design of piers, bearings and abutments. Introduces pre-stressed concrete bridges. Prerequisite: CVE 313.

CVE 437 Advanced Concrete Technology (3-0-3). Covers mix design, production, applications and quality control of high performance concrete in hot and cold climates. Includes the following topics: concrete strength, durability, deterioration, maintenance and repair materials and methods; application of admixtures and cement replacement in various advanced concrete types; and the prediction of service life and cost of repair. Prerequisites: CVE 202 and CVE 221.

CVE 442 Advanced Foundation Engineering (3-0-3). Includes site investigation with emphasis on in-situ testing. Covers computer-aided profile data reduction and recording; interpretation of field and laboratory data; design of retaining structures, earth structures, braced cut excavations, sheet-pile walls and reinforced earth structures; offshoring; problematic soil and ground improvement; and the design of staged construction embankments. Introduces seismic behavior of ground and geotechnical

earthquake engineering, and design with geotextiles. Emphasizes design of locally used geotechnical structures. Requires extensive use of computer-aided design in team-projects. Prerequisite: CVE 333.

CVE 446 Geotechnical Dam Engineering (3-0-3). Examines regional geoscience and seismotectonic investigations; related subsurface exploration programs; in-situ permeability testing; and seepage in composite sections, anisotropic and multi-layered materials; flow through earth dams; methods of stability analysis of soils and rocks slopes; design of dam foundations; foundation treatment; and grouting in the ground. Introduces earthquake analysis and design of earth and rockfill dams. Special considerations include liquefaction problems, sinkholes, land subsidence, foundation defects and dispersive soils. Covers compaction methods, monitoring and staged construction. Includes case studies and computer-aided design projects. Prerequisite/concurrent: CVE 331.

CVE 450 Physical and Chemical Processes in Environmental Engineering (3-0-3). Covers fundamental physical and chemical processes as applied within environmental engineering, including water treatment, wastewater treatment, air pollution control, and water quality management. Topics include: reactor theory, mixing, gravity separation, centrifugation, adsorption, Ion exchange, disinfection kinetics, acid/base chemistry, neutralization, precipitation and corrosion. Prerequisites: CVE 304 and CVE 351.

CVE 456 Traffic Engineering (3-0-3). Explores characteristics of road users and the characteristics of the traffic stream: speed-flow-density, traffic volume, traffic accidents, travel time and delay, parking, capacity and level of service of freeways, signalized intersections and at-grade intersection design. Also covers transportation models. Prerequisite: CVE 263.

CVE 457 Airport Planning and Design (3-0-3). Examines airport master planning, forecasting air travel demand and design of airports, including lighting, terminal facilities, noise-

level control, aircraft control, airspace utilization and automobile parking. Prerequisite: CVE 263.

CVE 463 Construction Management (3-0-3). Examines management in the construction industry; construction delivery systems; management organizations; construction contracts; preconstruction planning and scheduling; bidding and award; contract administration and control; managing submittals, drawings, communications, progress payments, cash flow and site materials; and progress monitoring and control. Introduces construction quality and safety management. Prerequisite: CVE 367.

CVE 468 Systems Construction Management, Scheduling and Control (3-0-3). Explores the basic elements of management of civil engineering projects: the roles of all participants in the process, coordination with various authorities, emphasis on contractual aspects and contract documents, construction law, variations, arbitration, claims, settlement of disputes, risk management, construction planning and scheduling, work breakdown structure, critical path method, procurement schedule, resources (labor, and equipment), cost-schedule integration, least cost schedules, progress monitoring and control. Prerequisite: CVE 267.

CVE 490 Civil Engineering Design Project I (0-3-1). Requires an open-ended, in-depth design project of civil and/or environmental engineering significance that includes the analysis and design of a civil engineering system meeting desired objectives within one, or more, of the civil engineering practice areas. Students apply creativity with their engineering knowledge in the solution of civil engineering problems. Students work in close accord with one or more faculty members in a team environment. Students apply civil engineering principles to analyze and design the civil/environmental engineering system. The project outcomes must demonstrate that students have attained the level of competency needed for entry into the civil engineering profession. Prerequisite: senior standing.

CVE 491 Civil Engineering Design Project II (0-6-2). Continues the work of CVE 490. Prerequisite: CVE 490.

EGM Engineering Management

EGM 361 Management for Engineers (3-0-3). Focuses on engineers as managers. Includes the following topics: nature and functions of organizations; the tools of engineering management; engineering organizational models, including cluster and matrix organization; leadership; teamwork and creativity; personnel management; finance; communication skills; and ethical and professional standards. Introduces total quality management. Includes case studies. Prerequisites: WRI 102 and NGN 110.

EGM 362 Engineering Project Management (3-0-3). Covers projects in engineering organizations. Includes the following topics: project initiation; effective project management; project life cycle, planning and scheduling; resourcing; cost estimating; and project monitoring and control. Introduces computer packages. Includes case studies. Prerequisites: ECO 201 and NGN 110.

EGM 364 Engineering Economy (3-0-3). (Formerly EGM 464). Explores the economics concepts and theories of planning. Covers the bases and methods of economic analysis of engineering projects and the application of these principles in understanding economic activity of private and public engineering companies at various micro- and macroeconomic levels. Not open to civil or chemical engineering students. Prerequisites: ECO 201 and NGN 111.

ELE Electrical Engineering

ELE 211 Electric Circuits I (2-3-3). Examines physical concepts and mathematical analysis of electric circuits. Includes DC, transient and

sinusoidal steady state analysis of circuits. Includes laboratory experiments and use of Pspice and MATLAB. Prerequisites: PHY 102 and PHY 102L. Lab/Tech fee rate B applies.

ELE 212 Electric Circuits II (2-3-3). Covers magnetically coupled inductors and ideal transformers, frequency response analysis, Laplace transform, application of Laplace transform in circuit analysis, two port networks. Introduces three phase circuits. Includes laboratory experiments. Prerequisites: ELE 211 and MTH 205. Lab/Tech fee rate B applies.

ELE 225 Electric Circuits and Devices (2-3-3). Covers electrical quantities and variables; circuit principles; signal processing circuits; DC and AC circuit analysis; and diodes, transistors, operational amplifiers and digital devices. Not open to electrical engineering or computer engineering majors. Prerequisites: PHY 102 and PHY 102L. Lab/Tech fee rate B applies.

ELE 241 Electronics I (3-0-3). Reviews semiconductor physics. Covers PN junction; diode circuits; special diodes; bipolar junction transistor (BJT); biasing, small signal analysis and design of BJT amplifiers; MOSFET transistor; biasing, simple current mirror; small signal analysis and design of MOSFET amplifiers; optoelectronic devices; and digital electronics. Prerequisite: ELE 211; prerequisite/concurrent ELE 241L.

ELE 241L Electronics I Laboratory (0-3-1). Laboratory to accompany ELE 241. Prerequisite/concurrent: ELE 241. Lab/Tech fee rate B applies.

ELE 311 Electromagnetics (3-0-3). Covers vector algebra, vector calculus, electrostatic boundary conditions, magnetostatic fields, magnetic materials, Maxwell's equations, electromagnetic wave propagation and transmission lines. Prerequisites: MTH 203, MTH 205, PHY 102 and PHY 102L.

ELE 321 Signals and Systems (3-0-3). Studies classification and manipulation of continuous-time and discrete-time signals, linear time invariant system modeling, convolution of discrete-time and continuous signals, Fourier representation of signals (Fourier series, Fourier transform and discrete-

time Fourier transform), applications of Fourier representations in signals and systems, and the Z-transform and analysis of discrete-time systems. Prerequisites: ELE 212.

ELE 323 Signal Processing (3-0-3). Covers signal classification and system behavior, impulse response and convolution, signals and systems analysis and representation via the Fourier transform and the Z transform, sampling of band-limited signals, and FIR and IIR Digital filters and their design. Not open to electrical engineering students. Prerequisites: MTH 205, and ELE 211 or ELE 225.

ELE 332L Measurements and Instrumentation Laboratory (0-3-1). Includes error analysis, linear displacement transducers, strain gauge, rotational speed measurement, capacitive and inductive transducers, temperature measurement, measurement of pressure and flow, and ultrasonic measurement systems. Prerequisite: ELE 341. Lab/Tech fee rate B applies.

ELE 341 Electronics II (3-0-3). Covers differential pair, operational amplifiers, power amplifiers, review of Bode Plots, frequency response characteristics of amplifiers, feedback and stability, oscillators, active filters, timing circuits, digital to analog conversion (D/A), and analog to digital conversion (A/D). Prerequisite: ELE 225 or ELE 241.

ELE 341L Electronics II Laboratory (0-3-1). Laboratory to accompany ELE 341. Prerequisite/concurrent: ELE 341. Lab/Tech fee rate B applies.

ELE 351 Electrical Energy Conversion (3-0-3). Covers Magnetic circuits, single phase transformer and equivalent circuit, autotransformer, basic concepts of electromechanical energy conversion, and DC and AC machines modeling and steady state analysis. Prerequisite: ELE 212 or ELE 225 for non electrical engineering students only.

ELE 353 Control Systems I (3-0-3). Examines mathematical models of systems, feedback control system characteristics, transient response analysis, performance and stability of feedback control systems, root locus analysis, frequency response analysis and design of feedback control systems. Prerequisite: ELE 212; prerequisite/concurrent: MCE 224 or MCE 225.

ELE 353L Control Systems I Laboratory (0-3-1). Laboratory to accompany ELE 353. Prerequisite: ELE 353. Lab/Tech fee rate B applies.

ELE 360 Probability and Stochastic Processes (3-0-3). (Cross-listed as ELE 360, MTH 360 and STA 360). Covers set theory, preliminaries of probability theory and random variables, stochastic processes, spectral characteristics, applications to systems, Markov chains and queueing theory. Prerequisites: NGN 111 or STA 201, and ELE 323 or MTH 351 or prerequisite/concurrent: ELE 321.

ELE 361 Communications (3-0-3). Covers signals and systems concepts, communication systems and signal transmission through linear systems; continuous wave modulation schemes including amplitude modulation (AM), frequency modulation (FM) and phase modulation (PM); detection schemes for analog modulation systems and superheterodyne receivers; and noise modeling and performance of various analog modulation schemes in the presence of noise. Introduces digital communications. Prerequisite: ELE 321 or ELE 323; prerequisite/concurrent: ELE 360.

ELE 361L Communications Laboratory (0-3-1). Laboratory to accompany ELE 361. Prerequisite: ELE 361. Lab/Tech fee rate B applies.

ELE 371 Power Systems Analysis (3-0-3). Examines power system concepts and per unit quantities; transmission line, transformer and rotating machine modeling; steady-state analysis and power flow; fault analysis; theory of symmetrical components; and power system stability. Prerequisite: ELE 351; prerequisite/concurrent: MTH 221.

ELE 371L Electric Machines and Power Systems Laboratory (0-3-1). Laboratory to accompany ELE 371. Prerequisite/concurrent: ELE 371. Lab/Tech fee rate B.

ELE 397 Professional Training in Electrical Engineering (0-0-0). Requires a minimum of five weeks of approved professional experience. Work undertaken must be documented in a formal report to the department by the beginning of the following term. Graded as Pass/Fail. Prerequisite: Junior II standing and approval of the internship coordinator for the major. Registration fee applies.

ELE 424 Digital Signal Processing (3-0-3). Covers treatment of sampling/reconstruction, quantization, discrete-time signals and systems, digital filtering, Z-transforms, transfer functions, digital filter realizations, discrete Fourier transform (DFT) and fast Fourier transform (FFT), finite impulse response (FIR) and infinite impulse response (IIR) filter design, and digital signal processing (DSP) applications. Prerequisite: ELE 321.

ELE 432 Medical Instrumentation I (3-0-3). Examines principles of medical instrumentation. Covers biomedical sensors and transducers; temperature, displacement, acoustical, chemical and radiation measurements; bio-potential amplifiers and signal processing; origin of bio-potentials; bio-potential electrodes; measurement of bio-potentials such as ECG, EEG and EMG; blood pressure measurements; and electrical safety. Prerequisite: ELE 341.

ELE 439L Medical Electronics Systems Laboratory (0-3-1). Explores data acquisition tools, medical signal processing, biopotential amplifiers, biopotentials, bioimpedance measurements, blood pressure measurements, respiratory measurements, ultrasonic measurements and electrical safety. Prerequisite/concurrent: ELE 432. Lab/Tech fee rate B applies.

ELE 441 Microelectronic Devices (3-0-3). Covers conceptual and functional description of the physics, characteristics and fabrication of microelectronic devices as it applies to current and future integrated circuits (IC) and systems. Includes properties and dynamics of semiconductor carriers, P-N junctions, MOSFETs, BJTs and modern FETs. Uses of the state-of-the-art technology CAD/CAE simulation tools, analytical techniques for device design, layout, fabrication and testing. Prerequisite: ELE 341.

ELE 444 Control Systems II (3-0-3). Covers state-space modeling and

analysis, controllability, observability, state feedback design and pole placement, dynamic observers, output feedback design and stability analysis. Prerequisite: ELE 353.

ELE 451 Wireless Communications (3-0-3). Provides an overview of wireless networks, design considerations of cellular systems, frequency reuse, multiple access interference, wireless channel characterization, Rayleigh fading, shadowing, modulation techniques for mobile radio, diversity schemes, multiple access techniques, wireless systems and standards. Prerequisite: ELE 361.

ELE 452 Digital Communications (3-0-3). Covers model of digital communication systems, base-band transmission and line coding techniques, geometric interpretation of signals, band-pass transmission and digital modulation techniques, optimum detection of known signals in AWGN channels, error correcting codes, modulation and coding trade-off, inter-symbol interference and synchronization. Prerequisite: ELE 361.

ELE 453 Microwave Engineering (3-0-3). Examines electromagnetic plane waves, microwave transmission lines, Smith charts and stubs, microwave waveguides and components, microwave measurements and applications, and microwave generators. Prerequisite: ELE 311.

ELE 454 Antennas and Wave Propagation (3-0-3). Covers radiation pattern, directivity and gain, half-power beam width and beam efficiency, antenna bandwidth, polarization, input impedance, radiation efficiency, wire antennas, loop antennas, array antennas, aperture antennas and reflector antennas. Prerequisite: ELE 311.

ELE 455 Digital Image Processing (3-0-3). Covers mathematical representation and fundamentals of digital images. Also includes image enhancement, image restoration, image compression, image segmentation and color representation. Prerequisite/concurrent: ELE 424.

ELE 456 Pattern Recognition (3-0-3). Covers fundamentals of pattern recognition. Explores the

following topics: Bayesian decision theory and parameter estimation, maximum likelihood estimation, linear discriminant analysis**,** Fisher discriminant analysis**,** dimensionality reduction via principle component analysis, and neural networks. Includes unsupervised learning and clustering. Prerequisites: ELE 360 and MTH 221.

ELE 458 Multimedia Communications and Networking (3-0-3). Provides an overview of multimedia information (text, video, audio and images). Explains the fundamentals of image and video compression. Introduces underlying concepts and principles of multimedia technologies and networking. Demonstrates basic understanding of Quality of Service (QoS) and QoS Routing network protocols, routing, operating systems and human computer interaction. Includes multimedia streaming standards and techniques over wired and wireless networks. Prerequisite: ELE 360.

ELE 458L Communications Systems Laboratory (0-3-1). Examines practical aspects of digital communications, antennas and microwave engineering. Topics include pulse code modulation (PCM), modulation schemes, pulse shaping, noise effects, optical fiber link, time division multiplexing, antenna parameters measurements, microwave reflection and transmission parameter measurements, and real-time DSP programming and applications. Prerequisites: ELE 311 and ELE 361. Lab/Tech Fee Rate B applies.

ELE 471 Digital Control Systems (3-0-3). Covers discrete-time systems and the Z-transform, sampling and reconstruction, open-loop and closed discrete-time systems, system time-response characteristics, stability analysis techniques and digital controller design. Prerequisite: ELE 353.

ELE 473 Industrial Instrumentation and Control (3-0-3). Reviews measurement systems. Covers field instrumentation, input/output instruments characteristics, instruments grounding and cabling techniques, signal processing and transmission, smart sensors, data acquisition and

display, general purpose control devices, programmable logic controllers and industrial controllers, and DCS, SCADA and Fieldbuses in industrial control. Prerequisites: ELE 332L and ELE 353.

ELE 476L Instrumentations and Control Systems Laboratory (0-3-1). Reviews measurement systems. Explores programmable logic controllers programming, PC-based data acquisition and control, Electro-Pneumatic System Control and Electro-Hydraulic System Control. Prerequisites: ELE 332L and ELE 353L. Lab/Tech fee rate B applies.

ELE 481 Power System Protection (3-0-3). Covers unsymmetrical fault analysis, fuses, voltage and current transducers, fundamental relay operating principles and characteristics, over current protection, comparators and static relay circuits, differential protection and its application to generators, transformers and bus bars, motor protection, system grounding, standard protective schemes for system coordination of relays. Prerequisite: ELE 371.

ELE 482 Electric Power Distribution Systems (3-0-3). Examines concepts and techniques associated with the design and operation of electrical distribution systems. Includes the following topics: load characteristics, distribution substations, choice of voltage levels, loss minimization and voltage control, calculation of impedances of unbalanced three-phase systems, and analysis techniques of radial systems. Prerequisite: ELE 371.

ELE 483 Power System Operation (3-0-3). Introduces economic operation, transmission system effects, unit commitment and fuel scheduling of power systems. Covers modeling of system components and control equipment, automatic control of generation and frequency regulation, and aspects of interconnected operation. Prerequisite: ELE 371.

ELE 485 Power Electronics (3-0-3). Explores electric power conditioning and control; characteristics of solid-state power switches; and analysis and applications of AC power controllers, controlled rectifiers, DC choppers and

DC-AC converters. Prerequisites: ELE 241 and MTH 205.

ELE 486 Electric Drives (3-0-3). Covers the application of semiconductor switching power converters to adjustable speed DC and AC motor drives. Includes the following topics: steady state theory and analysis of electric motion control in industrial, robotic and traction systems. Prerequisites: ELE 241 and ELE 351.

ELE 488L Power Engineering Laboratory (0-3-1). Explores various power systems and power electronics applications including issues related to power transmission and distribution and adjustable speed motor drives. Prerequisites: ELE 371 and ELE 371L. Lab/Tech fee rate B applies.

ELE 490 Electrical Engineering Design Project I (0-6-2). Introduces design methodology in electrical engineering through lectures and an open-ended, in-depth design project. The project includes the design of a system, process or component to achieve the functional objectives representative of problems encountered by practicing electrical engineers. Students work in teams to define, complete, validate and document their design project. They work in close accord with one or more faculty members. The course emphasizes engineering ethics and communication skills. Prerequisites: senior standing and permission of department.

ELE 491 Electrical Engineering Design Project II (0-6-2). Continues the work of ELE 490. Prerequisite: ELE 490.

MCE Mechanical Engineering

MCE 215 Engineering Drawing and Workshop (0-6-2). Covers orthographic projections of machine elements, auxiliary views, section views, dimensioning, introduction to fits and tolerances, basic detailed and assembly drawings, and computer-aided drafting using commercial computer-aided design software. Introduces the use of basic machines, the development of hand skills and safety in the

workshop. Covers basic hand tools, basic machining operations, welding, casting, woodwork, sheet metal work and measuring instruments. Lab/Tech fee rate B applies.

MCE 220 Statics (3-1-3). Covers fundamental concepts and principles of mechanics, vectors and force systems. Topics include concepts of free-body-diagram; principles of equilibrium of particles and rigid bodies in two and three dimensions; analysis of structures: trusses, frames and machines; shear and bending moment in beams; center of gravity; centroids; area moment of inertia; and friction. Prerequisites: PHY 101 and PHY 101L.

MCE 222 Dynamics (3-1-3). Examines fundamental concepts of kinematics and kinetics with application to motion of particles and plane motion of rigid bodies. Includes the following topics: rectilinear and curvilinear motion of particles; Newton's second law, impulse and momentum methods; impact, dynamics of systems of particles; kinematics of rigid bodies; plane motion of rigid bodies; forces and accelerations; and energy and momentum methods. Prerequisites: MCE 220 and MTH 205.

MCE 223 Mechanics of Materials (3-1-3). Covers stress and strain; mechanical properties of materials; axial load, torsion, bending and transverse shear; combined loadings; stress transformation; deflection of beams and shafts; and buckling of columns. Prerequisite: MCE 220 or MCE 224 or MCE 225.

MCE 224 Engineering Mechanics–Statics and Dynamics (3-1-3). Covers particle statics and dynamics, vector mechanics, free body diagrams, two- and three-dimensional force equilibrium systems, internal forces, centroid and moment of inertia, rectilinear and curvilinear motion, Coriolis effects, considerations of work and energy, and periodic motion. Not open to mechanical engineering or civil engineering majors. Prerequisites: MTH 104, PHY 101 and PHY 101L.

MCE 225 Statics and Dynamics for Computer Engineers (2-1-2). Covers particle statics and dynamics, vector mechanics, free body diagrams, two-dimensional force equilibrium systems,

internal forces, moments of inertia, rectilinear and curvilinear motion, considerations of work and energy. Not open to mechanical engineering, civil engineering or electrical engineering majors. Prerequisites: MTH 104, PHY 101 and PHY 101L.

MCE 230 Materials Science (3-0-3). Introduces students to material science; relationships between structure and properties of materials; atomic bonding, crystalline structures, crystal defects and imperfections; phase diagrams and equilibrium; microstructural development; properties of engineering materials; and corrosion. Prerequisite: CHM 101.

MCE 234 Computer Applications in Mechanical Engineering (0-6-2). Introduces structured programming and software suite for mechanical engineering applications (C, MATLAB and other software used in mechanical engineering). Introduces computer hardware, and the use of software and hardware in the design and simulation of mechanical systems. Lab/Tech fee rate A applies.

MCE 240 Fluid Mechanics (3-1-3). Covers fundamental concepts and properties of fluids; fluid statics, forces on planar and curved surfaces, and buoyancy; kinematics of fluid motion; conservation equations with applications; continuity, momentum and energy equations, and Bernoulli's equation; velocity and flow rate measurements; dimensional analysis and modeling; frictional losses in pipes and introduction to fluid dynamic forces on immersed bodies and turbomachinery. Prerequisites: MCE 220 and MTH 104.

MCE 241 Thermodynamics I (3-1-3). Covers basic concepts of thermodynamics, properties of matter, processes and cycles, energy transfer, first law of thermodynamics for closed systems and control volumes, second law of thermodynamics, entropy and availability analyses, applications on engineering devices, basics of vapor power and gas power cycles. Prerequisites: PHY 101 and PHY 101L.

MCE 300 Introduction to Mechanical Systems (3-0-3). Covers the rigid body dynamics as well as the concept of stress and strain under different types

of loading. Introduces the fundamental concepts and basic equations of fluid mechanics and thermodynamics. Not open to mechanical engineering majors. Prerequisite: MCE 220 or MCE 224 or MCE 225.

MCE 311 Engineering Measurements (2-3-3). Examines basic concepts of measuring methods; static and dynamic characteristics of signals; types of errors; assessing and presenting experimental data; uncertainty analysis; measurement system behavior; sampling; signal conditioning; data acquisition; and selection and use of temperature, pressure, fluid flow, force, stress, strain, torque and power instrumentation. Includes laboratory experiments with emphasis on fluid flow experiments, temperature measurements, motion measurements and solid mechanics experiments. Prerequisites: ELE 225, MCE 222 and MCE 240. Lab/Tech fee rate B applies.

MCE 321 Mechanical Design I (3-0-3). Explores stresses and deflection of engineering members; statistical considerations in design; steady and variable loading; design of screws, fasteners and nonpermanent joints; and welded joints. Prerequisites: MCE 215, MCE 223 and NGN 111.

MCE 322 Mechanical Design II (3-0-3). Covers mechanical springs; design of clutches, brakes and couplings; power transmission equipment (shafts, axles and spindles); flexible mechanical elements (flat and V-belts, wire ropes and chains); rolling and journal bearings; spur, helical, bevel and worm gears; and utilization of commercial computer-aided design software. Requires a design project. Prerequisite: MCE 321; prerequisite/concurrent: MCE 331.

MCE 325 Numerical Methods in Engineering (3-0-3). Covers basic concepts of computational methods; errors, accuracy and precision; numerical solutions of non-linear equations; direct and iterative methods for solving systems of linear algebraic equations; numerical differentiation and integration; interpolation, approximation and curve fitting; numerical solutions of ordinary and partial differential equations; and applications of computational methods using

computers. Prerequisites: MCE 234 and MTH 205; prerequisite/concurrent: MTH 221.

MCE 328 Dynamic Systems (3-0-3). Covers modeling, analysis and measurement of mechanical damped and undamped, forced and free vibrations in single and multiple degree-of-freedom dynamic systems. Emphasizes the processes of energy storage and dissipation and addresses and analogous elements when modeling different dynamic systems. Introduces basic concepts in system theory such as system state and stability. Includes elements of frequency response, Fourier and Laplace transform techniques, and total response from partial fraction expansion. Prerequisites: MCE 222, MCE 234 and ELE 225.

MCE 331 Manufacturing Processes (3-0-3). Introduces fundamentals of manufacturing processes including casting, forming, welding and machining operations. Covers economics of metal cutting and statistical quality control. Introduces basics of non-metals manufacturing and other contemporary topics in manufacturing. Prerequisites: MCE 215, MCE 223 and MCE 230.

MCE 332L Materials and Manufacturing Processes (0-3-1). Covers experimental determination of mechanical properties of engineering materials. Includes experiments covering different manufacturing processes such as casting, welding, forming and machining. Introduces new experiments on contemporary topics in materials and manufacturing. Corequisite: MCE 331. Lab/Tech fee rate B applies.

MCE 341 Thermodynamics II (3-0-3). Covers energy system analysis including modified power cycles, refrigeration and heat pump cycles, and air conditioning processes; thermodynamic relations and development of thermodynamic properties; and thermodynamics of non-reacting and reacting mixtures, combustion fundamentals and chemical reaction. Prerequisite: MCE 241.

MCE 344 Heat Transfer (3-0-3). Covers mechanisms of heat transfer, steady-state conduction solution in various geometries, electric network

analogy, fins, numerical methods in heat transfer, transient conduction, internal and external forced and natural convection with applications to heat exchangers, and fundamentals of thermal radiation. Prerequisites: MCE 240 and MCE 241.

MCE 345L Thermofluids Laboratory (0-3-1). Includes the experimental evaluation and analysis of the performance of energy systems, the thermal conductivity of solids and fluids, and the performance curves of pumps; and experiments on fluid flow, heat exchangers, cooling towers, internal combustion engines, and refrigeration and air conditioning systems. Prerequisites/concurrent: MCE 341 and MCE 344. Lab/Tech fee rate B applies.

MCE 397 Professional Training in Mechanical Engineering (0-0-0). Requires a minimum of five weeks of approved professional experience. Work undertaken must be documented in a formal report to the department by the beginning of the following term. Prerequisite: Junior II standing and approval of internship coordinator for the major. Registration fee applies.

MCE 410 Control Systems (3-0-3). Covers state variable models, feedback control system characteristics, performance and stability of feedback control systems, root-locus method, and stability in the frequency domain and design of feedback control systems. Includes control system design in the state space. Introduces digital control systems. Prerequisites: MCE 311 and MCE 328.

MCE 415L Dynamics and Control Systems Laboratory (0-3-1). Covers experiments on system dynamics, vibration and control systems. Includes experiments on dynamic systems' response in the time and frequency domains, and open loop and closed loop control of various mechanical systems. Uses CAD software for dynamic response and controller design. Prerequisite/concurrent: MCE 410. Lab/Tech fee rate B applies.

MCE 416 Kinematics and Dynamics of Machinery (3-0-3). Explores kinematics and dynamic analysis and synthesis of linkages (displacement,

velocity, acceleration and force analysis), cam-follower, gear train systems, balancing of rotating systems, dynamics of reciprocating engines and vibration signatures in machinery. Prerequisite: MCE 328.

MCE 423 Mechanical Vibrations (3-0-3). Provides a review of single and two degree-of-freedom vibration time and frequency response (free, transient and harmonic forcing). Includes analysis of multi-degree of freedom system (mass, stiffness and damping matrices). Covers modal analysis and frequency response functions (FRF), vibration analysis of continuous structures and finite element method. Covers vibration measurements and testing: vibration signal analysis, vibration isolation techniques, vibration measurements of active structures, including vibrating machines and rotating machinery. Prerequisite: MCE 328.

MCE 434 Fundamentals of Computer-Aided Design and Manufacturing (2-3-3). Introduces computer-aided design (CAD) and computer-aided manufacturing (CAM) technologies. Includes the following topics: the role of CAD/geometric modeling, parametric representation of curves and surfaces, viewing transformations, finite element analysis and optimization techniques, computer numerical control (CNC), part programming, and introduction to rapid prototyping. Prerequisites: MCE 234 and MCE 331. Lab/Tech fee rate B applies.

MCE 435 Advanced Mechanics of Materials (3-0-3). Examines basic material properties and their use in design. Includes the following topics: stress-strain-temperature relations, inelastic material behavior, energy methods, torsion of non-circular bars, non-symmetric bending of straight beams, curved beam theory and thick-walled cylinders. Prerequisite: MCE 321.

MCE 439 Computer Integrated Manufacturing (3-0-3). Covers fundamentals and principles associated with computer integrated manufacturing (CIM). Topics include: computer-aided process planning (CAPP), production planning and control, programming principles of numerical controlled

and computer numerical controlled systems, manufacturing systems design, manufacturing cells and flexible manufacturing systems. Prerequisites: MCE 234 and MCE 331.

MCE 443 Introduction to Engineering Fracture Mechanics (3-0-3). Examines Griffith criterion, mechanisms of fracture and crack growth, elastic crack-tip stress field, plane stress and plane strain, R-curve and J-integral, determination of stress intensity factors and elastic-plastic fracture mechanics. Introduces fatigue crack propagation. Covers the application of fracture mechanics to practical problems. Prerequisites: MCE 230 and MCE 321.

MCE 445 Energy Systems (3-0-3). Covers types of power plants, thermodynamics of power plants, combined power plants, systems components, design parameters, plant evaluation, efficiency calculations methods, modifications to improve system performance, cogeneration plants, thermodynamics and economics of cogeneration plants, system equipment, practical schemes of cogeneration plants, power plant economics, power plant planning, design concepts, power plant control, burner management and environmental impact of power plants. Prerequisites: MCE 341 and MCE 344.

MCE 446 Refrigeration and Air Conditioning (2-3-3). Introduces ventilation, air conditioning and refrigeration; classification of air conditioning systems; applied psychrometrics, design conditions, design of conventional and non-conventional systems; human thermal comfort and indoor air quality; load estimating fundamentals; heating and cooling loads calculations; vapor compression refrigeration cycles; refrigeration equipment and systems; energy estimation methods; air distribution systems and duct design; and system selection and design. Includes laboratory experiments and demonstrations. Prerequisites: MCE 341 and MCE 344. Lab/Tech fee rate B applies.

MCE 447 Internal Combustion Engines (2-3-3). Covers fundamental principles of engine operation and

applications, engine classifications, engine design and operating parameters, engine cycles, thermo-chemistry and fuels, air and fuel induction systems, fluid motion within combustion chambers, combustion in spark ignition engines, combustion in compression ignition engines, exhaust system, engine emission and air pollution, methods of emission control, engine friction and lubrication, and engine operating characteristics. Introduces modeling of real engine flow and combustion processes, as well as new trends in internal combustion engines. Includes laboratory experiments and demonstrations. Prerequisite: MCE 341. Lab/Tech fee rate B applies.

MCE 450 Energy Conservation and Management (3-0-3). Analyzes energy systems, including fossil fuels, steam, cogeneration, waste heat recovery, refrigeration and air conditioning systems; total energy management; energy management organization and approach; energy conservation in electrical load; lighting, building envelop, and insulation; economic energy analysis; energy auditing; monitoring and targeting; technical approaches and analyses; control; and energy management systems. Prerequisite: MCE 341.

MCE 464 Introduction to Robotics (3-0-3). Gives an overview of robotics, robot coordinate systems, and direct and inverse kinematics. Introduces manipulator dynamics and force control and compliance. Includes robot sensors and control strategies, and requirement of digital control of robots. Prerequisite: ELE 353 or prerequisite/concurrent: MCE 410.

MCE 466 Introduction to Mechatronics (2-3-3). Introduces the application of microprocessors and digital electronics to the design and application of control systems embedded in smart products. Covers sensors, actuators, software, system hardware and interfacing for mechanical engineering applications, as well as smart product design. Prerequisites: MCE 311 and MCE 328, or ELE 332L and ELE 353. Lab/Tech fee rate B applies.

MCE 473 Applied Finite Element Analysis (2-3-3). Introduces Finite

Element Method (FEM) and its application in different mechanical engineering problems. Includes theoretical and computational basics of finite element method, element formulation and assembly of global matrices. Uses commercial software to solve various engineering problems. Applications include solid mechanics, 2-D steady state heat conduction and fluid problems. Prerequisite: MCE 321; prerequisites/concurrent: MCE 328 and MCE 344. Lab/Tech fee rate B applies.

MCE 477 Composite Materials (3-0-3). Examines advanced composite materials and applications. Covers stress-strain relationship for an orthotropic lamina, laminate analysis, static strength of laminates, analysis of laminated beams, introduction to micro-mechanical analysis of laminae, design applications and computer program applications. Prerequisites: MCE 230, MCE 321 and MTH 221.

MCE 482 Intermediate Fluid Mechanics (3-0-3). Covers basic equations of fluid mechanics; differential relations of fluid flow, Navier-Stokes equations and solution of simple flows; viscous flow, Von Karman integral method, boundary layer equations with applications; potential flow, stream function, velocity potential, plane flow past closed-body shapes, fundamentals of compressible fluid flow, isentropic flow, normal shock waves and supersonic nozzles; and friction and heat interaction (Fanno and Rayleigh flows). Introduces computational fluid dynamics and use of commercial CFD software. Prerequisites/concurrent: MCE 325, MCE 345L and MTH 203.

MCE 487 Turbomachines (2-3-3). Explores classification of turbomachines, dimensional analysis and model testing; basic equations of fluid mechanics and Euler's theory; incompressible flow turbomachines (centrifugal and axial flow pumps), system matching, performance characteristics and cavitation; hydraulic turbines; compressible flow turbomachines (centrifugal and axial flow compressors), reaction ratio, stage loading, stage efficiency, surge and choking limits; and axial flow gas turbines. Prerequisites: MCE 240 and MCE 241. Lab/Tech fee rate B applies.

MCE 488 Introduction to Computational Fluid Dynamics (CFD) (2-3-3). Explores discretization techniques and solution algorithms; finite difference solutions to classical model equations pertinent to wave phenomena, diffusion phenomena, or equilibrium, boundary and initial conditions and stability considerations, application into equations of fluid mechanics and heat transfer, using software packages in solving CFD problems. Prerequisites: MCE 240 and MCE 325. Lab/Tech fee rate B applies.

MCE 490 Design Project I (1-0-1). Includes an open-ended, in-depth design project of mechanical engineering significance that includes the design, manufacturing and testing of a complete system of current interest to mechanical engineering. Students work under close supervision of one or more faculty members in a team environment. Students are required to present their findings at the end of the project in the form of a seminar and in a formal written report. The project outcomes must demonstrate that students have attained the level of competency needed for entry in the mechanical engineering profession. Emphasizes engineering ethics and communication skills. Prerequisite: senior standing.

MCE 491 Design Project II (0-6-2). Continues the work of MCE 490. Prerequisite: MCE 490.

NGN   Engineering

NGN 110 Introduction to Engineering and Computing (1-2-2). Examines common concepts in the engineering and computer science disciplines at AUS. Introduces word processing and spreadsheet software, team concepts, the roles and responsibilities of engineers and computer scientists, problem solving, principles of the design process, written and oral communication, professional ethics and sketching. Includes selected laboratories in different disciplines. Requires a design project meeting desired objectives in a team environment. Prerequisite: admission to the College of Engineering.

NGN 111 Introduction to Statistical Analysis (2-1-2). Covers descriptive statistics, graphical and numerical representation of information, measures of location and variation, elementary probability theory, and discrete and continuous probability models. Introduces statistical inference (estimation and hypothesis testing). Includes simple regression and correlation, designing experiments and use of statistical software. Presents examples from the engineering and related disciplines. Prerequisite/concurrent: MTH 103.

PET   Petroleum Engineering

PET 305 Fundamentals of Petroleum Operations (3-0-3). Introduces fundamental principles of petroleum production and recovery. Includes the following topics: petroleum geology, drilling, production and reservoir engineering, petroleum fluid properties, reservoir rock properties, reservoir energies and drive mechanisms, reservoir statics, and volumetric and material balance equation methods for estimating initial oil in place. Prerequisite: CHE 215 or CVE 240 or MCE 240.

PET 365 Petroleum Reservoir Engineering (3-0-3). Covers single-phase reservoir fluid flow fundamentals and applications to reservoir/well performance, well testing and water influx; general material balance equation and applications to oil and gas in place estimations and reservoir performance evaluation; and two-phase flow in porous media and immiscible displacement fundamentals. Prerequisites: MTH 205 and PET 305.

PET 375 Petroleum Drilling and Production (3-0-3). Covers rotary drilling system fundamentals, drilling fluids, formation pressures and casing setting, well completions, inflow performance modeling and causes of low productivity, wellbore flow mechanics and well deliverability, and well productivity improvement. Prerequisites: MTH 205 and PET 305.

PET 385 Formation Evaluation (3-0-3). Explores well testing and well logging as formation evaluation techniques. Covers topics such as solutions to reservoir fluid flow equations, including skin and storage; dimensionless variables and the superposition principle; interpretation of pressure build up, drawdown and interference tests using manual and application software techniques; logging environments; permeable zone logs (SP and Gamma Ray); resistivity log; porosity logs (neutron, density and acoustic); and interpretation of various log-suits using manual and application software techniques. Prerequisite: PET 305.

PET 414 Enhanced Oil Recovery (3-0-3). Introduces reservoir screening criteria for enhanced oil recovery methods, immiscible displacement, mobility control processes, thermal recovery, miscible displacement and chemical flooding methods. Prerequisites: PET 365.

Independent Study

Independent study is the umbrella term used to label two types of independent work: independent course and directed study.

Students are allowed to take one independent study. A second independent study could be approved by the student's associate dean for graduation purposes only.

Independent Course (1 to 4 credits). A course listed in the catalog but offered in an independent study format. The course is coded using the course number in the catalog.

Directed Study (1 to 4 credits). An investigation under faculty supervision beyond what is offered in existing courses. Prerequisites: minimum CGPA of 3.0, Junior II standing and consent of the instructor.

Directed study courses are numbered as 396 or 496 courses. The three-letter course prefix reflects the field of study of the course (e.g., independent study courses in chemical engineering are coded as CHE 396 or CHE 496).

For more details, please refer to Registration in Independent Study Courses in the Academic Policies and Regulations section of this catalog.

Special Topics Courses

Special Topics (1 to 4 credits). Presents a theoretical or practical topic proposed by the faculty beyond what is offered in existing courses. Can be repeated for credit. Prerequisites: topic specific. Lab/tech fee may apply.

Special topic courses are numbered as 194, 294, 394 or 494 courses. The three-letter course prefix reflects the field of study of the course.

Special topics courses at the 300 level require sophomore standing or above; 400-level special topic courses are restricted to junior standing and above.

Descriptions of particular special topics courses are made available in the college/school offering the course during registration.

School of Architecture and Design

ARC   Architecture

ARC 201 Architectural and Interior Design Studio I (12-0-6). (Cross-listed as IDE 201). Studio-based investigation of the fundamentals of making architectural form and space with emphasis on design inquiry, exploration and process. Concentrates on classic instances of form sources in architectural and interior design: function, experience, structure, construction and context. Digital media are integral to the studio, and students receive instruction in software appropriate for design purposes. Prerequisites: DES 100, DES 112, DES 121, DES 122, DES 132, MTH 003 or MTH 111 or MTH 103, and WRI 101 or WRI 102. Lab/tech fee rate B applies.

ARC 202 Architectural and Interior Design Studio II (12-0-6). (Cross-listed as IDE 202). Continues the content and purpose of ARC 201 with increased emphasis on design development and physical and technical resolution. Digital media are integral to the studio, and students receive continued instruction and practice in software appropriate for design. Prerequisites: ARC 201 or IDE 201. Lab/tech fee rate B applies.

ARC 213 Analysis and Methods in Architecture (3-0-3). (Formerly ARC 212). Introduces models of process and conception in architectural design, addressing fundamental concepts of method, spatial organization, material, structure and context as aspects of a comprehensive design intention. Course format includes lectures, seminars, field visits and readings. Assignments involve written and graphic communication. Prerequisite/concurrent: ARC 201 or IDE 201.

ARC 215 Descriptive Geometry (4-0-3). Introduces concepts and practices of the precise description of form in space. Includes systematic treatment of projection systems, including orthographic, oblique and perspective projections. Instruction and assignments involve both traditional and digital design media. Course format includes lectures and supervised applications. Prerequisite/concurrent: ARC 201 or IDE 201. Lab/tech fee rate A applies.

ARC 224 Modern Foundations of Art and Architecture (3-0-3). (Formerly ARC 220). Covers principles and practices fundamental to an understanding of the art and architecture of the modern era. Presentation integrates history and theory with practical design and application and proceeds topically rather than chronologically. Prerequisites: ARC 201 or IDE 201, and WRI 102.

ARC 225 Islamic Art and Architecture (3-0-3). Concentrates on common and regional elements of Arab and Islamic material culture. Follows developments from formation of an architectural language to diverse regional expressions in calligraphy, ceramics, metals, carpets and other media of artistic work. Relates stylistic phenomena to underlying spiritual and intellectual intent. Prerequisite: WRI 102.

ARC 232 Survey of Materials and Practices in Construction (3-0-3). (Formerly ARC 231). Surveys building materials and their properties, assembly sequences and methods of construction in the context of their influence on the form, cost and quality of the built environment. Uses a case study approach to demonstrate both the continuing evolution of the building process and the timeless nature of the issues involved. Course format includes lectures and supervised applications. Prerequisite: ARC 201 or IDE 201.

ARC 242 Statics and Mechanics of Materials for Architecture (3-1-3). (Formerly ARC 240). Covers static equilibrium of forces and free body diagrams; analysis of simple beams, columns and trusses; truss forms, configuration and performance; tributary loads, load path and load tracing in structural systems; simple funicular forms (arches and cables); geometric properties and forms of flexural elements (centroid and moment of inertia); internal forces (bending moment and shear force diagrams in beams); axial stress and strain; bending and shearing stresses; mechanical properties of common building materials; and tensile, compression, and bending and torsion tests for different building materials (steel, concrete, wood). Prerequisite: PHY 104; prerequisite/concurrent: ARC 201 or IDE 201. Lab/tech fee rate A applies.

ARC 265 Fundamentals of Digital Design (4-0-3). Introduces the concepts, tools and methods of three-dimensional design. Topics include 3D modeling, rendering and animation. Prerequisite/concurrent: ARC 201 or IDE 201. Lab/Tech fee rate A applies.

ARC 301 Architectural Design Studio III (12-0-6). Advances the fundamentals of the making of architectural form based on concepts derived from space, structure and building construction. Studio-based projects emphasize design strategies for small, multilevel, infill buildings with conventional, short-span structural systems. Prerequisites: ARC 202 or IDE 202, and PHY 104.

ARC 302 Architectural Design Studio IV (12-0-6). Includes studio-based projects with emphasis on the tectonics of building structure and envelope. Building case studies and design projects explore a range of material and construction system types including steel, wood, masonry and reinforced concrete. Prerequisites: ARC 213 and ARC 301.

ARC 311 Illustration and Rendering (4-0-3). (Cross-listed as IDE 311). Covers illustration and rendering techniques that enable students to express their ideas faster with more precise results. Covers freehand color drawing techniques using markers, color pencils and watercolors. Prerequisite/concurrent: ARC 201 or IDE 201.

ARC 316 Photography and Visual Representation (6-0-3). Introduces students to a broad range of photographic techniques and processes intended to facilitate the representation of

architectural concepts. Explores the history, theory and practices related to various techniques. Investigates the roles of narrative and sequence in photography. Experiments with combined, montaged and repeated images. Prerequisite: ARC 201 or IDE 201.

ARC 322 Global Issues in Architecture (3-0-3). Examines our emerging understanding of global issues confronting humankind, including population growth, declining reserves of non-renewable resources, etc. Gives an overview of the environmental impact of human communities through history. Prerequisites: ARC 224 and PHY 104.

ARC 324 History of Landscape Architecture (3-0-3). Presents an introductory survey of the history of gardens and the interrelationship of architecture and landscape architecture in various cultures throughout history. Prerequisite: ARC 471.

ARC 325 Ideas in Architecture (3-0-3). (Formerly ARC 321). Introduces the conceptual basis of the work of specific architects, historical and contemporary architectural historians and theoreticians, and schools of thought in architecture with an emphasis on the understanding of both written and visual analysis of built form and design. Prerequisite: ARC 224.

ARC 333 Rough Construction Process (3-0-3). (Formerly ARC 330). Offers an in-depth presentation of contemporary regional construction practices used to prepare the sites and to erect the building's basic structure, including site preparation; foundations; concrete, steel and timber structures; and masonry work. Discusses the basics of producing construction drawings. Prerequisite: ARC 232.

ARC 344 Structural Design for Architects (3-1-3). (Formerly ARC 342). Covers classification of structural elements and systems. Includes analysis and behavior of structural elements and systems (simple beams, comprehensive members, continuous beams, frames, plates, membranes and shells): the relationship between behavior of structural elements used in architecture and their forms; the structural design process, codes and specifications; qualitative and preliminary selection of

steel and concrete structural elements; types and behavior of structural connections; and types and behavior of foundations. Prerequisite: ARC 242.

ARC 354 Environmental Energies and Building Form (3-0-3). (Formerly ARC 351). Studies the physical phenomena that make climate (rain, humidity, temperature, wind, sun, etc.) influence buildings. Covers heat transfer methods, solar radiation, vapor in air, air leakage and water condensation and wind movement. Studies indoor thermal environment and thermal comfort of building occupants. Discusses examples of how these phenomena are used in building design. Prerequisite: PHY 104; prerequisite/concurrent: ARC 301.

ARC 364 Introduction to Computer-Aided Drawing (0-2-1). (Cross-listed as IDE 364). (May test out of course). Provides training for mainstream CAD applications using the Windows operating system. Develops basic familiarity and proficiency with applications commonly encountered during professional training. Graded as Pass/Fail. Prerequisite: ARC 202 or IDE 202. Lab/tech fee rate A applies.

ARC 365 Computer-Aided Design (4-0-3). (Formerly ARC 371). Systematically introduces computer-aided architectural design. Discussion and training focuses on a variety of CAAD applications in order to show the similarities (basic principles of CAAD) as well as the idiosyncrasies of the individual applications. Includes modeling of existing buildings utilizing CAAD applications from the core software suite utilized by SA&D. Topics include objects, layers, classes, dimensions, units, scales, groups, symbols, different description models in 3D, levels of precision, different construction methods and work strategies. Prerequisite: ARC 201 or IDE 201. Lab/tech fee rate A applies.

ARC 366 Applied Computer-Aided Design (4-0-3). (Cross-listed as IDE 366). Systematically introduces the basic practice of computer-aided architectural design. Presentation and training focuses on two mainstream production CAAD applications, ArchiCAD and AutoCAD, with the intent to develop basic familiarity

and proficiency with the applications most likely be encountered in offices during professional training. Introduces AutoCAD on PCs running the Windows NT operating system. Extends the topics introduced in ARC 365 to include detailed treatment of tool palettes and inter-platform compatibility. Prerequisite: ARC 201 or IDE 201. Lab/tech fee rate A applies.

ARC 374 Environmentally Sustainable Design (4-0-3). (Cross-listed as IDE 374). Develops a greater focus on holistic and sustainable approaches to design. Covers issues such as demand and supply of energy and water and the generation of waste. Reiterates the principles of reduce, reuse and recycle. Predominant emphasis is on practical strategies directly applicable in design. Material is presented as lectures and seminars, supplemented with readings. Prerequisite/concurrent: PHY100 or PHY 101 or PHY 104.

ARC 397 Internship in Architecture I (0-0-0). Requires a minimum of six weeks (normally 240 hours) of approved professional experience. Requires students to document the work undertaken in a formal report submitted to the department by the beginning of the following term. Graded as Pass/Fail. Registration fee applies. Prerequisite: ARC 302 and approval of internship coordinator.

ARC 401 Architectural Design Studio V (12-0-6). Requires design of open site projects of moderate scale with emphasis on building form derived from the analysis of site context and site planning strategies. Prerequisites: ARC 224, ARC 232, ARC 242 and ARC 302.

ARC 402 Architectural Design Studio VI (12-0-6). Comprises a comprehensive building design project integrating building technologies with other non-technical design issues. Introduces programming and includes a detailed, design development of an aspect of building technology. Prerequisites: ARC 325, ARC 333, ARC 397 and ARC 401; prerequisite/concurrent ARC 354.

ARC 424 Evolution of Cities (3-0-3). Introduces the origin, growth and development of cities throughout the history. Examines the various

socioeconomic, historic, political and environmental forces that help explain city form. Explores case studies of sites from ancient times to the present with particular emphasis on cities in Islamic and Middle Eastern cultures. Prerequisite: ARC 202 or IDE 202.

ARC 434 Finish Construction Process (3-0-3). (Formerly ARC 431). Examines in-depth the trades and processes involved in finishing a building. These are the major components that are built following the erection of the building's basic structure, including stairs, doors, windows, partitions, ceilings, floors, claddings and joints. Discusses design considerations and construction methods with hands-on experience in producing detailed drawings of some elements. Prerequisite: ARC 333.

ARC 436 Working Drawings (4-0-3). (Formerly ARC 472). Introduces the production of working drawings used in the building industry. A preliminary building design is developed to produce a set of complete architectural working drawings. Emphasizes the use of computer technology in drawing production and information coordination. Prerequisite: ARC 301 or IDE 301.

ARC 455 Environmental Control Systems (3-0-3). (Formerly ARC 452). Presents the basic principles for the selection and the design of the main environmental control systems in buildings, including plumbing, heating, ventilation, air conditioning, electric, lighting, and fire suppression and protection systems. Prerequisite: ARC 354.

ARC 461 Project Management (3-0-3). (Cross-listed as IDE 461 and DES 461). Introduces the basic and advanced concepts of running design projects. Explores the design process and project phases, analyzing them in detail under the project management concept of delivering projects "on time, on budget, every time." Prerequisite: senior standing.

ARC 462 Design Management (3-0-3). (Formerly ARC 460). Introduces the principles and practices of the economic and commercial aspects of architectural and design practice in a global economy. Includes microeconomics theory as it applies to private enterprise:

basic business economics, planning and management. Gives attention to the processes and skills required in establishing an independent architectural office. Prerequisite: ARC 397 or IDE 397 or DES 397.

ARC 465 Advanced Computer-Aided Design (4-0-3). (Cross-listed as IDE 465). Concentrates on the specific demands on CAD systems by the architecture and building professions. Applies CAD systems to the different phases of planning: preliminary design, design, construction documents, extraction of volumetric data and transfer to spreadsheet and/or database software, rendering software, post-rendering work in pixel-editing software, technical drawing layout software, etc. Prerequisite: ARC 301 or IDE 301. Lab/tech fee rate B applies.

ARC 471 Site Planning (4-0-3). Focuses on the site as a fundamental component of building design. Examines the interrelationship of intended site use with the environment. Examines topography, vegetation and landscape, climate, geography as well as theoretical aspects of site development. Emphasizes the synthesis of programmatic and environmental requirements into a coherent concept for building placement and site improvements. Prerequisite: ARC 302.

ARC 473 Introduction to Landscape Architecture (4-0-3). Introduces the techniques of site inventory, analysis and design. Specific skills in reading and modifying topography, understanding micro-climatic influences, vehicular and pedestrian access, formal and functional relationships to surrounding buildings, respect for ecology and other site and site-use factors are treated in lecture/demonstration class settings. Prerequisite: ARC 302.

ARC 493 Study Abroad (1 to 3 credits). Features on-site visits offering the opportunity to experience first-hand regional and international design practices, highlighting particular themes relevant to the specific location. Department permission is required for enrollment and credit. Prerequisite: ARC 302 or IDE 302.

ARC 497 Internship in Architecture II (0-0-0). Requires a minimum of eight

weeks (normally 320 hours) of on-the-job experience with an approved professional firm. Requires students to document the work undertaken in a formal report submitted to the department by mid-semester of the following term. Graded as Pass/Fail. Prerequisite: ARC 402 and approval of internship coordinator. Registration fee applies.

ARC 498 Studio Abroad (3 to 6 credits). Provides studio activities conducted in regional and international sites promoting a global-oriented approach to design. Prerequisite: studio specific.

ARC 505 Architectural Design Studio VII (12-0-6). Requires research-directed investigation involving architecture and urban design. Prerequisites: ARC 344 and ARC 402.

ARC 506 Architectural Design Studio VIII (12-0-6). Research-directed design studio based on a topic related to some aspect of architectural design (history/theory, technology, representation, urban or heritage resource management, etc.). Students pursue directed research in support of a design investigation. Prerequisites: ARC 402 and ARC 497.

ARC 520 Architectural Criticism (4-0-3). Addresses a coherent understanding of contemporary architecture by focusing on readings, discussions and presentations in order to mature the student's cognition to today's architectural strategies. Prerequisite: ARC 325.

ARC 561 Construction Management (3-0-3). Studies in-depth the interrelationships among the various professional disciplines in the building and construction industry as they pertain to issues of management and planning of complex construction projects. Reviews standard practices of tendering, contracting, quantity surveying, cost estimation, supervision, quality control and economy. Prerequisite: ARC 301 or IDE 301.

ARC 571 Fundamentals of Urban Planning (3-0-3). (Cross-listed as UPL 501). Introduces the discipline of urban planning. Surveys the history of the field as well as its links with other fields of environmental studies such as

architecture, urban design, geography, engineering, etc. Provides an overview of what planners do and the tools they use in their practice. Prerequisites: ARC 402 and CGPA of 2.5 or above.

ARC 573 Principles of Urban Design (3-0-3). (Cross-listed as UPL 582). Examines major concepts, principles and theories of urban design. Reviews the historic development of urban design as a professional field and surveys current urban design issues, trends and practices in both the Western and non-Western/Islamic contexts. Prerequisites/concurrent: ARC 402 and CGPA of 2.5 or above.

ARC 591 Final Project Research (6-0-3). Requires students to choose a design topic with the guidance of an advisor and approval of the faculty. Each student prepares an individual program for ARC 592 Final Project Design, concluding with a formal, bound document. Prerequisites: ARC 344, ARC 402, ARC 434, ARC 455, ARC 462 and consent of the department.

ARC 592 Final Project Design (12-0-6). Requires individual resolution of the design problems initiated in ARC 591, prepared under the guidance of a selected faculty advisor, presented and defended in a formal public critique. This course may substitute for ARC 506. Prerequisites: ARC 497, ARC 505, ARC 591 and consent of the department.

DES   Design

DES 100 Digital Media in Design (4-0-3). Introduces computer-based tools and digital media. Develops a working knowledge of the computer operating system, core design-specific applications and interapplication workflow. Investigates iterative processes of form development and transformation within a digital environment. Students cannot obtain credit for both MCM 100 and DES 100. Restricted to SA&D majors. Lab/tech fee rate A applies.

DES 111 Descriptive Drawing I (6-0-3). Introduces students to the fundamental principles of observational and analytical drawing. Explores various representational and analytical approaches through assignments that encourage the development of skills needed to effectively represent and communicate visual information. Restricted to SA&D students.

DES 112 Descriptive Drawing II (6-0-3). Further introduces the student to the principles of drawing. Emphasizes the development of an individual approach to representation, and a wide variety of assignments encourages the student to develop an understanding of a range of techniques and materials of drawing. Restricted to SA&D students. Prerequisite: DES 111.

DES 121 Introduction to Architecture and Design History (3-0-3). Explores a global approach to art, architecture and design. Investigates the technological, religious and social forces that helped to reveal the universality of the human impulse to design. Examines ideas, techniques and design methods thematically within a chronological framework covering the time span from the Stone Age to the Industrial Revolution.

DES 122 Modern Developments in Architecture and Design (3-0-3). Explores the developments in architectural thinking and in all aspects of design during the modern era. Investigates thematically the evolution of ideas and processes that shaped contemporary movements in architecture and design. Discusses contemporary concerns, forms, ideas and attitudes of 20th and 21st century design and architecture.

DES 131 Design Foundations I (6-0-3). Introduces the principles, conceptual and critical skills, and the techniques of design. Students learn to observe the world critically and meticulously and to analyze both the broad structures and the small details of visual phenomena. Students master skills needed to conceptualize and communicate their observations through traditional means (drawing, painting and drafting), as well as through digital and other media. They learn craft and acquire making skills with a variety of materials and methods. Class assignments, critiques and presentations will enable students to begin developing

an aesthetic awareness coupled with critical thinking skills. Restricted to SA&D students.

DES 132 Design Foundations II (6-0-3). Continues the principles of design, with an emphasis on testing aesthetic and perceptual assumptions. Students develop problem-solving techniques through individual design solutions. While Design I focuses on skills and the discovery and critical understanding of the phenomenal world, Design II is primarily concerned with manipulation and synthesis, and the design and creation of unique two- and three-dimensional design concepts. Restricted to SA&D students. Prerequisite: DES 131.

DES 141 Introductory Painting (6-0-3). Introduces the fundamentals and principles of observational painting. Explores various representational strategies, methods, materials and techniques with exercises and assignments designed to develop skills needed to communicate visual information in a painterly context.

DES 142 Painting: The Practice of Color (6-0-3). Suitable for both beginners and intermediate-level students interested in learning about color and paint. Builds on students' knowledge of the principles, techniques and critical skills developed in Introductory Painting, as well as introduces new students to the basic theories of color and paint application.

DES 160 Introduction to Photography (3-0-3). Provides a hands-on introduction to photographic practice. Covers camera control, film processing and printing in a photography darkroom as well as the basics of digital applications. Introduces photographic language and considerations through the study of examples taken from the history of photography. Not open to ARC, IDE, MUM and VIS students. Lab/tech fee rate A applies.

DES 200 Communication Design (6-0-3). Introduces the materials and techniques most commonly used by designers in the field of communication and stresses the development of skill in these areas through the completion of class assignments and projects representative of the concepts discussed

in class. Students develop a deeper understanding of visual communication and become well-versed in the capacities and restrictions inherent in the materials and techniques most commonly used by professional designers. Not open to multimedia design and visual communication students. Prerequisite: DES 100. Lab/tech fee rate A applies.

DES 230 Digital Media in Communication Design (6-0-3). Continuation of DES 100. Builds on the development and skills associated with digital design. Helps students gain a more complete understanding of how digital media is used in electronic design, through working with the latest in industry-specific hardware and software, and learn the capabilities available to communication designers. Emphasizes the creation, preparation and presentation of finished digital media projects. Not open to multimedia design and visual communication students. Prerequisite: DES 100. Lab/tech fee rate A applies.

DES 231 History of Design (3-0-3). Explores topics in the history of design and visual communication. Introduces recognized schools of design philosophy and/or practice. Explores the relationship between design and culture. Prerequisites: WRI 102 and sophomore standing.

DES 300 Design Project (6-0-3). Further develops a practical understanding of designing for a purpose. Requires students to define a project that concludes with a presentation to a virtual client and an evaluation of the success of the project. Not open to multimedia design and visual communication students. Prerequisite: DES 200.

DES 310 Introduction to Video and Audio Production (6-0-3). Provides a basic, hands-on introduction to the practical techniques of scriptwriting, video and audio production, and post-production editing using computer-based, non-linear technology. Develops students' skills through the completion of individual and group projects that are representative of the concepts discussed in class. Helps students develop some practical abilities in

the use of a comprehensive range of production equipment while gaining a deeper understanding and appreciation of the materials and techniques most commonly used by professional producers, directors and editors of educational, commercial, industrial and dramatic media programs. Not open to multimedia design and visual communication students. Prerequisite: DES 100. Lab/tech fee rate A applies.

DES 320 Introduction to Web Design (6-0-3). Introduces website design. Students learn to use a variety of graphic design and web page authoring tools, and Internet technologies and other relevant issues are discussed. Students are expected to learn and use software packages for developing real-life web pages. Not open to multimedia design and visual communication students. Prerequisite: DES 100. Lab/tech fee rate A applies.

DES 397 Internship in Design Management (0-0-0). Requires a minimum of six weeks (normally 240 hours) of approved professional experience. Requires students to document the work undertaken in a formal report submitted to the department by the beginning of the following term. Graded as Pass/Fail. Prerequisite: VIS 361 and approval of internship coordinator. Registration fee applies.

DES 461 Project Management (3-0-3). (Cross-listed as ARC 461 and IDE 461). Introduces basic and advanced concepts of running design projects. Explores the design process and project phases, analyzing in detail under the project management concept of delivering projects "on time, on budget, every time." Prerequisite: senior standing.

DES 462 Design Management (3-0-3). Introduces the principles and practices of the economic and commercial aspects of design practice in a global economy. Includes microeconomics theory as it applies to private enterprise: basic business economics, planning and management. Gives attention to the processes and skills required in establishing an independent design office. Prerequisite/concurrent: DES 397.

DES 471 Managing the Design Process (3-0-3). Introduces theoretical

aspects of project organization. Involves research and planning an event and exhibition. Offers the opportunity to study the design process and what is necessary within a group to make a large, multifaceted project happen. Includes the following topics: division of responsibilities, utilizing timelines and developing presentation skills. Prerequisite: DES 300.

DES 472 Exhibition Project (3-0-3). Introduces students to a keynote project. Involves the real planning and exhibition of the final portfolios produced by the senior visual communication and multimedia students to the professional design community. Provides experience in producing and designing exhibitions. Utilizes design management skills in developing a project that relies on a working timeline and organization. Prerequisite: junior standing.

DES 493 Study Abroad (1 to 3 credits). Features on-site visits offering the opportunity to experience first-hand regional and international design practices, highlighting particular themes relevant to the specific location. Department permission is required for enrollment and credit. Prerequisites: second-year standing, consent of the department, and ARC 202 or IDE 202 or MUM 202 or VIS 202.

DES 498 Studio Abroad (3 to 6 credits). Provides studio activities conducted in regional and international sites promoting a global-oriented approach to design. Prerequisite: studio specific.

HRM   Heritage Management

HRM 201 History of Material Culture in the Arabian Gulf I (3-0-3). Traces the historical development of art and architecture in the Arabian Gulf region. Examines the material culture of the ancient Middle East, medieval Islam and its associated pan-Islamic and regional styles. Pays specific attention to the art and architecture of the United Arab Emirates. Prerequisite: WRI 102.

HRM 202 History of Material Culture in the Arabian Gulf II (3-0-3). Charts

the development of art and architecture in the Arabian Gulf after the 15th century, including the impact of non-Arab colonization on the material culture of the Emirates. Examines the development of contemporary artistic and architectural expression. Prerequisite: WRI 102.

HRM 331 Traditional Regional Material and Climate (3-0-3). Introduces how traditional building types were molded by indigenous building materials and climate. Students visit and explore the existing sites to study design responses to lifestyle and climate traditionally employed in the region.

IDE   Interior Design

IDE 201 Architectural and Interior Design Studio I (12-0-6). (Cross-listed as ARC 201). Investigates the fundamentals of making architectural form and space with emphasis on design inquiry, exploration and process. Concentrates on classic instances of form sources in architectural and interior design: function, experience, structure, construction and context. Digital media are integral to the studio, and students receive instruction in software appropriate for design purposes. Prerequisites: DES 100, DES 112, DES 121, DES 122, DES 132, MTH 003 or MTH 111 or MTH 103, and WRI 101 or WRI 102. Lab/tech fee rate B applies.

IDE 202 Architectural and Interior Design Studio II (12-0-6). (Cross-listed as ARC 202). Continues the content and purpose of ARC/IDE 201, with increased emphasis on design development and physical and technical resolution. Digital media are integral to the studio, and students receive continued instruction and practice in software appropriate for design. Prerequisite: IDE 201. Lab/tech fee rate B applies.

IDE 223 History of Interior Design (3-0-3). (Formerly IDE 320). Gives an overview of interior design's historical development as a collective expression of art, architecture, science and culture as by-product of its own time and as a resource for stimulating new ideas. The history of interior design draws upon several different fields of scholarly study. It is based on architectural history but incorporates unique interior space typology, specific elements of the interior decorative arts and ornamentation including furniture, metal work, glass, ceramics and textiles. Prerequisite/concurrent: IDE 201 or ARC 201.

IDE 235 Interior Construction (4-0-3). (Formerly IDE 204). Covers basic interior detailing, millwork and cabinetry elements, which must be developed and coordinated to construct interior space. Detailing, technical drawings, specifications and scheduling are therefore integral to design development. Prerequisite/concurrent: IDE 201 or ARC 201.

IDE 236 Interior Materials (4-0-3). Introduces interior finish materials by examining their perceptual attributes and visual and tactile qualities, along with their technical and practical applications. Presents composition of materials, texture, installation and maintenance, covering several categories of applied finishes: floor finishes, wall and ceiling finishes, window treatments, furniture and joinery finishes, and others. Prerequisite/concurrent: IDE 235 or ARC 232.

IDE 251 Color and Light (4-0-3). (Formerly IDE 310). Introduces the fundamentals, principles and art of lighting and color, and their visual and physical effects in interior design. Explores light and color as important elements in interior space through the study of related perceptual and physical factors. Introduces relevant terminology to define light and color as attributes of architectural and interior space: illumination levels and temperatures, light sources, fixtures, materials, etc. Prerequisites/concurrent: IDE 201 or ARC 201, and PHY 104.

IDE 301 Interior Design Studio III (12-0-6). Focuses on advanced spatial concepts relevant to contemporary practices in the field. Investigates the role of precedents and analogue spaces in generating conceptual ideas. Examines the expressive potential of interior elements (floor, wall, stairs, openings, etc.) and materials. Develops an understanding of the relationship between interior elements, materials and the architectural shell. Explores various design scales with a specific focus on how resolved technical details can express formal ideas. Prerequisites: IDE 202 or ARC 202, and PHY 104.

IDE 302 Interior Design Studio IV (12-0-6). Continues the intent and purpose of IDE 301. Emphasizes the development of programming strategies within a defined cultural context. Concentrates on the phenomenological aspects of interior environments and explores the spatial and perceptual implications of artificial lighting and materials. Explores the conceptual and spatial implications of furniture layout, selection and design. Prerequisite: IDE 301.

IDE 311 Illustration and Rendering (4-0-3). (Cross-listed as ARC 311). Covers illustration and rendering techniques that enable students to express their ideas faster with more precise results. Covers freehand color drawing techniques using markers, color pencils and watercolors. Prerequisite/concurrent: IDE 201 or ARC 201.

IDE 324 Modern Practices in Interior Design (3-0-3). Focuses on 19th and 20th century interior design theories and practices, exposing students to the various international schools of thought. Lectures and discussions focus on practitioners who have influenced contemporary practices worldwide. Prerequisite: IDE 223.

IDE 335 Furniture Design Basics (4-0-3). (Formerly ARC 410). Explores the basic function and design of furniture as it relates to human factors, such as anthropometrics and ergonomics. Provides a link between historical, theoretical and practical experience. Defines the elements of form, function and aesthetic by exploring experimental concepts and adopting alternative ways of thinking about the objects that surround us. Applies furniture models built to scale, or other presentation techniques, to effectively support the evolution of new concepts. Prerequisite: IDE 235 or ARC 232.

IDE 352 Environmental Control Systems in Interior Design (2-3-3). (Formerly ARC 352). Provides an integrated presentation of environmental control systems (lighting, heating, ventilating, air conditioning, sanitary and acoustics) with special attention to the needs of interior designers. Presents systems as they influence one another and as they constrain interior space planning and design. Prerequisite: PHY 104. Prerequisite/concurrent: IDE 201 or ARC 201.

IDE 364 Introduction to Computer-Aided Drawing (0-2-1). (Cross-listed as ARC 364). Provides training for mainstream CAD applications using the Windows operating system. Develops basic familiarities and proficiency with applications commonly encountered during professional training. Graded as Pass/Fail. Prerequisite: IDE 202 or ARC 202. Lab/tech fee rate A applies.

IDE 374 Environmentally Sustainable Design (4-0-3). (Cross-listed as ARC 374). Develops a greater focus on holistic and sustainable approaches to design. Covers issues such as demand and supply of energy and water, and the generation of waste. Reiterates principles of reduce, reuse and recycle. Predominant emphasis is on practical strategies directly applicable in design. Material is presented as lectures and seminars, supplemented with readings. Prerequisite/concurrent: PHY 100 or PHY 101 or PHY 104.

IDE 397 Internship in Interior Design (0-0-0). Requires a minimum of six weeks (normally 240 hours) of on-the-job experience with an approved professional firm. Requires students to document the work undertaken in a formal report submitted to the department by mid-semester of the following term. Graded as Pass/Fail. Prerequisite: Junior II standing and approval of internship coordinator. Registration fee applies.

IDE 405 Interior Design Studio V (12-0-6). Requires a comprehensive design project integrating all aspects of design, theoretical, technological and representational, allowing students various scales of investigation within one design problem. Prerequisite: IDE 302 or ARC 302.

IDE 406 Interior Design Studio VI (12-0-6). Research-directed design studio focusing on a topic related to some aspect of architectural design (history/theory, technology, representation, heritage resource management, etc.). Students pursue directed research in support of a design investigation. Prerequisites: IDE 397 and IDE 405.

IDE 432 Advanced Detailing (4-0-3). Continues the work of IDE 235 Interior Construction, focusing on advanced levels of detailing, design development, conceptual and technical drawing, specifications and craftsmanship. Prerequisite: IDE 235 or ARC 232.

IDE 460 Exhibition Design (4-0-3). (Formerly IDE 503). Equips students with the essential research, planning and design tools to conceive, prepare and produce persuasive exhibition and educational environments such as product shows, museums and gallery interiors. Explores issues of planning, lighting, stagecraft, narrative composition and human perception. Prerequisite: IDE 202 or ARC 202.

IDE 461 Project Management (3-0-3). (Cross-listed as ARC 461 and DES 461). (Formerly IDE 431). Introduces the basic and advanced concepts of running design projects. Explores the design process and project phases, analyzing them in detail under the project management concept of delivering projects "on time, on budget, every time." Prerequisite: senior standing.

IDE 462 Design Management (3-0-3). Introduces the principles and practices of the economic and commercial aspects of architectural and design practice in a global economy. Includes microeconomics theory as it applies to private enterprise: basic business economics, planning and management. Gives attention to the processes and skills required in establishing an independent architectural office. Prerequisite: ARC 397 or IDE 397.

IDE 465 Advanced Computer-Aided Design (4-0-3). (Cross-listed as ARC 465). Concentrates on the specific demands on CAD systems by the architecture and building professions.

Covers application of CAD systems to the different phases of planning: preliminary design, design, construction documents, extraction of volumetric data and transfer to spreadsheet and/or database software, rendering software, post-rendering work in pixel-editing software, technical drawing layout software, etc. Prerequisite: ARC 301 or IDE 301. Lab/tech fee rate B applies.

IDE 491 Final Project Research (6-0-3). (Formerly IDE 401). Requires students to choose a design topic with the guidance of an advisor and approval of the faculty. Each student prepares an individual program for IDE 492 Final Project Design, concluding with a formal, bound document. Prerequisites: IDE 302, IDE 335, IDE 352 and consent of the department.

IDE 492 Final Project Design (12-0-6). (Formerly IDE 490). Requires individual design resolution based upon the research findings initiated in IDE 491. The final project is developed under the guidance and advice of a faculty member and is presented and defended in a formal public jury. This course may substitute for IDE 406. Prerequisites: IDE 397, IDE 405, IDE 491 and consent of the department.

IDE 493 Study Abroad (1 to 3 credits). Features on-site visits offering the opportunity to experience first-hand regional and international design practices, highlighting particular themes relevant to the specific location. Department permission is required for enrollment and credit. Prerequisite: ARC 302 or IDE 302.

IDE 498 Studio Abroad (3 to 6 credits). Provides studio activities conducted in regional and international sites promoting a global-oriented approach to design. Prerequisites: consent of department, and ARC 302 or IDE 302.

MUM Multimedia Design

MUM 301 Design Studio III (6-0-3). (Cross-listed as VIS 301). Requires students to apply a variety of methods and strategies to explore the relationship

between visual form and content. Prerequisite: VIS 202.

MUM 302 Design Studio IV (6-0-3). (Cross-listed as VIS 302). Explores the use of typography as an expressive visual vehicle through experimentation, applied with a range of media and methods. Prerequisites: MUM 301 or VIS 301

MUM 310 Film Production I (6-0-3). (Formerly MUM 210). Introduces the process, development and production of film projects. Provides "hands-on" experience including production planning, pre-visualization, story boarding and location production. Screenings of significant films provide a historical context for the production process. Prerequisite: VIS 230. Lab/tech fee rate B applies.

MUM 311 Animation I (6-0-3). Introduces students to the principles of animation through exploration of traditional animation techniques, concepts and storyboarding. Emphasizes the production of images in motion and expression utilizing traditional or digitally aided processes. Prerequisite: VIS 230. Lab/Tech fee rate A applies.

MUM 312 Film Production II (6-0-3). (Formerly MUM 211). Continuation of MUM 310. Includes project-based studies in film development, production and non-linear computer-based post-production. Screenings of significant films provide a technical and critical context for the production process. Prerequisite: MUM 310. Lab/tech fee rate B applies.

MUM 320 Web Design I (6-0-3). Explores web design through examination of developments in digital media and Internet enabling technologies. Introduces communication design practices for the World Wide Web. Considers information design, navigation plans and elements of interactivity in designing web pages. Requires students to design, author and edit web pages to create a coherent website. Prerequisite: VIS 230. Lab/tech fee rate A applies.

MUM 330 Web Design II (6-0-3). Explores the process of web design from proposal to production through the fusion of content and interactivity. Studies dynamic web environments through the exploration of interactive authoring tools. Focuses on the tools and techniques of website development and management. Prerequisite/concurrent: MUM 320. Lab/tech fee rate A applies.

MUM 331 Animation II (6-0-3). Builds on the techniques learned in MUM 311. Addresses strategies in animation and modeling: texture mapping, physics, dynamics, lighting and rendering for contemporary professional output. Prerequisite: MUM 311. Lab/tech fee rate A applies.

MUM 340 Interactive Environments (6-0-3). Focuses on design and implementation of interactive applications and environments. Includes design projects that focus on narrative, content development, information architecture, patterns of interactive structures, interface design, user-orientation and user-engagement. Requires students to define interactive applications through prototyping and progressively work on testing and implementing the design solutions. Includes interactive design projects such as instructional and learning systems, computer games, interactive fiction and multimedia-supported business applications. Prerequisite: MUM 320. Lab/Tech fee rate A applies.

MUM 397 Internship in Multimedia Design (0-0-0). Requires a minimum of six weeks (normally 240 hours) of on-the-job experience with an approved professional firm. Requires students to document the work undertaken in a formal report submitted to the department by mid-semester of the following term. Graded as Pass/Fail. Prerequisite: VIS 361 and approval of internship coordinator. Registration fee applies.

MUM 401 Design Studio V (6-0-4). (Cross-listed as VIS 401). Requires students, through a series of hypothetical design projects, to present and critically evaluate their progress within the context of contemporary expectations. Prerequisite: MUM 302 or VIS 302.

MUM 402 Design Studio VI (6-0-4). (Cross-listed as VIS 402). Comprises self-directed senior design projects developed in consultation with faculty.

Requires students to produce a portfolio of previous work in addition to their senior project. Prerequisite: MUM 401 or VIS 401.

MUM 410 Multimedia Design Senior Studio I (6-0-3). Addresses strategies and techniques for advanced two and three-dimensional creation in a time-based media environment. Focuses on composing multiple visual and audio components. Prerequisite/concurrent: MUM 401. Lab/tech fee rate A applies.

MUM 411 Film Production III (6-0-3). Offers advanced studies in film development, production and non-linear computer-based post-production for third- and fourth-year students. Screenings of significant films provide a technical and critical context for the production process. Prerequisite: MUM 310 or MUM 312. Lab/Tech fee rate B applies.

MUM 412 Documentary Film Production (6-0-3). Establishes the fundamentals of documentary film production. Requires students' involvement in both production and editing, as well as in studying documentary works that exemplify the theory and practice of this genre. Prerequisites: MCM 100, MUM 310 or MCM 281, and junior standing. Lab/tech fee rate B applies.

MUM 420 Multimedia Design Senior Studio II (6-0-3). Emphasizes the production of cohesive and comprehensive multimedia works through the integration of multiple threads of narrative content. Students work individually or in groups to accomplish both development and production tasks in a capstone studio experience. Prerequisite: MUM 410.

MUM 493 Study Abroad (1 to 3 credits). Features on-site visits offering the opportunity to experience first-hand regional and international design practice, highlighting particular themes relevant to the specific location. Department permission is required for enrollment and credit. Prerequisite: VIS 202.

MUM 498 Studio Abroad (3 to 6 credits). Provides studio activities conducted in regional and international sites promoting a global-oriented approach to design. Prerequisites: studio specific.

UPL Urban Planning

UPL 201 Introduction to Urban Planning (3-0-3). Introduces the discipline of urban planning. Surveys the history of the field as well as its links with other fields of environmental studies, such as architecture, urban design, geography and engineering. Provides an overview of what planners do and the tools they use in their practice. Prerequisite: WRI 102.

VIS Visual Communication

VIS 201 Design Studio I (6-0-3). Builds upon the foundation experience. Introduces formal elements and principles of design as they relate to letterform and image making. Prerequisites: DES 100, DES 112, DES 121, DES 122, DES 132, MTH XXX, and WRI 101 or WRI 102. Lab/tech fee rate A applies.

VIS 202 Design Studio II (6-0-3). Engages the formal elements and principles of design in a process-based environment that transforms ideas and concepts into visual communication. Prerequisite: VIS 201. Lab/tech fee rate A applies.

VIS 213 Illustration Drawing (6-0-3). Builds on skills introduced in foundation drawing and encourages students to utilize a wide variety of illustration media and techniques. Class projects focus on drawing from life, photo reference gathering techniques, and visualizing concepts and ideas within the genre of commercial illustration. Prerequisites: VIS 201, VIS 221 and VIS 230.

VIS 221 Photography Basics (6-0-3). Introduces basic photographic skills of camera control and photographic practice through the use of digital technology. Introduces and explores topics relating to the history and theory of photographic practice. Prerequisites: DES 100, DES 111, DES 121, DES 131, MTH XXX, and WRI 101 or WRI 102. Lab/tech fee rate B applies.

VIS 230 Digital Media in Visual Communication (6-0-3). (Formerly MUM 230). A continuation of DES 100 that further develops the skills associated with digital design. Working with PostScript illustration, bitmapped images and desktop publishing, students acquire interactive design skills and use industry specific software to create vector-based and bitmapped images. Introduces layout and desktop publishing. Class discussion encourages students to explore various design concepts. Emphasizes the creation, preparation and printing of finished designs and an interactive design portfolio. Prerequisites: DES 100, DES 112, DES 121, DES 132, MTH XXX, and WRI 101 or WRI 102. Lab/tech fee rate A applies.

VIS 260 Critical Discourse in Design (3-0-3. (Formerly VIS 360). Examines the relationship between design intention and interpretation. Reviews the application of graphic language in visual media. Requires research on topics related to design communication. Complements studio-based design courses by exploring design consideration and practice from a theoretical perspective. Prerequisite: DES 231.

VIS 301 Design Studio III (6-0-3). (Cross-listed as MUM 301). Requires students to apply a variety of methods and strategies to explore the relationship between visual form and content. Prerequisite: VIS 202.

VIS 302 Design Studio IV (6-0-3). (Cross-listed as MUM 302). Explores the use of typography as an expressive visual vehicle through experimentation, applied with a range of media and methods. Prerequisite: MUM 301 or VIS 301.

VIS 311 Illustration Design (6-0-3). Introduces students to various techniques of idea generation by focusing upon illustration as a means of conveying ideas and concepts. Encourages students to arrive at visual equivalents to written and/or oral texts in the contexts of the history of design and illustration. Prerequisite: VIS 213.

VIS 312 Illustration Genres (6-0-3). Explores the potential of 19th and 20th century illustration genres as a means of visual communication. Set projects encourage the student to investigate the contemporary implications of various historical illustration styles. Prerequisite VIS 213.

VIS 320 Printmaking: Lithography and Serigraphy Methods (6-0-3. (Formerly VIS 222).Introduces basic concepts and skills in traditional and contemporary lithography, serigraphy and alternative printmaking methods while developing a firm skills base to expand upon in students' continuing studies in their specific disciplines. Investigates traditional mechanical and digital experimental reproductive processes as well as a basic history and theory of the graphic arts. Prerequisite: VIS 213. Lab/tech fee rate B applies.

VIS 321 Photojournalism (6-0-3). Explores the history and practice of photojournalism. Students are expected to have sound black and white technical skills, as the course focuses on developing personal awareness and vision within the medium of photography. Through a series of slides, lectures and small photographic assignments, the course investigates subject matter through the development of the photographic essay. Prerequisite: VIS 221. Lab/tech fee rate A applies.

VIS 322 Printmaking: Relief and Intaglio Methods (6-0-3. Introduces basic concepts and skills in traditional and contemporary relief and intaglio printing and production methods while developing a firm skills base to expand upon in students' continuing studies in their specific disciplines. Examines the role of the relief and intaglio reproduction in material culture. Examines traditional and experimental applications in two- and three-dimensional work across a range of disciplines. Prerequisite: VIS 213. Lab/tech fee rate B applies.

VIS 323 Photography for Communication (6-0-3. Covers the theory and practice of image manipulation through the extension of the traditional boundaries of photography. Covers a wide range of historic and contemporary techniques and processes, such as polarization,

non-silver methods, toning and digital media. Prerequisite: VIS 221. Lab/tech fee rate B applies.

VIS 325 Creative Studio Photography (6-0-3). Explores the control and manipulation of artificial lighting for creative effect in the photography studio environment. In addition to learning the practical skills of handling a range of studio flash equipment, students explore the creative use of lighting in photographic image making both in practical work and in the review of historical examples of this genre. Prerequisite: VIS 221. Lab/tech fee rate B applies.

VIS 361 The Design Profession (3-0-3). Deals with issues of working in design-related fields, including professional practice, intellectual property, employability, freelancing and working within a cultural context. Imparts knowledge of the region's design industry, through research and field trip documentation. Prepares students for their summer internships. Open to Department of Design students only. Prerequisite/concurrent: VIS 260.

VIS 397 Internship in Visual Communication (0-0-0). Requires a minimum of six weeks (normally 240 hours) of on-the-job experience with an approved professional firm. Requires students to document the work undertaken in a formal report submitted to the department by mid-semester of the following term. Graded as Pass/Fail. Prerequisite: VIS 361and approval of internship coordinator. Registration fee applies.

VIS 401 Design Studio V (6-0-4). (Cross-listed as MUM 401). Requires students, through a series of hypothetical design projects, to present and critically evaluate their progress within the context of contemporary expectations. Prerequisite: MUM 302 or VIS 302.

VIS 402 Design Studio VI (6-0-4). (Cross-listed as MUM 402). Comprises self-directed senior design projects developed in consultation with faculty. Requires students to produce a portfolio of previous work in addition to their senior project. Prerequisite: MUM 401 or VIS 401.

VIS 410 Senior VisCom Studio (6-0-3). Bases project work on a synthesis and selection of the student's experience in third-year major electives. Emphasizes critical assessment and the advancement of an individual aesthetic as applied skills. Prerequisite/concurrent: VIS 401.

VIS 420 Senior VisCom Portfolio (6-0-3). Builds upon VIS 410. Requires students to refine their image-based skills through formal and critical analysis toward individual expression. Allows students to produce work for their exit portfolios. Prerequisite: VIS 410; prerequisite/concurrent: VIS 402.

VIS 493 Study Abroad (1 to 3 credits). Features on-site visits offering the opportunity to experience first-hand regional and international design practices, highlighting particular themes relevant to the specific location. Department permission is required for enrollment and credit. Prerequisite: VIS 202.

VIS 498 Studio Abroad (1 to 6 credits). Provides studio activities conducted in regional and international sites promoting a global-oriented approach to design. Prerequisites: consent of the department and VIS 202.

Independent Study

Independent study is the umbrella term used to label two types of independent work: independent course and directed study.

Students are allowed to take one independent study. A second independent study could be approved by the student's associate dean for graduation purposes only.

Independent Course (1 to 4 credits). A course listed in the catalog but offered in an independent study format. The course is coded using the course number in the catalog.

Directed Study (1 to 4 credits). An investigation under faculty supervision beyond what is offered in existing courses. Prerequisites: minimum CGPA of 3.0, Junior II standing and consent of the instructor.

Directed study courses are numbered as 396 or 496 courses. The three-letter course prefix reflects the field of study of the course (e.g., independent study courses in architecture are coded as ARC 396 or ARC 496).

For more details, please refer to Registration in Independent Study Courses in the Academic Policies and Regulations section of this catalog.

Special Topics Courses

Special Topics (1 to 4 credits). Presents a theoretical or practical topic proposed by the faculty beyond what is offered in existing courses. Can be repeated for credit. Prerequisites: topic specific. Lab/tech fee may apply.

Special topic courses are numbered as 194, 294, 394 or 494 courses. The three-letter course prefix reflects the field of study of the course.

Special topics courses at the 300 level require sophomore standing or above; 400-level special topic courses are restricted to junior standing and above.

Descriptions of particular special topics courses are made available in the college/school offering the course during registration.

School of Business and Management

ACC   Accounting

ACC 201 Fundamentals of Financial Accounting (3-0-3). Introduces the principles and concepts underlying financial statements. Includes an introduction to the accounting profession, control, concepts, business entities and all elements of basic financial statements. The additional sessions consist of discussion and application of the principles and concepts of the course. Prerequisite/concurrent: MTH 101 or MTH 103 or MTH 111.

ACC 202 Fundamentals of Managerial Accounting (3-0-3). Introduces the principles and concepts underlying managerial accounting. Course includes an introduction to management accounting information and cost accounting. Prerequisite: ACC 201.

ACC 301 Intermediate Financial Accounting I (3-0-3). Begins a two-course sequence providing an in-depth study of principles and elements associated with financial statements. Includes financial statement analysis, income measurement, valuation of assets and equities, and generally accepted accounting principles. Prerequisite: ACC 202.

ACC 302 Intermediate Financial Accounting II (3-0-3). Continuation of Intermediate Financial Accounting I; focuses on accounting for long-term liabilities, stockholder's equity, cash flow analysis and international financial statements. Prerequisites: ACC 301 and FIN 201.

ACC 303 Cost Accounting (3-0-3). Covers the uses of accounting data for planning control and decision-making. Topics include budgets and cost concepts, techniques and behavior. Prerequisite: ACC 202.

ACC 305 Income Tax I (3-0-3). Introduces the US federal income tax system as it applies to personal income taxes and examines the legislative, judicial and regulatory bases of the code, as well as exposure to the tax accounting concepts of income, examinations, exclusions, losses, expenses, credits, property transactions and AMT as they apply to theory and practice. Prerequisite: ACC 301.

ACC 306 Income Tax II (3-0-3). Introduces the US federal income tax system as it applies to corporations, partnerships, estates and trusts. Includes a comparison and contrast of personal and corporate taxation, as well as an examination of corporate organization and capital structure, distributions and reorganizations and accumulated earnings rules. Prerequisite: ACC 301.

ACC 310 Analysis of Financial Statements (3-0-3). (Cross-listed with FIN 310). Provides students with the skills needed to read, analyze and interpret the information contained in a company's financial statements. Integrates accounting and financial principles and discusses the ethics of both professions. Prerequisites: ACC 202 and FIN 201.

ACC 360 Accounting Information Systems (3-0-3). Provides an overview of current accounting information systems concepts, web technology, online auditing issues and contemporary accounting issues. Includes the following topics: e-business, computer hardware and software issues, accounting cycles, systems development, computer crime, auditing and expert systems. Prerequisites: ACC 202 and junior standing.

ACC 401 Advanced Financial Accounting (3-0-3). Covers theory and practices of accounting for partnerships, business combinations and consolidated financial statements, and advanced topics in financial accounting. Prerequisite: ACC 302.

ACC 410 Auditing (3-0-3). (Formerly ACC 304). Studies auditing theory, generally accepted auditing standards, audit procedures, audit reports and the responsibilities and ethics of the auditing profession. Includes the following topics: risk, evidence, internal controls, sampling, audit testing, subsequent events, professional liability, reporting statutory provisions, compilation and review services, and reporting under government auditing standards. Prerequisite: ACC 302.

ACC 413 Introduction to Accounting in Government and Not-for-Profit Organizations (3-0-3). Introduces students to accounting practices and fund management planning and financial control, and the usefulness of accounting data for evaluating program inputs and outcomes. Prerequisites/concurrent: ACC 202 and senior standing.

ACC 420 International Accounting Standards (3-0-3). Introduces the students to comparative global business; international accounting systems; harmonization of accounting standards; international financial reporting and disclosure issues; international financial statement analysis; and international auditing, tax, and management accounting issues. Prerequisite: ACC 301.

BIS   Business Information Systems

BIS 101 Business Information Systems (3-0-3). Provides students with technical proficiency and expertise in office tools as well as important computer skills. Presents analytical techniques and essential knowledge to enhance student productivity in higher-level courses. Enhances students' ability to apply advanced features of spreadsheet software to business case assignments. Prerequisite/concurrent: MTH 002 or MTH 100 or Business Math Placement Test. Lab/Tech Fee Rate A applies.

BLW   Business Legal Issues

BLW 301 Business Law (3-0-3). Examines business legal issues such as legal concepts, philosophy and functions of court systems. Surveys contracts, sales, agents, legal forms of business and the regulation of businesses. Focuses on US law but also considers international and global legal perspectives. Prerequisites: ACC 201 and ECO 202; prerequisite/concurrent: ENG 204 or ENG 208.

BLW 302 Advanced Business Law (3-0-3). Continues and builds on the introductory business law course. Examines the following areas of law: sales and lease contracts; debtor and creditor relationships, including secured transactions; securities regulations; professional liability, including directors, officers and shareholders; corporate mergers and acquisitions; labor and employment law/employment discrimination; real property; and international law and other special topics. Prerequisite: BLW 301.

BUS   Business

BUS 300 International Study Tour (3-0-3). Provides a firsthand opportunity to learn by experiencing the world of international business. Students visit the headquarters of multinational organizations and attend seminars given by the professionals from these corporations. Prerequisites: good academic standing, and junior standing or sophomore standing with permission of instructor.

BUS 397 Business Internship (0-0-0). Requires a minimum of six weeks (240 hours) of on-the-job experience with an approved organization. Work undertaken must be documented in a formal report as required by the School of Business and Management. Graded as Pass/Fail. Prerequisite: Junior II standing and approval of internship coordinator. Registration fee applies.

ECO   Economics

ECO 201 Principles of Microeconomics (3-0-3). Introduces the basic principles of microeconomics and their applications: supply and demand, operation of markets, consumer and enterprise behavior, competition and monopoly, income distribution and international trade. Prerequisite: EPT 4 or WRI 001.

ECO 202 Principles of Macroeconomics (3-0-3). Introduces the basic principles of macroeconomics, stressing national income, unemployment, inflation, economic growth, business cycles and open economies. Prerequisite: EPT 4 or WRI 001.

ECO 301 Intermediate Microeconomics (3-0-3). Studies the theory of consumer behavior, production and pricing. Emphasizes the comparison of resource allocation in competitive and non-competitive markets. Prerequisites: ECO 201, ECO 202 and WRI 102.

ECO 302 Intermediate Macroeconomics (3-0-3). Examines macroeconomic theory and its application to factors that determine the level of income, employment, output and prices in an economic system. Emphasizes stabilization policies and empirical applications. Prerequisites: ECO 201, ECO 202 and WRI 102.

ECO 305 International Trade (3-0-3). Introduces the economics of international trade, including why countries trade, commercial trade policies and their effects, growth and international trade, and multinational firms. Prerequisites: ECO 201, ECO 202 and WRI 102.

ECO 306 International Monetary Economics (3-0-3). Starts with basics of international capital flows, exchange rate determination, and the analysis of the international monetary system. Uses theory to analyze contemporary issues such as globalization and liberalization of capital flows. Addresses the stability of foreign exchange markets with reference to currency crises in emerging markets. Prerequisites: ECO 201, ECO 202 and WRI 102.

ECO 310 Development Economics (3-0-3). Studies the economic transformation of developing countries. Examines both standard models of economic growth and micro-level foundations of economic development; among the latter are the role of institutional arrangements, the absence of fully functioning markets and the functional role of income distribution. Prerequisites: ECO 201, ECO 202 and WRI 102.

ECO 312 Economics of Labor (3-0-3). Provides an economic analysis of employment and wages, including the economics of education, unemployment, labor unions, discrimination and income inequality. Prerequisites: ECO 201, ECO 202 and WRI 102.

ECO 315 Economics of the Middle East (3-0-3). Provides a detailed historical and contemporary investigation of the Middle Eastern economies, including the role of oil in economic growth, trade relations, development patterns, labor and financial flows. Prerequisites: ECO 201, ECO 202 and WRI 102.

ECO 320 History of Economic Thought (3-0-3). Analyzes the development of economic theory. Uses specific historical contexts and also explores the major figures and schools in economic thought. Prerequisites: ECO 201, ECO 202 and WRI 102.

ECO 321 Comparative Economic Systems (3-0-3). Examines the major economic systems with emphasis on implications for resource allocation, income distribution and economic growth. Uses an evolutionary/institutional approach to examine the unique cultural and historical factors that shape a particular economy. Examines and compares various economic systems beginning with those of ancient Rome and Medieval England and then moves toward the modem social economies present today. Prerequisites: ECO 201, ECO 202 and WRI 102.

ECO 325 Public Economics (3-0-3). Examines the microeconomic theory as a framework for understanding the problems of public managers. Considers resource scarcity, consumer behavior, production costs, economics

of efficient management, operation of product markets under competition and monopoly, labor markets, market failure and public goods. Prerequisites: ECO 201, ECO 202 and WRI 102.

ECO 326 Economics and the Law (3-0-3). Examines property rights, contract rights and liability rules. Analyzes both efficiency and fairness. For efficiency, emphasis is placed upon the incentive effects that legal rulings create for economic behavior in the future. Analyzes fairness mostly in terms of the effects that legal rulings have upon the distribution of wealth. Prerequisites: ECO 201, ECO 202 and WRI 102.

ECO 327 Industrial Organization (3-0-3). Studies the theory and the empirical evidence concerning the organization of firms and industries. Focuses on industry structure, on conduct and performance, and on more recent advances based on microeconomic theory, including transactions cost economics, game theory, strategic behavior and information theory. Prerequisites: ECO 201, ECO 202 and WRI 102.

ECO 330 Money and Banking (3-0-3). Examines the role of money and credit in the economy. Includes the following topics: the structure and operations of commercial banks, central banking and the operation of monetary policy, non-banking institutions and the structure of financial markets, and elements of monetary theory. Prerequisites: ECO 201, ECO 202 and WRI 102.

ECO 333 Islamic Economics (3-0-3). Introduces students to the positive and normative principles of Islamic economics from a historical and history of thought perspective. Examines the role of the state in economic activity, comparing the Islamic economic system with contemporary systems such as capitalism and Marxism. Prerequisites: ECO 201, ECO 202 and WRI 102.

ECO 334 Islamic Banking and Finance (3-0-3). Studies the origin and contemporary development of Islamic banking and finance. Examines case studies of the experience of Islamic finance in several countries. Explores current and future challenges to Islamic finance in an integrated world economy.

Prerequisites: ECO 201, ECO 202 and WRI 102.

ECO 345 Public Choice (3-0-3). (Formerly Economics of Collective Decision-Making). Explores a range of economic theories that contribute to an understanding of the scope and limits of collective decision making in a mixed economy. Includes welfare economics, transactions costs and the new institutional economics. They are used to identify issues where collective decision making is intrinsic and to offer insight into the design and assessment of such decision-making processes. Prerequisites: ECO 201, ECO 202 and WRI 102.

ECO 351 Introduction to Econometrics (3-0-3). Reviews the theory of statistics and statistical techniques. Emphasizes the application of statistical models to economics. Covers regression analysis and estimation of economic models, including violations of the basic assumptions of the regression model, dummy variables, analysis of variance, cross section and time series data analysis, and index numbers. Prerequisites: ECO 201, ECO 202, WRI 102 and any one of QBA 201, NGN 111, STA 201 or STA 202.

ECO 360 Economics of Multinational Corporations (3-0-3). Examines the origin and development of multinational firms, recent trends and facts concerning the flow of foreign direct investment and the effect of the activities of multinational corporations on both parent and host countries. Prerequisites: ECO 201, ECO 202 and WRI 102.

ECO 401 Managerial Economics (3-0-3). Managerial decision making is considered from the perspective of the economic theory of the firm. Integrates the traditional topics in the theory of the firm, production, cost and price with finance and internationalization of firms, product markets, financial markets and production. Prerequisite: ECO 301.

ECO 404 Economics of Environmental and Natural Resources (3-0-3). Deals with the economic issues that arise in the use of environmental resources. Begins with an economic analysis of the contention that markets fail to adequately control

environmental pollution. Addresses alternative policy mechanisms that have been proposed for control on environmental pollution. Covers topics such as water and air pollution, global climate change, temperate and tropical forest management, fisheries, biodiversity and habitat preservation. Prerequisites: ECO 201, ECO 202 and WRI 102.

ECO 410 Urban and Regional Economics (3-0-3). Analyzes the economics of the location and growth of urban and regional areas with emphasis on public policy issues. Includes discussion of land-use patterns, measurements and change in regional economic activity, and urban problems such as transportation, housing, poverty and crime. Prerequisite: ECO 301.

ECO 412 Monetary Economics (3-0-3). Emphasizes an intermediate to advanced treatment of topics related to money, banking, monetary theory and monetary policy in the context of fully specified monetary economies with microeconomic foundations. Prerequisites: ECO 301 and ECO 302.

ECO 495 Senior Seminar in Economics (3-0-3). Intensely investigates special topics in economics chosen by the instructor. Prerequisites: ECO 301, ECO 302 and Junior II standing.

FIN   Finance

FIN 201 Fundamentals of Financial Management (3-0-3). Introduces business finance, including global aspects; acquisition and use of short-term funds and long-term capital; overview of money and capital markets; management of assets, liabilities and capital accounts; financial analysis and time value of money; cash operation and long-range budgeting; leasing; corporate securities; dividend policy; and cost of capital. Prerequisites: ACC 201, MTH 102 or MTH 103 or MTH 111, and QBA 201.

FIN 304 Real Estate Investing (3-0-3). Covers terminology, legislation, principles and analytical techniques pertaining to financing of real estate.

Includes the perspective of lender, residential borrower and income property borrowers. Prerequisites: ACC 202, FIN 201 and WRI 102; prerequisite/concurrent: QBA 202.

FIN 306 Wealth Management for Individuals (3-0-3). Introduces insurance and risk management and personal financial planning with specific applications to property, disability, health and life insurance. Also covers aspects of financial planning including mutual funds, retirement planning, offshore banking and investment objectives. Prerequisites: ACC 202, FIN 201 and WRI 102.

FIN 310 Analysis of Financial Statements (3-0-3). (Cross-listed with ACC 310). Provides students with the skills needed to read, analyze and interpret the information contained in a company's financial statements. Integrates accounting and financial principles and discusses the ethics of both professions. Prerequisites: ACC 202 and FIN 201.

FIN 320 Banking (3-0-3). Provides an overview of the banking industry with an emphasis on commercial bank management. Specific topics include the duration and term structure of interest rates, asset/liability management, and risk and credit management. Prerequisites: FIN 201 and WRI 102; prerequisite/concurrent: MIS 201.

FIN 330 Investments (3-0-3). Covers investment objectives, mechanics of buying and selling financial assets, and portfolio management. Focuses on risk versus return in investment theory, but students also construct and manage real-time hypothetical investment portfolios. Prerequisites: ACC 202, FIN 201 and WRI 102; prerequisites/concurrent: MGT 201 and MKT 201.

FIN 360 Behavioral Finance (3-0-3). Studies the impact of psychology and human emotions on investment and financial decision-making processes. Examines the validity of the traditional assumptions of market efficiency and individual rationality so pervasive in the finance literature. Prerequisite/concurrent: FIN 330.

FIN 370 Islamic Finance (3-0-3). Studies the origin and contemporary development of Islamic banking and

finance. Examines case studies of the experience of Islamic finance in several countries. Explores current and future challenges to Islamic finance in an integrated world economy. Prerequisite: ECO 330 or FIN 201.

FIN 401 International Finance (3-0-3). Covers financing of international trade and investment, foreign exchange markets and exchange rate determination, and balance of payments. Focuses on international financial management within the firm. Prerequisites: FIN 330 and QBA 202; prerequisite/concurrent: FIN 320.

FIN 402 Futures and Options (3-0-3). Covers conceptual and practical aspects of the functioning of speculative markets for various derivatives. Examines futures, options, swaps, and other products. Prerequisites: FIN 330 and QBA 202; prerequisite/concurrent: FIN 320.

FIN 404 Portfolio Management (3-0-3). Provides the theoretical and operative framework for portfolio and advanced investment management. Students apply portfolio models and concepts to live market data to perform analytical skills and evaluate equities, fixed income securities and other investments. Asset pricing, diversification and other financial models are covered in detail. Prerequisites: FIN 330 and QBA 202.

FIN 430 Financial Forecasting (3-0-3). An applied computer intensive course that illustrates how to use statistical models and technical analysis to forecast future movements of financial variables such as stock prices, exchange rates and interest rates. Prerequisite: FIN 201.

FIN 440 Asset Valuation (3-0-3). Covers concepts and techniques for analyzing financial decisions and asset valuation. Topics include valuation techniques for various asset classes, forecasting and estimation of free cash flow, estimating the cost of capital and real options. Valuation is applied to single and multiple projects, individual businesses, subsidiaries and diversified companies. Prerequisite: FIN 330; prerequisite/concurrent: FIN 320.

FIN 450 Case Studies in Corporate Finance (3-0-3). Emphasizes the

case study approach to intermediate financial management (corporate finance). Includes the following topics: capital budgeting, corporate governance, mergers, capital structure, dividend policy and short-term financial management. Prerequisites: FIN 320 and FIN 330.

MGT   Management

MGT 201 Fundamentals of Management (3-0-3). Surveys the basic concepts and ideas of organizational behavior and the various functions and activities of the manager through global perspective. Includes the following topics: plans, goals, decision making, change, motivation, human resources, ethics and social responsibility, groups and teams, organization design, leadership and control. Prerequisite/concurrent: WRI 102.

MGT 301 Organizational Behavior (3-0-3). Takes an in-depth look at human behavior in organizations. Incorporating current management theory and research, the course looks into the factors that influence individual and group performance. Topics may include perception, personality, attitudes, values, motivation, decision making, leadership, power and politics, conflict and negotiation, groups and culture. Prerequisite: MGT 201; prerequisite/concurrent: ENG 203 or ENG 204.

MGT 302 Managing Human Resources (3-0-3). Examines the foundations, functions and activities involved in the managing of human resources, striking a balance between current theory and practice. Includes the following topics: manpower planning, recruitment and selection, policy and procedures, performance appraisal, compensation and benefits, training, safety and industrial relations. Prerequisites: ENG 204 and MGT 201.

MGT 303 Management and Leadership Development (3-0-3). Focuses on the necessary skills and abilities of the successful leader and manager. Introduces students to these success factors and challenges them

to both assess and develop their own managerial and leadership skills throughout the course. Prerequisites: ENG 204 and MGT 201.

MGT 305 International Business (3-0-3). Examines the nature and scope of international trade and investment, international institutions, the international monetary system and exchange markets and some of the major issues involved in the functional aspects of international business and management. Prerequisites: ENG 203 or ENG 204, and MGT 201.

MGT 306 Cross-Cultural Management (3-0-3). Introduces students to culture as an important variable in international management and examines its impact on organizations, strategy, negotiations, management of human capital, leadership, team building and ethics. Applies a metaphor approach to explore key differences among cultures and examine their relevance for international management practice. Prerequisite: MGT 301.

MGT 310 Fundamentals of Family Business (3-0-3). Introduces students to the unique challenges faced by family businesses and the potential solutions to these issues. Examines the characteristics that define family businesses and the potential risks and benefits these bring to family businesses in the UAE. Discusses issues such as family dynamics, generational gaps, leadership, the role of non-family members, governance and succession planning. Prerequisites: MGT 201, ACC 201 and QBA 201; prerequisite/concurrent: ENG 204.

MGT 312 Negotiation and Conflict Management (3-0-3). Examines conflict as a management issue in business organizations and explores techniques and methods for reaching effective agreements. Employs case studies, role playing and other experiential learning tools to develop analytical problem solving abilities and enhance conflict resolution skills. Prerequisites: MGT 301 and MGT 360.

MGT 313 Managing Change and Innovation (3-0-3). Explores the importance of innovation to business success and considers current trends in technology, society, consumer expectations and the workforce. Examines strategies for enabling innovation and overcoming obstacles to change. Presents the concept of a learning organization in the context of transformational leadership. Prerequisites: MGT 301 and MGT 303.

MGT 314 Management Intervention and Consultation (3-0-3). Introduces the management consulting industry and explores key activities associated with the consulting process. Considers the consultant as an advisor and change agent. Examines topics such as problem analysis, proposal development, project initiation, management of expectations, reputation and expertise, and knowledge transfer. Prerequisites: MGT 301 and MGT 360.

MGT 360 Business Ethics and Social Responsibility (3-0-3). Introduces the student to the ethical dimensions of business as they relate to the various stakeholders inside and outside the organization. Topics may include business ethical theory, ethical decision making, typical dilemmas and corporate social responsibility. Prerequisite: MGT 201; prerequisite/concurrent: ENG 203 or ENG 204.

MGT 364 Introduction to Corporate Governance (3-0-3). Introduces concepts for the top-level control of professional managers, especially by the board of directors, in modern corporations and other organizations. Examines the results of both good and bad governance. Covers topics such as the separation of ownership from control; agency, stakeholder and stewardship theories of governance; and their application to large and small businesses and non-profit organizations. Prerequisites: BLW 301 and MGT 360.

MGT 380 Project Management (3-0-3). Examines the concepts and techniques of managing projects in service and manufacturing settings. Includes the following topics: project selection and evaluation, dynamics, motivation and evaluation of team members, scheduling, budgeting and closure. Prerequisites: ACC 202, ENG 204, FIN 201, MIS 201, and MGT 301 or MIS 303.

MGT 403 Entrepreneurship (3-0-3). Focuses on the creation of new ventures: the people, the process and the dynamics. Topics include identifying and evaluating opportunities, success and failure factors, attitudes and characteristics of entrepreneurs, stand-alone and internal corporate ventures, and local and global issues in entrepreneurship. Students can expect to develop a viable business plan in the course. Prerequisites: ENG 204, FIN 201, MGT 201 and MKT 201.

MGT 406 Business Policy and Strategy (3-0-3). Applies the functional knowledge acquired in previous coursework to the analysis of strategic-level business problems and decisions. Uses business cases extensively to highlight the diversity and complexity of organizational environments and systems. Includes the following topics: missions and objectives; environmental analysis; formulating, implementing and assessing strategies and policies; and international, social and ethical issues. Prerequisites: business senior standing; FIN 201, ENG 204, MGT 201, MIS 201 and MKT 201; or by permission of department.

MIS Management Information Systems

MIS 201 Fundamentals of Management Information Systems (3-0-3). Covers information as an organizational resource. Focuses primarily on the organizational foundation of management information systems by establishing a link between business processes and information technology. Includes the following topics: decision-making frameworks, transaction processing systems, decision support systems, inter-organizational information systems, office automation, strategic information systems, enterprise systems, systems development, networks and IT infrastructure, social impacts of IT and more. Provides a technology update in hardware and software basics, database management and telecommunications. Prerequisite: BIS 101 or NGN 110.

MIS 202 Principles of Business Programming (3-0-3). Introduces students to the logic of business processing independently of any programming language. Teaches students to extract program specifications from business narratives or business process descriptions. Uses flowcharts, decision tables, decision trees, use cases and structured English to document program specifications, which can easily be translated into any programming language. Prerequisites: BIS 101 or NGN 110, and MTH 101 or MTH 103 or MTH 111. Lab/Tech fee rate A applies.

MIS 203 Software Development for Business Applications (3-0-3). Analyzes business problems to design and implement the software component of an information system. Introduces application development using an object-oriented language/event-driven language. Emphasizes the concepts and techniques for developing business applications, as well as an overview of object-oriented programming techniques and visual programming techniques. Illustrates various aspects of visual programming languages, as well as testing and debugging, in laboratory sessions. Prerequisites: MIS 201 and MIS 202. Lab/Tech fee rate A applies.

MIS 300 Data Communications and Networking (3-0-3). Provides a basic understanding of the technical and management aspects of business data communications and networking. Includes the following topics: telecommunications services, technology and policy; standards organizations that contribute to global telecommunications technology specification; signaling and switching; physical transmission media; wireless transmission services; network access and transmission methods; data network topologies and network access methods (e.g., Ethernet and ATM); network transmission methods (e.g., T-carriers, DSL and ISDN); data network connectivity; and networking in open source environments. Prerequisites: MIS 201 and WRI 102.

MIS 301 Fundamentals of Database Management (3-0-3). Covers information as an organizational resource. Addresses the beginning technical, business and application development issues associated with managing and using an organization's data resources. Employing ORACLE-SQL as the database language, the course covers organizational data management, data analysis and modeling with the entity relationship model, database design with SQL, normalization and the relational model. Prerequisites: MIS 201, MIS 202 and WRI 102. Lab/Tech fee rate A applies.

MIS 302 Advanced Database Management (3-0-3). Addresses advanced technical, business and application development issues associated with managing and using an organization's data resources. Employs ORACLE DEVELOPER or PL/SQL as an application development environment. Covers the database development process, physical database design, database implementation with client/server and middleware technology, database access, data administration and introduces object-oriented database management systems. Prerequisites: MIS 301 and QBA 201. Lab/Tech fee rate A applies.

MIS 303 Introduction to Systems Analysis (3-0-3). Examines traditional analysis, logical design through a data flow analysis and the system development life cycle approach. Covers methods for structured analysis and design. Addresses data structures, definitions and normalization. Emphasizes gaining the ability to use the various tools associated with systems analysis. Prerequisites: MIS 201, MIS 202 and WRI 102; prerequisites/concurrent: FIN 201, MGT 201 and MKT 201.

MIS 304 Applied Systems Design (3-0-3). Builds on previous courses and allows students to apply the tools studied in MIS 303. Follows the life cycle process to produce specifications for a current system, develop the physical design for the system and implement the system using ORACLE tools. Emphasizes project teamwork. Prerequisites: MIS 301 and MIS 303. Lab/Tech fee rate A applies.

MIS 402 Technology and Knowledge Management (3-0-3). Explores the theoretical foundation of technology and knowledge management and its value to the organization. Examines the nature of technological change, innovation and intellectual capital, and the valuation of an organization's knowledge assets. Prerequisites: MIS 301 and MGT 360.

MIS 404 Internet Business Applications (3-0-3). Examines how the Internet and the World Wide Web are used for marketing and business purposes. Studies well-established US and UAE companies that have established a marketing presence on the Internet. Projects include building a website to market a specific product and establishing a simulated business on the Internet. Students use tools and techniques for project initiation, project analysis, design and implementation. Prerequisites: MIS 301 and MIS 303; prerequisite/concurrent: BLW 301.

MIS 405 Information Systems Strategy (3-0-3). This is the capstone course in MIS. Discusses strategic IS issues, including planning IT infrastructures and architectures, business process reengineering, supply chain management, enterprise computing and systems integration. Covers emerging issues such as e-government and cyber ethics. Prerequisites: MIS 301, MIS 303 and senior standing.

MIS 406 Information Systems Auditing and Control (3-0-3). Introduces the general concepts of information systems auditing, security and control. Aims to provide skills in systems auditing in functional areas within the organization where information technology is predominantly used. Introduces the use of information systems audit software, where the practical nature of the subject will be developed through its use. Uses cases and job simulation throughout the course. Builds on knowledge and skills students acquired in prior IS courses and prepares students adequately for CISA certification. Prerequisites: MIS 301 and MIS 303.

MKT Marketing

MKT 201 Fundamentals of Marketing (3-0-3). Introduces the concept of making marketing decisions in business and non-profit organizations within the global context. Devotes particular attention to analyzing consumer needs, segmenting markets, and developing product, promotion, pricing and distribution strategies. Relationships between consumers, business and governments are explored. Prerequisites: ECO 201 and WRI 102. Lab/Tech fee rate A applies.

MKT 301 Consumer Behavior (3-0-3). Studies marketing, psychology, sociology and cultural anthropology to determine motivations for product purchases. Uses a multimedia approach to illustrate the use of behavioral science theory to create new products and promotional campaigns. Prerequisite: MKT 201.

MKT 302 Marketing Research (3-0-3). Examines research tools students can use to help make marketing decisions. Teaches students to define research problems, to select projects and to analyze data. The execution of a consumer survey is a major component of the course. Students use computer statistical packages to analyze research data. Prerequisites: MKT 201, and QBA 201 or NGN 111 or STA 201 or STA 202.

MKT 303 E-Commerce (3-0-3). Examines how the Internet and the World Wide Web are used for marketing and business purposes. Studies well-established US and UAE companies that have established a marketing presence on the Internet. Includes projects such as building a website to market a specific product and establishing a simulated business on the Internet. Prerequisites: FIN 201, MIS 201, and MIS 301 or MKT 301.

MKT 304 Sales Management (3-0-3). Introduces professional sales force management. Develops student skills in planning a sales program, organizing the selling effort and in recruiting, training and motivating the sales force. Prerequisite: MKT 301.

MKT 305 Retail Marketing (3-0-3). Explores marketing in large and small retail institutions. Includes the following topics: retail strategy, store layout, buying, merchandising, pricing, promotion, inventory management, customer service, control, store image, trading area and location selection. Prerequisite: MKT 301.

MKT 307 Business Marketing (3-0-3). Provides an in-depth understanding of the unique aspects of marketing in a business-to-business environment through the use of lectures, cases, guest speakers and media presentations. Focuses on organizational buying, buyer-seller relationships, market analysis and planning, demand and sales estimation and marketing-mix decisions. Considers a variety of business situations, such as marketing to manufacturers, other commercial organizations, government and institutions. Prerequisite: MKT 301.

MKT 308 Sports Marketing (3-0-3). Builds knowledge, skills and practical understanding of the nature, contexts and dynamics of sports marketing. Uses critical analysis to incorporate decision making and action in sports business as they relate to general marketing theories and practice. Encourages students to apply the leading-edge methods of sports marketing to sport as a business. Exposes students to the application of theories on the local growth and development of the sports marketing industry. Prerequisite: MKT 301.

MKT 309 International Marketing (3-0-3). Provides a comprehensive understanding of the issues and challenges inherent in the formulation and implementation of international marketing strategies. Examines and analyzes environmental forces affecting international marketing decisions, selection of international target markets and the design and development of international marketing plans. Prerequisite: MKT 301.

MKT 310 Marketing Communications (3-0-3). Introduces the creation and management of integrated marketing communications campaigns to promote a variety of products. Considers the selection of promotional tools such as advertising, public relations, consumer and trade promotions, sponsorships, databases and direct marketing. Exposes students to simulations demonstrating the competitive nature of marketing communications. Explores methods for assessing campaign effectiveness. Prerequisites: MKT 301, and ENG 203 or ENG 204.

MKT 311 Marketing Management Simulation (3-0-3). Explores the interrelated dynamic nature of elements of marketing using simulation. Requires students to develop marketing plans and strategies for a company based on analysis of marketing data, and review the performance of the company in a simulated market environment. Emphasizes application of concepts in marketing management, focusing on financial implications of marketing decisions. Prerequisites: FIN 201 and MKT 301. Lab/Tech fee rate A applies.

MKT 365 Services Marketing (3-0-3). Examines service-related issues, practice and strategy in business organizations. Includes the following topics: marketing analysis of service quality, service gaps, consumer expectations, service delivery strategies and customer relationship management. Builds on marketing concepts from other courses and applies them specifically to service industry settings. Prerequisites: MKT 301 and MKT 302.

MKT 401 Marketing Strategy (3-0-3). Analyzes current marketing management issues. Requires students to develop a marketing plan for an outside organization, analyze case studies and participate in computer simulation exercises. Prerequisites: MKT 301, MKT 302 and senior standing.

PBA Public Administration

PBA 101 Introduction to Public Administration (3-0-3). Introduces the basic concepts and models of public administration including organization theory, leadership, communication,

decision making, interpersonal relations, public policy processes, regulations, legal authority, politics and power relations.

PBA 201 Public Management (3-0-3). Introduces students to the contemporary techniques of management and leadership in public organizations. Analyzes problems of public agencies, nonprofit organizations and others. Focuses on how to cope with the challenges, internal and external, that the top level of management faces. Prerequisites: PBA 101 and WRI 102.

PBA 301 Organizational Behavior (3-0-3). Focuses on leadership, communication, techniques of motivation, delegation of authority and strategic planning. Prerequisites: PBA 101 and WRI 102.

PBA 302 Comparative Public Administrative Systems (3-0-3). Examines governmental administrative systems in Europe, North America, the Arab world, Asia and Africa. Emphasizes a comparative analysis of industrialized nations with nations of the Third World. Prerequisites: PBA 101 and WRI 102.

PBA 304 Public Budgeting (3-0-3). Surveys the principles of and problems of financial organization and management in the public service, with emphasis on fiscal planning, the annual budget process, program budgeting, political factors and accounting in Western systems and Third World nations. Prerequisites: BIS 101, PBA 101 and WRI 102. Prerequisite/concurrent: ACC 201.

PBA 305 Classification, Job Analysis, Compensation and Fringe Benefits in Public Organizations (3-0-3). Looks at classification systems and techniques, rational job analysis, compensation and incentive plans, and fringe benefit management as aspects of achieving maximum organizational efficiency and effectiveness. Prerequisites: PBA 101 and WRI 102.

PBA 306 Human Resources Management in Public Organizations (3-0-3). Introduces students to management and leadership tasks of running a professional-level, human resources subsystem. Focuses on the

challenges, opportunities and strategies that human resources managers face, including the dynamics of external and internal conflict resolution and acting in an advisory capacity to executive-level managers. Prerequisites: PBA 101 and WRI 102.

PBA 310 Research in Public Administration (3-0-3). Introduces research methods in public administration. Includes the following topics: research design, the concept of validity, data collection and data analysis. Prerequisites: PBA 101 and WRI 102.

PBA 311 Nonprofit Organization Management (3-0-3). Covers concepts of management and organizational development that are appropriate to the nonprofit sector. Emphasizes the development of people skills, a volunteer workforce, fundraising, goal setting, motivation and communication techniques. Prerequisites: PBA 101 and WRI 102.

PBA 315 Women in Public Management (3-0-3). (Formerly PBA 204). Examines and analyzes the emerging role of women in management positions in government, business and nonprofit organizations. Explores the unique problems and challenges that may be related to gender, including building effective management, teamwork and esprit de corps in the context of a diverse workforce. Prerequisites: PBA 101 and WRI 102.

PBA 316 Intergovernmental Relations (3-0-3). (Formerly PBA 205). Explores the political, fiscal and administrative relationships that help to shape complex intergovernmental systems. Focuses on federal, centrally unified, emirate (provincial), municipal and other jurisdictions. Prerequisites: PBA 101 and WRI 102.

PBA 317 Urban Management (3-0-3). (Formerly PBA 210). Covers structure, process and policy issues in urban public administration and public policy. Considers major theoretical approaches to urban government, local autonomy, public and private authority, economic constraints, social welfare and service delivery. Examines race, gender and ethnicity, as well as policy on education, crime, social welfare and economic

development. Prerequisites: PBA 101 and WRI 102.

PBA 397 Internship in a Public Organization (0-0-0). Requires a minimum of six weeks (240 hours) of on-the-job experience with an approved government agency, a nonprofit organization or a private firm. Emphasizes administrative-level, hands-on experience that benefits the agency and the student. Requires students to submit a written report, a daily journal and an agency supervisor's evaluation. Graded as Pass/Fail. Restricted to PBA students. Prerequisites: Junior II standing and approval of the internship coordinator. Registration fee applies.

PBA 402 Local and Regional Administration (3-0-3). Surveys the structure, function and process of administration in a local government setting and at regional levels. Focuses on the unique challenges public organizations face with respect to national issues, local issues, funding, social groups, environmental pollution and politics. Prerequisites: PBA 101 and WRI 102.

PBA 407 Local Issues in Public Administration (3-0-3). Introduces the legal issues facing public managers, including risk management, due process for employees, judicial review aspects, administrative ethics and personal liability. Prerequisites: PBA 101 and WRI 102.

PBA 408 Development Management (3-0-3). Covers the concepts and techniques of development administration with a focus on Third World nations and societies that are pre-eminently concerned with basic economic development, capital formation and exports. Prerequisites: PBA 101 and WRI 102.

PBA 410 Public Program Evaluation (3-0-3). Introduces the elements of program evaluation in public organizations. Covers qualitative and quantitative analysis, and valid methods. Prerequisites: PBA 101 and WRI 102.

PBA 411 Foundations of Public Policy Analysis (3-0-3). Examines the public policy process in the Middle East and the West. Focuses on concepts of externalities, risk and uncertainty, and

public choice models in public policy analysis. Prerequisites: PBA 101 and WRI 102.

PBA 419 Seminar in Executive-Level Public Management (3-0-3). Concentrates on identifying the tasks, challenges and responsibilities of being a CEO, a CAO or an executive director of an organization. Prerequisites: PBA 201 and WRI 102.

PBA 495 Seminar in Public Administration (3-0-3). Synthesizes and contextualizes elements of the public administration curriculum to prepare students for a career in public management. Includes the following elements: expertise and bureaucratic power, administration and the law, ethics, business-government relations, economics, public policy and the role of public employees. Prerequisite: senior standing in PBA.

QBA Quantitative Business Analysis

QBA 201 Quantitative Business Analysis (3-0-3). An applications-oriented course that covers descriptive and inferential statistics. Introduces students to the use of statistical software. Includes the following topics: descriptive statistics, probability distributions, estimation and hypothesis testing, correlation, and simple and multiple linear regression. Prerequisite/concurrent: MTH 101.

QBA 202 Operations Management (3-0-3). Introduces the basic principles, functions and concepts involved in the design, management and control of operations in contemporary organizations. Covers topics such as production planning, quality control and materials management, and stresses tools and techniques required to improve the efficiency, effectiveness and competitiveness of both service- and manufacturing-based organizations. Prerequisite: QBA 201 or NGN 111 or STA 201 or STA 202.

QBA 310 Management of the Supply Chain (3-0-3). Demonstrates the strategic importance of the supply chain and gives students an appreciation for the overall reach of SCM. Synthesizes supply chain management principles to deliver cost-effective customer service through the integration of functional areas including marketing, accounting/finance and purchasing. Examines supply chain performance metrics, introduces the analysis of supply chain finance and takes a closer look at the creating and managing supplier and the role of purchasing. Considers issues such as demand management, aggregate planning, total quality management, Just-in-Time and inventory management. Students who have taken MIS 410 may not take this course for credit. Prerequisite: QBA 202.

QBA 311 Logistics Management (3-0-3). Extends student understanding of planning, organizing, operating and controlling supply chains utilizing principles of logistics management. Brings together principles of logistics and supply chain management to deliver cost-effective customer service through the integration of transportation, inventory, warehousing, facility location, packaging and materials handling. Examines supply chain performance metrics, supply chain finance, "inbound" (purchasing and materials management) and "outbound" (demand management and customer service) logistics, inventory management, warehousing, transportation systems, SCM and preliminary concepts in logistics network design. Prerequisite: QBA 310.

Independent Study

Independent study is the umbrella term used to label two types of independent work: independent course and directed study.

Students are allowed to take one independent study. A second independent study could be approved by the student's associate dean for graduation purposes only.

Independent Course (1 to 4 credits). A course listed in the catalog but offered in an independent study format. The course is coded using the course number in the catalog.

Directed Study (1 to 4 credits). An investigation under faculty supervision beyond what is offered in existing courses.

Prerequisites: minimum CGPA of 3.0, Junior II standing and consent of the instructor.

Directed study courses are numbered as 396 or 496 courses. The three-letter course prefix reflects the field of study of the course (e.g., independent study courses in accounting are coded as ACC 396 or ACC 496).

For more details, please refer to Registration in Independent Study Courses in the Academic Policies and Regulations section of this catalog.

Special Topics Courses

Special Topics (1 to 4 credits). Presents a theoretical or practical topic proposed by the faculty beyond what is offered in existing courses. Can be repeated for credit. Prerequisites: topic specific. Lab/Tech fee may apply.

Special topic courses are numbered as 194, 294, 394 or 494 courses. The three-letter course prefix reflects the field of study of the course.

Special topics courses at the 300 level require sophomore standing or above; 400-level special topic courses are restricted to junior standing and above.

Descriptions of particular special topics courses are made available in the college/school offering the course during registration.

Special topic courses in accounting are restricted to students in accounting and finance.

Full-Time Faculty

A

Abdalla, Jamaleldin, PhD, University of California at Berkeley, 1989; Professor in Civil Engineering and Head, Department of Civil Engineering

Abdallah, Abed Al-Nasser, PhD, University of Lancaster, 2004; Assistant Professor in Accounting and Finance

Abdelfatah, Akmal, PhD, University of Texas at Austin, 1999; Associate Professor in Civil Engineering

Abdel-Hafez, Mamoun, PhD, University of California at Los Angeles, 2003; Assistant Professor in Mechanical Engineering

Abdel-Jabbar, Nabil, PhD, University of Michigan, 1996; Associate Professor in Chemical Engineering

Abdelsalam, Omneya, PhD, Heriot-Watt University, 1999; Associate Professor in Accounting and Finance

AbdulHadi, Zayid, PhD, Université Laval, 1987; Professor in Mathematics and Statistics

Abed, Farid, PhD, Louisiana State University, 2005; Assistant Professor in Civil Engineering

Abi Ali, Asaad, CPA, State of Maryland, 2001; Instructor in Accounting and Finance

Abouleish, Mohamed Yehia, PhD, Tennessee Technological University, 2003; Assistant Professor in Biology and Chemistry

Abu Al-Foul, Bassam, PhD, University of Utah, 1994; Associate Professor in Economics

Abualrub, Taher, PhD, University of Iowa, 1998; Associate Professor in Mathematics and Statistics

Abu-Hassan, Jenifah, MS, Drake University, 1989; Senior Instructor in Intensive English

Abukhaled, Marwan, PhD, Texas Tech University, 1995; Associate Professor in Mathematics and Statistics

Abu-Lebdeh, Ghassan, PhD, University of Illinois at Urban-Champaign, 1999; Associate Professor in Civil Engineering

Abu-Muhanna, Yusuf, PhD, State University of New York at Albany, 1979; Professor in Mathematics and Statistics

Abusalim, Alaanoud, MA, Southern Illinois University, Carbondale, 2006; Instructor in Writing Studies

Abu-Yousef, Imad, PhD, McGill University, 1996; Professor in Biology and Chemistry

Ahmad, Norita, PhD, Renssealaer, 2001; Assistant Professor in Management Information Systems

Ahmad, Shoaib Nabi, MID, Rhode Island School of Design, 1991; Associate Professor in Design

Ahmed, Aftab, MA, University of London, 1997; Senior Instructor in Intensive English

Ahmed, Khawlah, PhD, State University of New York at Buffalo, 1998; Assistant Professor in English

Ahmed, Rana, PhD, Duke University, 1991; Associate Professor in Computer Science and Engineering

Ahmed, Saad, PhD, Georgia Institute of Technology, 1981; Professor in Mechanical Engineering

Ahmed, Vian, PhD, Loughborough University, 2000; Visiting Associate Professor in Civil Engineering

Al-Ali, Abdul-Rahman, PhD, Vanderbilt University, 1990; Professor in Computer Science and Engineering

Al-Assadi, Wesam, MA, American University of Sharjah, 2004; Instructor in Arabic and Translation Studies

Al-Assaf, Yousef, PhD, Oxford University, 1988; Professor in Electrical Engineering and Dean, College of Engineering

Albasha, Lufti, PhD, University of Leeds, 1995; Assistant Professor in Electrical Engineering

Al-Ghoussein, Tarek, MA, University of New Mexico, 1989; Associate Professor in Design

Ali, Ahmed, PhD, University of Durham, 1999; Assistant Professor in Arabic and Translation Studies

Ali, Naghmana, PhD, University of Toronto, 2004; Assistant Professor in English

Ali, Tarig, PhD, Ohio State University, 2003; Assistant Professor in Civil Engineering

Alibrandi, Thomas, DEd, University of San Francisco, 1999; Assistant Professor in Writing Studies, and Head and Director,

Intensive English Program

Al-Issa, Ahmad, PhD, Indiana University of Pennsylvania, 1998; Associate Professor in English

Al-Jurf, Saladin, JD, University of Iowa College of Law; 1998; Assistant Professor in Management, Marketing and Public Administration

Alkafaji, Yass, DBA, Mississippi State University, 1983; Associate Professor in Accounting and Finance

Al-Kattan, Ibrahim, PhD, Tennessee Technical University, 1994; Associate Professor in Engineering Systems Management

Al-Khazali, Osamah, PhD, University of Memphis, 1997; Professor in Accounting and Finance

Allagui, Ilhem, PhD, University of Montreal, 2001; Assistant Professor in Mass Communication

Allee, John, MA, University of Minnesota, 1969; Senior Lecturer in Management, Marketing and Public Administration

Al-Musawi, Muhsin, PhD, Dalhousie University, 1978; Professor in Arabic and Translation Studies

Alnaizy, Raafat, PhD, Texas A&M University, 1999; Assistant Professor in Chemical Engineering

Al-Najjar, Abeer, PhD, University of Edinburgh, 2003; Assistant Professor in Mass Communication

Alnaser, Ali Sami, PhD, Western Michigan University, 2002; Assistant Professor in Physics

Al-Nashash, Hasan, PhD, Kent University, 1988; Professor in Electrical Engineering

Al-Natour, Sameh, MS, University of British Columbia, 2005; Instructor in Management Information Systems (Spring 2010)

Alobaidi, Ghada, PhD, University of Western Ontario, 2000; Associate Professor in Mathematics and Statistics

Aloul, Fadi, PhD, University of Michigan, 2003; Associate Professor in Computer Science and Engineering

Al-Satari, Mohamed, PhD, University of Southern California, 2005; Assistant Professor in Civil Engineering

Al-Sayah, Mohamed, PhD, University of Alberta, 2002; Assistant Professor in Biology and Chemistry

Al-Tamimi, Adil, PhD, Strathclyde University, 1990; Associate Professor in Civil Engineering and Director, Institute of Material Systems

Anabtawi, Mahmoud, PhD, University of Texas, 1998; Associate Professor in Mathematics and Statistics and Head, Department of Mathematics and Statistics

Anderson, Pia-Kristina, PhD, University of California at Berkeley, 2001; Assistant Professor in International Studies

Anderson, Sean, PhD, University of California, Los Angeles, 2006; Assistant Professor in Architecture

Angell, Linda, DBA, Boston University, 1996; Associate Professor in Management Information Systems and Management, Marketing and Public Administration

Araujo, Anderson, PhD, University of Western Ontario, 2006; Assistant Professor in English

Arenfeldt, Pernille, PhD, European University Institute, 2006; Assistant Professor in International Studies

Artz, Benjamin, PhD, University of Wisconsin, 2008; Assistant Professor in Economics

Arzaghi, Mohammad, PhD, Brown University, 2005; Assistant Professor in Economics

Ashill, Nicholas, PhD, University of Bradford, 2004; Associate Professor in Management, Marketing and Public Administration

AshShareef, Teirab, PhD, Indiana University, 1988; Assistant Professor in Arabic and Translation Studies and Head, Department of Arabic and Translation Studies

Assaleh, Khaled, PhD, Rutgers University, 1993; Associate Professor in Electrical Engineering

Atabay, Serter, PhD, University of Birmingham, 2001; Assistant Professor in Civil Engineering

Attom, Mousa, PhD, Kansas State University, 1989; Associate Professor in Civil Engineering

Audi, Diana, MS, American University of Beirut, 2005; Instructor in Mathematics and Statistics

Aveyard, Mark, PhD, Florida State University, 2007; Assistant Professor in International Studies

B

Badawi, Ayman, PhD, University of North Texas, 1993; Professor in Mathematics and Statistics

Badry, Fatima, PhD, University of California at Berkeley, 1983; Professor in English and Head, Department of English (on sabbatical Spring 2010)

Baghestani, Hamid, PhD, University of Colorado, 1982; Professor in Economics (on sabbatical Fall 2009)

Bahloul, Maher, PhD, Cornell University, 1994; Associate Professor in English (on sabbatical Spring 2010)

Bahloul, Raja Mallek, MA, Cornell University, 1994; Senior Instructor in Intensive English

Baker, Jeffrey, PhD, Texas Tech University, 2008; Assistant Professor in Management Information Systems

Banan, Mohammad, PhD, University of Illinois at Urbana-Champaign, 1993; Visiting Associate Professor in Civil Engineering

Bantey, Paul, MFA, Whitecliffe College of Arts and Design, 2005; Assistant Professor in Design and Head, Department of Design

Barlas, Gerassimos, PhD, National Technical University, Athens, 1996; Associate Professor in Computer Science and Engineering

Barnett, Andy, PhD, University of Virginia, 1978; Professor in Economics

Bartholomew, Aaron, PhD, College of William and Mary, 2001; Associate Professor in Biology and Chemistry

Bateman II, Robert E., PhD, University of Utah, 2004; Assistant Professor in Management, Marketing and Public Administration, and Director, SBM Graduate Programs and Outreach

Beheiry, Salwa, PhD, University of Texas at Austin, 2005; Assistant Professor in Civil Engineering

Belkhodja, Omar, PhD, Laval University, 2006; Assistant Professor in Management, Marketing and Public Administration

Berbić, Amir, MFA, The School of the Art Institute of Chicago, 2004; Assistant Professor in Design

Berenger, Ralph, PhD, Idaho State University, 2002; Visiting Associate Professor in Mass Communication

Berkaty, Ali, PhD, Loughborough University of Technology, 1993; Visiting Professor in Civil Engineering

Bieber-Roberts, Peggy, PhD, University of Washington, 1990; Associate Professor in Mass Communication

Bley, Jörg, PhD, Florida Atlantic University, 2000; Associate Professor in Accounting and Finance

Bodolica, Virginia, PhD, HEC Montreal Business School, 2006; Assistant Professor in Management, Marketing and Public Administration

Boisvert, Jean, PhD, Macquarie Graduate School of Management, 2007; Assistant Professor in Management, Marketing and Public Administration

Botthoff, John, MID, Pratt Institute, 1980; Lecturer in Design

Boubakri, Narjess, PhD, Université Laval, 2000; Associate Professor in Accounting and Finance

Breslow, Harris, PhD, University of Illinois, Champaign-Urban, 1995; Assistant Professor in Mass Communication

Brodtkorb, Tor, LLB, McGill University, 2000; Assistant Professor in Management, Marketing and Public Administration

Brown, Richard Mark, MEd, University of British Columbia, 1989; Instructor Intensive English Program

C

Caesar, Judith, PhD, Case Western Reserve University, 1976; Professor in English

Campa, Halina, MAT, University of Washington, 2004; Instructor in Intensive English

Carlstedt, Edward, MA, University of Leicester, 2000; Senior Instructor in Intensive English

Chazi, Abdelaziz, PhD, University of North Texas, 2004; Assistant Professor in Accounting and Finance

Chebbi, Rachid, PhD, Colorado School of Mines, 1991; Professor in Chemical Engineering

Chen, Kim Heng, PhD, Washington State University, 2002; Associate Professor in Management Information Systems

Chiravuri, Ananth, PhD, University of Wisconsin, Milwaukee, 2007; Assistant Professor in Management Information Systems

Crompton, Peter, PhD, Lancaster University, 2003; Assistant Professor in English

Cumbus, Jerald, MA, University of North Florida, 1992; Senior Instructor in Writing Studies and Director, Academic Achievement Center

D

Daghfous, Abdelkader, PhD, Pennsylvania State University, 1997; Associate Professor in Management Information Systems

Dahan, Laila, MA, American University of Sharjah, 2005; Instructor in Writing Studies

Dahm, Carl Bob, MFA, University of Hartford, 2007; Assistant Professor in Design

Darayseh, Musa, PhD, University of Nebraska-Lincoln, 1990; Professor in Accounting and Finance

Darras, Basil, PhD, University of Kentucky, 2008; Assistant Professor in Mechanical Engineering

Darwish, Naif, PhD, Oklahoma State University, 1991; Associate Professor in Chemical Engineering

DeGeorges, Thomas, PhD, Harvard University, 2006; Assistant Professor in International Studies

Deiab, Ibrahim, PhD, McMaster University, 2003; Assistant Professor in Mechanical Engineering

Dhaouadi, Rached, PhD, University of Minnesota, 1990; Associate Professor in Electrical Engineering and Coordinator, Mechatronics Engineering Program and Mechatronics Center

Dincer, Ibrahim, PhD, Istanbul Technical University, 1993; Visiting Professor in Mechanical Engineering

Di Sabatino, Peter, MArch, Washington University, 1985; Professor in Architecture and Dean, School of Architecture and Design

Djeredjian, Daron, PhD, Syracuse University, 2004; Assistant Professor in Economics

Dwight, Dickerson, PhD, University of Los Angeles, California, 1998; Associate Professor in Visual and Performing Arts Program

E

Eberlein, Armin, PhD, University of Wales, 1998; Professor in Computer Science and Engineering and Coordinator of Accreditation

Eischen, Erich, LLM, University of Denver, 2006; Assistant Professor in Accounting and Finance

El-Baz, Hazim, PhD, University of Missouri, Rolla, 1991; Associate Professor in Engineering Systems Management and Director, Engineering Outreach Program

Eldred, Gary, PhD, University of Illinois, 1973; Associate Professor in Accounting and Finance

Eleftheriou, Maria, MA, McGill University, 2002; Instructor in Writing Studies

El-Emam, Magdi, PhD, Queen's University, 2003; Assistant Professor in Civil Engineering

El-Fakih, Khaled, PhD, University of Ottawa, 2002; Associate Professor in Computer Science and Engineering

El-Hag, Ayman, PhD, University of Waterloo, 2004; Assistant Professor in Electrical Engineering

El Kadi, Hany, PhD, University of Alberta, 1993; Associate Professor in Mechanical Engineering and Associate Dean, College of Engineering, and Director, CEN Graduate Programs

El-Kadri, Oussama, PhD, Wayne State University, 2006; Assistant Professor in Biology and Chemistry

Elliot, John, PhD, St. Andrews University, 1991; Associate Professor in English

El-Mousfy, Mona, MArch, Georgia Institute of Technology, 1983; Assistant Professor in Architecture

El-Sadek, Ibrahim, PhD, University of California at Santa Barbara, 1983; Professor in Mathematics and Statistics and Associate Dean, College of Arts and Sciences

El-Sayed, Yehya, PhD, Graduate School of City University of New York, 2006; Assistant Professor in Biology and Chemistry

El-Sayegh, Sameh, PhD, Texas A&M University, 1998; Assistant Professor in Civil Engineering

El-Sinawi, Ameen, PhD, University of Dayton, 1999; Associate Professor in Mechanical Engineering

El-Tarhuni, Mohamed, PhD, Carleton University, 1997; Associate Professor in Electrical Engineering and Head, Department of Electrical Engineering

F

Faiq, Said, PhD, Salford University, 1991; Professor in Arabic and Translation Studies

Fast, Kelley, MA, Brock University, 2006; Instructor in Intensive English

Ferguson, Erik, PhD, University of Southern California, 1988; Assistant Professor in Urban Planning

Filipović, Zlatan, MFA, Alfred University, 2001; Assistant Professor in Design

Fredrick, Daniel, PhD, Texas Christian University, 2003; Assistant Professor in Writing Studies

G

Gadalla, Mohamed, PhD, University of Alabama, 1988; Associate Professor in Mechanical Engineering

Gandhi, Neena, PhD, University of Delhi, 2006; Assistant Professor in Writing Studies

Gassan, Richard, PhD, University of Massachusetts, 2002; Assistant Professor in International Studies

Gatenby, Bruce, PhD, University of Arizona, 1992; Assistant Professor in Writing Studies

Gavassa, Ana Milena, MBA, Troy University, 1999; Instructor in Mass Communication

Genc, Ismail, PhD, Texas A&M University, 1999; Associate Professor in Economics

Gibbs, Joseph, PhD, Boston University, 1994; Associate Professor in Mass Communication

Gibbs, Tatyana, MBA, American University of Sharjah, 2006; Instructor in Accounting and Finance

Giesen, Leslie, MA, School for International Training, 2001; Senior Instructor in Intensive English

Giesen, Martin, PhD, Heidelberg University, 1973; Professor in Fine Arts and Coordinator, Visual and Performing Arts Program

Gold, Gary, JD, Indiana University, 1991; Associate Professor in Management, Marketing and Public Administration

Golley, Nawar Al-Hassan, PhD, Nottingham University, 1994; Associate Professor in English

Goodwin, **Ronald**, PhD, Indiana University of Pennsylvania, 2005; Assistant Professor in Writing Studies

Gorla, Narasimhaiah, PhD, University of Iowa, 1986; Professor in Management Information Systems

Griffin, James, PhD, University of London, 2004; Assistant Professor in Mathematics and Statistics

Guessoum, Nidhal, PhD, University of California at San Diego, 1988; Professor in Physics

Gumus, Mehmet, PhD, University of Waterloo, 2006; Assistant Professor in Management Information Systems

Gunatillake, Gajath, PhD, Purdue University, 2005; Assistant Professor in Mathematics and Statistics

Gunn, Cindy, PhD, University of Bath, 2001; Associate Professor in English

H

Hamdan, Nasser, PhD, Middle East Technical University, 1993; Professor in Physics (on sabbatical Spring 2010)

Haney II, William, PhD, University of California at Davis, 1984; Professor in English

Hariga, Moncer, PhD, Cornell University, 1989; Professor in Engineering Systems Management and Coordinator, Engineering Systems Management Program

Hashem, Mahboub, PhD, Florida State University, 1984; Professor in Mass Communication

Hashim, Asif, MBA, University of Nebraska, 2003; Instructor in Management Information Systems

Hassan, Mohamed, PhD, University of Arizona, 2005; Assistant Professor in Electrical Engineering

Hatim, Basil, PhD, University of Exeter, 1982; Professor in Arabic and Translation Studies (on sabbatical Spring 2010)

Haverila, Matti, PhD, Tampere University of Technology, 1995; Associate Professor in Management, Marketing and Public Administration

Hawa, Karen, CPA, Colorado State Board of Accountancy, 2005; Instructor in Accounting and Finance

Hawileh, Rami, PhD, University of Wisconsin-Milwaukee, 2005; Assistant Professor in Civil Engineering

Heath, Peter, PhD, Harvard University, 1981; Professor in Arabic and Translation Studies and Chancellor

Heaton, J. Lade, JD, University of Utah, 1972; Senior Lecturer in Management, Marketing and Public Administration

Heidcamp, William, PhD, University of Pittsburg, 1971; Professor in Biology and Chemistry and Dean, College of Arts and Sciences

Heintz, W. Eirik, MArch, Harvard University, 1994; Associate Professor in Architecture and Associate Dean, School of Architecture and Design

Hejjawi, Lina, MA, American University of Sharjah, 2007; Instructor in Intensive English

Hewitt, David, MFA, Cornell University, 1979; Associate Professor in Design

Hochstettler, Thomas, PhD, University of Michigan, 1980; Professor in International Studies and Vice Chancellor for Academic Affairs

Horger, Christopher, MA, University of Arizona, 1992; Senior Instructor in Writing Studies

Husseini, Ghaleb, PhD, Brigham Young University, 2001; Associate Professor in Chemical Engineering

I

Ibahrine, Mohammed, PhD, Hamburg University, 2006; Assistant Professor in Mass Communication

Ibrahim, Taleb, PhD, Auburn University, 1997; Associate Professor in Chemical Engineering

Ingersoll, Stewart, PhD, University of Arizona, 2005; Assistant Professor in International Studies

Irimia-Vladu, Marina, PhD, Auburn University, 2006; Assistant Professor in Economics

Islam, Mohammad, PhD, Columbia University, 2003; Assistant Professor in Physics

Ismail, Lobna, MA, American University in Cairo, 1984; Special Instructor in Arabic and Translation Studies

Ismail, Tizreena, MA, Cardiff University, 2006; Instructor in Writing Studies

Izwaini, Sattar, PhD, University of Manchester, 2004; Assistant Professor in Arabic and Translation Studies

J

Jaidi, Asad Hasan, PhD, University of Kansas, 1993; Associate Professor in Physics

Jarrah, Abdul Salam, PhD, New Mexico State University, 2002; Associate Professor in Mathematics and Statistics

Jarrah, Mohammad-Ameen, PhD, Stanford University, 1989; Professor in Mechanical Engineering and Head, Department of Mechanical Engineering

Jayyusi-Lehn, Ghada, PhD, University of Toronto, 2007; Assistant Professor in Arabic and Translation Studies

Jeffrey, David, MA, University of Birmingham, 2003; Instructor in Intensive English

Jhemi, Ali, PhD, University of Minnesota, 1999; Assistant Professor in Mechanical Engineering

John, Mary Anne, MA, University of Calcutta, 1993; Instructor in Writing Studies

Jumean, Fawwaz, PhD, City University of New York, 1973; Professor in Biology and Chemistry and Head, Department of Biology and Chemistry

K

Kahya, Ercan, PhD, University of California, 1993; Visiting Professor in Civil Engineering

Kanan, Sofian, PhD, University of Maine, 2000; Associate Professor in Biology and Chemistry

Karavatos, Nicholas, MFA, New College of California, 1999; Assistant Professor in English

Kassam, Meenaz, PhD, University of Toronto, 1996; Assistant Professor in International Studies

Katodrytis, George, AADip, Architectural Association, UK, 1985; Associate Professor in Architecture and Director, Scholarship and SA&D Outreach Program

Kaya, Ilker, PhD, University of Georgia, 2009; Assistant Professor in Economics

Kayanga, Andrew M., PhD, University of New Orleans, 2009; Assistant Professor in Accounting and Finance

Keck, Stephen, DPhil, University of Oxford, 1992; Associate Professor in International Studies and Head, Department of International Studies

Kennedy, Thomas, MLA, Cornell University, 1991; Assistant Professor in Architecture

Khalaf, Kinda, PhD, Ohio State University, 1997; Assistant Professor in Mechanical Engineering

Khaldi, Boutheina, PhD, Indiana University, 2008; Assistant Professor in Arabic and Translation Studies

Khallaf, Ashraf, PhD, Florida Atlantic University, 2004; Assistant Professor in Accounting and Finance

Khan, Sajid, PhD, University of Manchester, 2001; Assistant Professor in Management, Marketing and Public Administration

Khan, Zahid, PhD, University of Western Ontario, 2007; Visiting Assistant Professor in Civil Engineering

Kharkhurin, Anatoliy, PhD, City University of New York, 2005; Assistant Professor in International Studies

Khatibi, Akbar, PhD, University of Sydney, 1997; Visiting Associate Professor in Mechanical Engineering

Khawaja, Ali, MBA, American University of Sharjah, 2004; Instructor in Management Information Systems

Kherfi, Samer, PhD, Simon Fraser University, 2002; Assistant Professor in Economics

Khoury, Suheil, PhD, Michigan State University, 1994; Professor in Mathematics and Statistics

Khouyibaba, Saadia, PhD, Laval University, 1997; Instructor in Mathematics and Statistics

Kim, Jong, PhD, Emory University, 2005; Assistant Professor in Economics

Kirk, Daniel, PhD, University of Georgia, 2008; Assistant Professor in Writing Studies and Coordinator, Faculty Development Center

Klein, Andrew, PhD, University of Illinois at Chicago, 2003; Assistant Professor in Management, Marketing and Public Administration

Knuteson, Sandra, PhD, Clemson University, 2004; Assistant Professor in Biology and Chemistry

Kocabas, Ibrahim, PhD, Leland Stanford Junior University, 1990; Associate Professor in Chemical Engineering

Kolo, Jerry, PhD, University of Waterloo, 1986; Professor in Urban Planning

Krieg Dosier, Ginger, MArch, Cranbrook Academy of Art, 2005; Assistant Professor in Architecture

Kucuk, Ismail, PhD, University of Utah, 2001; Associate Professor in Mathematics and Statistics

L

Landolsi, Taha, PhD, University of Texas at Dallas, 1999; Assistant Professor in Computer Science and Engineering

Lanteigne, Betty, PhD, Indiana University of Pennsylvania, 2004; Assistant Professor in English

Lea, David, PhD, University of Ottawa, 1990; Professor in International Studies

Leduc, Guillaume, PhD, Carleton University, 1995; Assistant Professor in Mathematics and Statistics

Lee, Jessica, MA, San Francisco State University, 2005; Instructor in Writing Studies

Loughlin, Kevin, PhD, University of New Brunswick, 1970; Professor in Chemical Engineering

Love, Charles, PhD, London Business School, 1975; Professor in Management Information Systems and Head, Department of Management Information Systems

Love, Don, PhD, Ohio University, 1997; Assistant Professor in Mass Communication

M

Maitner, Angela, PhD, University of California, 2007; Assistant Professor in International Studies

Majdalawieh, Amin, PhD, Dalhousie University, 2006; Assistant Professor in Biology and Chemistry

Majdalawieh, Munir, PhD, George Mason University, 2006; Assistant Professor in Management Information Systems

Majeed, Tariq, PhD, York University, 1991; Assistant Professor in Physics

Malcolm, Michael, PhD, University of Wisconsin-Madison, 2006; Assistant Professor in Economics

Malia, Jennifer, MS, University of Southern California, 2006; Instructor in Writing Studies

Mansour, Iskandar, PhD, UCLA, 2000; Assistant Professor in Arabic and Translation Studies

Manzur, Meher, PhD, The University of Western Australia, 1990; Visiting Associate Professor in Accounting and Finance

March, Jessica, MA, University of Essex, 2000; Instructor in Intensive English

Marchon, Cassia, PhD, Texas A&M University, 2008; Assistant Professor in Economics

Markov, Ivan, PhD, Cornell University, 1994; Associate Professor in Architecture

Marshall, Timothy, PhD, University of Auckland, 1995; Assistant Professor in Mathematics and Statistics

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McArdle, Jennifer, MA, Northern Arizona University, 2007; Instructor in Writing Studies

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Mir, Hasan, PhD, University of Washington, 2005; Assistant Professor in Electrical Engineering

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Mitias, Peter, PhD, Louisiana State University, 1997; Associate Professor in Economics

Moghaddam, Babak, MA, University of Theran, 2000; Instructor in Intensive English

Mohamed-Sayidina, Aisha, PhD, University of Exeter, 1993; Assistant Professor in English

Mokhtar, Ahmed, PhD, Concordia University, 1998; Associate Professor in Architecture

Morey, Susan, PhD, Virginia Common Wealth University, 2002; Assistant Professor in Management, Marketing and Public Administration

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Moustafa, Amer, PhD, University of Southern California, 1999; Associate Professor in Architecture

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Noman, Laila, PhD, University of Wales, 2000; Assistant Professor in English

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Osman-Ahmed, Ahmed, PhD, University of Calgary, 2003; Assistant Professor in Electrical Engineering

Ozkul, Tarik, PhD, Florida Institute of Technology, 1988; Associate Professor in Computer Science and Engineering (on sabbatical Fall 2009)

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Pallathucheril, Varkki, PhD, The Ohio State University, 1992; Professor in Urban Planning and Coordinator, Urban Planning Program

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Pasquier, Michel, PhD, National Polytechnic Institute of Grenoble, 1989; Associate Professor in Computer Science and Engineering

Perkins, John, DMA, University of Arizona, Tucson, 2009; Assistant Professor in Visual and Performing Arts

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Richardson, Tina, MA, University of Oregon, 2003; Instructor in Mass Communication

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Sagahyroon, Assim, PhD, University of Arizona, 1989; Associate Professor in Computer Science and Engineering and Head, Department of Computer Science and Engineering

Saifi, Ali, PhD, University of Sussex, 1978; Associate Professor in Mathematics and Statistics (on sabbatical Fall 2009)

Saifi, Toufic, MS, University of Balamand, 2000; Instructor in Management Information Systems

Sakhi, Said, PhD, University of Montreal, 1994; Associate Professor in Physics

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Sheil, Phil, MFA, University of Calgary, 1995; Associate Professor in Design

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Simon, Thomas, PhD, Washington University, 1973; Professor in International Studies

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Squalli, Jay, PhD, University of Delaware, 2004; Associate Professor in Economics

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Stevenson-Abouelnasr, Dana, PhD, Georgia Institute of Technology, 1984; Associate Professor in Chemical Engineering and Head, Department of Chemical Engineering

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Storseth, Terri, PhD, University of Washington, 1997; Assistant Professor in Writing Studies, and Head, Department of Writing Studies

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