American University of Sharjah

2000 - 2001

Catalog

His Highness Sheikh Dr. Sultan Bin Mohammed Al Qassimi
Supreme Council Member, Ruler of Sharjah
Founder and President of the American University of Sharjah

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Academic Calendar 2000 - 2001

Fall Semester			2000
August	24-25	Thursday-Friday	Dorms open
	26-29	Saturday-Tuesday	New student orientation TOEFL and Placement Tests
	26-28	Saturday-Monday	Registration for returning students
	30-3 Sept.	Wednesday-Sunday	Registration for new students
September	4	Monday	First day of classes
	10	Sunday	Last day to Add or Drop a class
October	24-27	Tuesday-Friday	Al-Isra Wal Miraaj Holiday and Fall Break
November	15	Wednesday	Last day to Withdraw from a class without penalty
December	2	Saturday	National Day Holiday
	13	Wednesday 10:00 p.m.	Fall semester classes end Study and examination period begins
	24	Sunday 10:00 p.m.	Study and examination period ends
	25	Monday	Holiday begins

Spring Semester			2001
January	14-15	Sunday-Monday	Dorms open
	16-20	Tuesday-Saturday	New student orientation TOEFL and Placement Tests
	16-17	Tuesday-Wednesday	Registration for returning students
	21-22	Sunday-Monday	Registration for new students
	23	Tuesday	First day of classes
	29	Monday	Last day to Add or Drop a class
February	28	Wednesday 10:00 p.m.	Classes end for Eid Al-Adha Holiday
March	10	Saturday 8:00 a.m.	Classes resume
	26	Monday	Al-Hijra New Year Holiday
	27	Tuesday 8:00 a.m.	Classes resume
April	10	Tuesday	Last day to Withdraw from a class without penalty
May	14	Monday 10:00 p.m.	Spring semester classes end
	15	Tuesday	Study and examination period begins
	24	Thursday	Study and examination period ends
	31	Thursday	Commencement

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) will be extended.

Chancellor's Message

Dear Prospective Student:

Choosing a university is one of the most important decisions that you will ever make. It can be the key that opens the door to a lifetime of opportunities for growth and service.

This catalog is designed to provide you with a straightforward description of the courses of study offered by the American University of Sharjah. It is not an advertisement. We want you to base your choice of a university on reliable information.

AUS presents you with the chance to experience American education in the Gulf. That statement has four meanings that should be important to you. First, the curriculum is organized according to the American pattern of semesters and courses. Second, the method of classroom instruction is American in its emphasis on individual initiative, active learning and the application of knowledge. Third, the standard of instruction is comparable to that in good universities in America. Fourth, student life on the campus is rich with clubs and sports and cultural events. AUS feels like an American university.

You will find a special sense of excitement on our campus as we enter the fourth year of our existence. Faculty and students are working together to create a great university. You could become part of this effort to establish a new standard of academic excellence for the region.

Our academic standards are challenging, but we are dedicated to helping you to meet those standards. We will judge our success as an institution by how well you do in realizing your potential as a student and in your later professional life.

I invite you to visit our magnificent campus, inspect our state-of-the-art facilities, talk with students, meet members of the faculty and discover for yourself why so many bright young men and women have made AUS their first choice.

Roderick S. French, Chancellor

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The University

Historical Preamble

The American University of Sharjah (AUS) was founded in 1997 by His Highness Sheikh Dr. Sultan Bin Mohammed 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 American University of Sharjah (AUS) is a not-for-profit, independent, coeducational institution of higher education formed on the American model.

- AUS will offer academic programs that are the equivalent in content and quality to those offered by leading institutions of higher education in the United States.
- AUS will admit students solely on the basis of their academic qualifications regardless of race, color, gender, religion, disabilities, age or national origin. The creation of a multicultural, coeducational, international academic community is both a means and an end in the mission of the university.
- AUS will provide students with a rich and varied campus life that fosters their personal growth and supports their transition to responsible adulthood in a rapidly changing world.
- AUS will integrate liberal studies and professional education to give its graduates both breadth and specialization.
- AUS will give its students access to the resources of art, literature and religion accumulated by earlier generations in various civilizations as well as mastery of the latest technical skills required for success in modern life.
- AUS will give its graduates an education that enables them to comprehend the dynamism and complexity of contemporary global processes and empowers them to guide those processes in constructive directions.
- AUS will adapt the model of the great American universities of the 20th century to the cultural setting of the Gulf in preparation for serving the educational needs of a new century.

University Terminology

Academic Status	Determined by regulations governing good standing, probation and suspension.
Admission	Formal application and acceptance as a regular student in a degree program. Students are admitted to degree programs fall and spring semesters only.
Advisor	The advisor is the faculty member assigned by the university to assist each student in planning the proper academic program. The student is called the advisor's "advisee."
Audit	To take a course without credit and grade.
Credit	Described in semester credit hours, a credit is defined as commonly equivalent to either a one-hour lecture or two to three hours of laboratory work per week for one semester.
Curriculum	A structured set of learning objectives contained in a specified set of courses.
Department	An academic unit of a college or school.
Dismissal	The involuntary separation of a student from the university for unsatisfactory academic achievement or conduct.
Extracurricular	Those activities that are part of student life but are not part of the regular course of study, such as dramatics, athletics and music.
Fee	Per semester or per credit charges for courses.
GPA	Grade point average.
Good Standing	A student who is not on probation or suspension.
Grade Points	Grades are evaluated in terms of quality points. See page 27 of this catalog to determine grade points for the letter grade earned.
I.D. Card	University student Identification Card.
Incomplete	The "I" symbol is a mark given when a student has been performing satisfactory, but, for a reason beyond the student's control, has been unable to complete the required work for the course. Incomplete grades revert to grades of "F" if not made up by the end of the second week of the semester immediately following the semester in which the course was taken.
Load	The total credits for which a student is registered in any registration period.
Major	Subject or field of study.
Prerequisite	The preliminary requirement that must be met before a certain course may be taken.
Probation	A warning status resulting from the student's unsatisfactory academic achievement or conduct.
Registration	The process of enrolling in classes.
Regular Student	A degree-seeking student who is officially admitted to the university.
Required Subjects	Those subjects that are prescribed for the completion of a particular program. The student, after consulting the advisor, may choose elective subjects; the required subjects are determined by the college or school.
Schedule, Class	The semester list of courses offered, including the names of the instructors, the days, hours and locations of classes.
Schedule, Student	A listing of the courses that the student takes each semester.
Transcript	A certified copy of the student's permanent academic record on file in the Registrar's Office. The transcript lists each course that the student has taken and the final grade received.
Undergraduate	A student who has not yet obtained the bachelor's degree.
Withdrawal	The act of officially leaving the university. Students may also drop individual courses without withdrawing from the university.

American University of Sharjah

P. O. Box 26666 - Sharjah, U.A.E.

UAE Code: 971, Sharjah City Code: 6 Website: www.aus.ac.ae

Department	Telephone	Fax	E-mail
• Chancellor's Office	505-5205	558-5858	chancellor_office@aus.ac.ae
• College of Arts & Sciences	505-5412	558-5067	docas@aus.ac.ae
• Comptroller	505-5185	505-5190	finance@aus.ac.ae
• Continuing Education Center (CEC)	505-5023	505-5020	edu_center@aus.ac.ae
• General Information	558-5555	505-5200	public_affairs@aus.ac.ae
• Human Resources	505-5228	505-5280	hr@aus.ac.ae
• Information Technology	505-5119	505-5120	it@aus.ac.ae
• Library	505-5252	558-5008	library@aus.ac.ae
• Office of Admissions	505-5002	558-5018	admission@aus.ac.ae
• Office of the Registrar	505-5006	505-5040	registration@aus.ac.ae
• Public Affairs	505-5207	505-5200	public_affairs@aus.ac.ae
• School of Architecture & Design	505-5825	505-5800	docad@aus.ac.ae
• School of Business & Management	505-5310	558-5065	deanofsbm@aus.ac.ae
• School of Engineering	505-5948	505-5979	dosoe@aus.ac.ae
• Student Accounts	505-5233	505-5190	finance@aus.ac.ae
• Student Affairs	505-5165	558-5024	stud_affairs@aus.ac.ae
• University Health Services	505-5691	505-5690	clinic@aus.ac.ae
• University Services	505-5172	558-5009	university_services@aus.ac.ae
• Vice Chancellor's Office	505-5208	505-5150	vcaa@aus.ac.ae

Overview

Introduction

The American University of Sharjah (AUS) admitted its first students and began classes in the fall of 1997. Modeled on US institutions of higher education, AUS is the first comprehensive university of its kind in the Gulf. It is licensed and initially accredited by the Ministry of Higher Education and Scientific Research in the UAE.

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 carried out in English.

The university facilities have been designed to accommodate 4000 students. Baccalaureate degrees are offered in over 20 majors by the faculty of the College of Arts and Sciences and three schools: Architecture and Design, Business and Management, and Engineering. The major programs of study are all described in this catalog.

The American University of Sharjah aimed to and has succeeded in building a multicultural university 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 serves students from the Gulf region and around the world by introducing them to a culture of high aspiration and achievement so they may lead productive and meaningful lives. The university is committed to a vision of itself as an independent, coeducational institution based on the American model, but thoroughly grounded in Arab culture. Its aim is to serve the educational needs of the diverse student population represented on campus. AUS is also dedicated to the preservation of the physical environment, free from pollution and degradation. This goal will be passed on to AUS graduates, in order to create citizens with a conscious sense of ecological responsibility.

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 in the new millennium.

In keeping with its mission, AUS provides students with 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 leaders of the future with a firm understanding of how society has reached its present state.

The university also gives its students a cultural and educational foundation that benefits them as they strive towards roles of leadership in professional careers and service. The combination of traditional and innovative teaching methods provides an educational environment in which students can realize their individual potential and pursue their future goals.

AUS is ready to meet the challenges inherent in preparing its students for life in the age of electronic communications, global economies, social pluralism and political interdependence. The university's mission will be met as it begins the new century in pursuit of excellence in turning out the citizens of tomorrow.

Buildings and Grounds

The American University of Sharjah is situated in University City, a 1640 acre educational complex, located 10 miles (15 kilometers) from the center of Sharjah and at a short distance from both the Sharjah International and the Dubai International Airports. University City also includes the University of Sharjah and the Higher Colleges of Technology.

Leading up to the campus of the American University of Sharjah is a three-mile (4.7 kilometer) grand boulevard flanked by chandelier lamp posts, palm trees, plants and grass. Dividing the broad boulevard is an esplanade beautifully landscaped with colorful beds of flowers.

The center of the American University of Sharjah campus comprises nine academic buildings, six of which flank a large Academic Plaza in front of the Main Building. The stunning architecture of the Main and Academic Buildings is accented by graceful Arab style domes and arches that carry this theme throughout the campus. The campus also includes six student residence halls, four for men and two for women. Faculty housing complexes are also located on campus.

The Main Building

The Main Building houses the offices and Majlis of His Highness, the Founder and President of the University, Sheikh Dr. Sultan Bin Mohammed Al Qassimi. It also includes the offices of the Chancellor, the Vice Chancellor, the Director of Admissions, the Registrar, the Continuing Education Center (CEC) and other administrative units. The building has a restaurant and a coffee shop for faculty and staff as well as a VIP dining room. Most significantly, the building houses the state-of-the-art University Library. In the rear of the Main Building is an auditorium of 946 seats facing a stage that features theatrical, dance and musical performances in addition to symposia and other public events. The building also has two smaller lecture halls of 280 and 150 seats that feature similar activities. The Campus Bookstore, the University Post Office and a bank are located on the ground floor of the Main Building.

The Academic Buildings

Nine Academic Buildings are located on both sides of the Academic Plaza surrounding the Main Building. The Academic Buildings house classrooms and lecture halls of various sizes, science and computer laboratories, workshops, studios and dark rooms as well as offices for faculty.

The City of Sharjah

The location of the university also serves 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 shorelines 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 designation, in 1998 by UNESCO, as the Cultural Capital of the Arab World.

This context facilitates the university's intention to be an

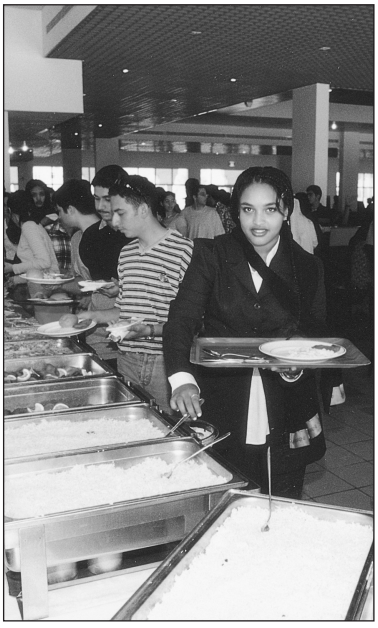
academic center at the intersection of ancient cultural traditions and contemporary intellectual currents.

The city of Sharjah boasts ten museums with splendid collections of artifacts and art objects as well as exhibitions in 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 expos. These resources permit American University of Sharjah students to broaden their formal education in a way not possible elsewhere in the region.

On-Campus Services

Campus Bookstore

Located on the ground floor of the Main Building, the Campus Bookstore meets the needs of AUS students. Its many items include: all required textbooks, various other categories of books, art supplies, stationery, notebooks, gifts and many other items students find essential.



Dining Services

The university campus provides a student dining cafeteria and a coffee shop both located behind the School of Architecture and Design Building. The student cafeteria offers various hot meals and a salad bar. The coffee shop offers sandwiches, snacks and beverages. Most residence halls are equipped with kitchenettes, including a refrigerator and hot plates, in addition to vending machines containing snacks and beverages.

Parking and Transportation

Parking lots are provided on university grounds for faculty, staff and students free of charge. Vehicles must be registered with the Public Relations Office and must display a valid AUS parking sticker on the windshield. These permits are issued once the vehicle is registered. Visitor parking is also available in the university parking lots.

AUS also offers a bus shuttle service between the student residence halls and other areas of campus. Students wishing to travel off campus may use the university services which provide transportation to the cities of Sharjah, Dubai, Abu Dhabi and Al-Ain.

University Post Office and Mail Service

AUS provides a full-service post office on campus. 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

Mail is distributed daily to all university offices by the University Post Office. The post office also maintains individual post office boxes for the university community.

Travel Office

Located in the Main Building, the Travel Office offers an efficient and cost-effective program designed to assist all AUS students, faculty and staff. The role of the office is to handle all travel arrangements and negotiate the most favorable rates.

Copy Center

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

University Health Center (UHC)

The University Health Center (UHC) and Clinic provide free primary health care to all AUS students, faculty and staff and their dependents. This health service includes 24-hour accident and emergency care offered by the UHC or if necessary by government hospitals. An ambulance service is available to deal with emergencies on campus. Great emphasis is placed on making the campus a healthy and safe place to study, work and live.

Health Services

- Health care to students, administrative staff, faculty and dependents (including 24-hour emergency care to residence halls and other campus residents)
- Preventive care including vaccinations and immunizations
- First Aid/Emergency aid
- Follow-up treatment, observation and referral to specialists
- Counseling/Psychotherapy services for a wide range of emotional and

psychological disorders (this service is confidential and voluntary)

- Pre-registration check-up for students
- Pre-employment check-up for faculty and administrative staff
- Medical check-ups for visa purposes, in cooperation with the Ministry of Health
- Blood tests and vision tests for driving licenses
- Assistance in advising and dealing with medical insurance coverage
- Overseeing the safety in the various university labs and buildings - Chemistry, Physics, Engineering, Sports Complex, Leisure Centers, Day Care Center and Residence Halls
- Overseeing cleanliness and hygiene in the cafeteria

The AUS Clinic

The clinic is staffed with a highly qualified medical team, comprised of an internist, a general practitioner with pediatric experience, a psychologist, a nutritionist, a charge nurse and a staff nurse. The clinic is equipped with the following:

- All basic medical equipment
- ECG machine to monitor heart ailments
- Nebulizer for respiratory problems
- Glucometer
- Observation room to closely monitor patients
- Basic medications - usually supplied free of charge to patients in case of emergencies and/or for the relief of symptoms

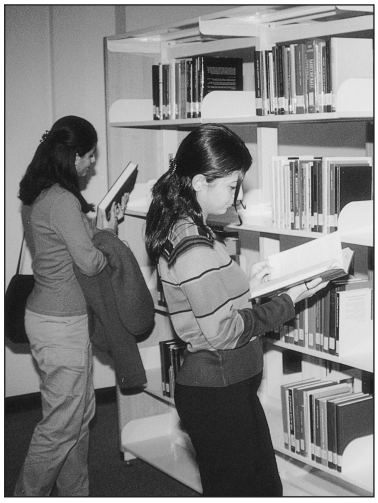
Health Education Programs

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. The UHC programs include lectures and awareness campaigns on health related issues such as:

- First aid training and CPR courses
- Seminars on substance abuse
- Newsletter on health related issues

Athletics and Recreation

The American University of Sharjah has a brand new sports complex that caters to the needs of nearly all athletic interests. The indoor facilities of this complex include: an olympic-size swimming pool, a fitness center and various athletic courts such as: basketball, volleyball, tennis and squash. Outdoors, located on the outer ring of the campus, one can find athletic fields, basketball, volleyball and tennis courts in addition to a new football field. An intramural sports program is being established by the university that will be an exciting complement to students' academic, social and cultural education. Involvement in intramural sports activities is a wonderful opportunity for students to make new acquaintances, develop new friendships and enjoy the benefits of physical activity and exercise.



University Resources

The University Library

The AUS library occupies the third floor of the Main Building. The library's collection is growing and is comprised of materials to support the curriculum and the general information needs of AUS. The majority of the library's holdings are in English, however there are also materials available in Arabic. The library is student-oriented and provides group study rooms, quiet study areas and access to computers. An online catalog system can be used to search for library materials from any location on campus. Using the library website, students and faculty have access to a number of on-line periodical indexes, full text journals and magazines. The library utilizes a computer classroom where students are taught how to use library resources. The library works in conjunction with all parts of the university in order to provide a strong foundation of information for all classes taught at AUS.

Computer Laboratories

AUS maintains a variety of specialized computer laboratories that are available for all students. Various training courses are offered throughout the academic year, targeted at helping members of the university community (students, faculty and staff) utilize the computing resources.

The Information Technology Department (ITD) is at the center of AUS's computer needs. The university's computer network uses fiber-optic cables that interconnect the entire campus, including the residence halls and faculty housing. ITD enables the whole campus to benefit from this system. ITD serves the computer related administrative, instructional and research needs of

students, faculty and staff. Assistance is provided by this department throughout the campus from computer labs to personal computer resources. ITD maintains a campus-wide network and acts as the university's gateway to the Internet for academic purposes.

Science and Engineering Laboratories

The Science and Engineering Programs are equipped with state-of-the-art laboratories and equipment. Chemistry and chemical engineering laboratories are equipped with standard chemical instrumentation, including: balances, centrifuges, pH-meters, spectrophotometers and chromatographic equipment and special labs for polymer chemistry. The physics laboratories are supplied with all the standard equipment and the latest electronic technology. The biology laboratory will be equipped with the latest in binocular microscopes. All of the necessary sample slides and other equipment will be ready for the laboratory part of the General Biology course. Civil, electrical and mechanical engineering laboratories and workshops, located in the Engineering Buildings, are also supplied with modern equipment to complement the high quality curricula designed for educating engineers of the future.

Architecture and Design Digital Studios

The School of Architecture and Design uses the Macintosh operating system in its digital classrooms and studios. Basic computer instruction is given in the digital classrooms. Second year students benefit from personally assigned workstations in digital studios. Multimedia, video and sound equipment are featured in the Advanced Digital Laboratory.

Language Resource Center

The English Language Resource Center is located in the Languages Building. The center can serve 25 students simultaneously using audio, video, slides and computer-assisted instruction. State-of-the-art computerized teaching labs provide interactive learning in English and will include other languages in the future.

Centers for Learning Enhancement

The American University of Sharjah offers several special programs through a variety of departments that students can use in order to help them with their studies. The goal of these centers is to create an environment that supports the learning endeavors of AUS students. In them, students gain the skills and insights they need to meet educational challenges and thrive in their life and learning. The centers are all program specific and students should contact the departments for information about how they may utilize the following programs:

- General Chemistry Tutorial Sessions
- Math Lab Learning Center
- The Physics Clinic
- The AUS Writing Center
- Accounting Lab Learning Center
- The Economics Tutorial Center

Career Center

The Career Center at the American University of Sharjah helps students and graduates in their search for summer internships and employment prospects. The professional staff at the Center provides assistance in developing career objectives and strategies for exploring career opportunities. The Center organizes career development workshops, corporate briefings and employment fairs in order to facilitate interaction between potential employers and AUS students and graduates. The Center is also developing an up-to-date electronic data-base of employers in the UAE and the Middle East. The data-base will be available to all students on campus.


HE AMERICAN UNIVERSITY OF SHARJAH

Admissions, Registration and Degree Programs

Admissions

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

The university requires regular attendance at all classes, lectures, studios, laboratory sessions and seminars. Pursuing one's education through correspondence or by merely passing the university examinations is not permitted.

The medium of instruction is English. A good command of the language, both oral and written, is essential to a student's success in the degree programs.

The Office of Admissions is responsible for the admission of students to any division of the university. All inquiries, requests for application forms and subsequent correspondence should be addressed to:

American University of Sharjah
Director of Admissions
P.O. Box 26666
Sharjah, United Arab Emirates
E-mail: admission@aus.ac.ae

Admission is valid only for the semester for which a student applies. If an applicant is granted admission for a certain semester and fails to register, the application may be reconsidered, upon request, for the following semester only.

Procedures for Applying

Every applicant is required to submit a completed application and the following documents:

- Recognized secondary school certificate
- The grades of the last three years of secondary school, including general average and rank
- When applicable, a certified document of the results of the official secondary school examinations
- Four recent photographs
- A photocopy of the identity card or passport
- Test of English as a Foreign Language (TOEFL) scores
- A non-refundable application fee of Dirhams 150.

Early Admission Decisions

The Admissions Office will consider and process completed applications upon their receipt prior to the deadlines noted below.

Application Deadlines for Admission

All applications must be on file in the Admissions Office by the following dates:

Fall by August 15
Spring by January 1

Students requiring visas should apply one month before the above deadline.

Admission Requirements

Secondary School Certificates

Secondary school certificates are awarded either by a ministry of education or by private schools and institutions. The university recognizes certificates awarded by ministries of education. However, some countries award two levels of secondary school certificates. In this case, the university recognizes the higher certificate.

The university accepts certificates awarded by private secondary schools which are recognized by their host country.

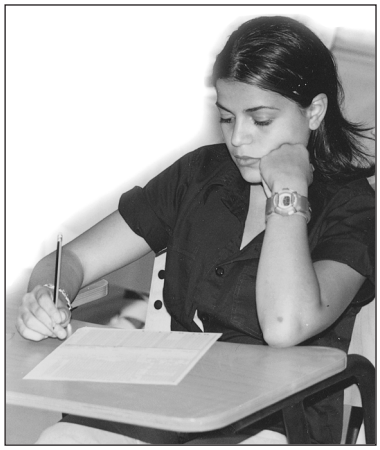
Other certificates, such as the General Certificate of Secondary Education (GCSE) and the International Baccalaureate (IB), are recognized by the university.

Specific Secondary School Certificates and Program Admission Requirements

Some secondary school programs are divided into a variety of branches:

Literary Certificates

Literary certificates qualify applicants to be considered for admission to the College of Arts and Sciences (except for Computer Science), all majors in the School of Business and Management and all majors in the School of Architecture and Design (except for Architecture and Interior Design).



Scientific Certificates
Scientific certificates qualify applicants for admission consideration to any of the programs offered by the three schools or the College of Arts and Sciences.

Technical and Vocational Secondary School Certificates
Highly motivated students with these certificates may be admitted to a major that corresponds to the nature of the technical or vocational secondary school program. For example, the holder of a technical secondary school certificate in electricity may apply to Electrical Engineering.

Other Certificates: GCE, GCSE, IGCSE

The Ministry of Education in the UAE recognizes these certificates as equivalent to the Secondary School Certificate of the UAE under the following conditions:

- That the school awarding these certificates is recognized by the Ministry of Education and teaches Islamic education and Arabic language following the curriculum set by the Ministry.
- The student has successfully completed the twelfth grade.
- The student has passed, over and above Arabic and Islamic Studies, five of the following subjects:
  - Geography
  - History
  - General Sciences
  - English Language
  - Economics
  - Mathematics
  - Physics
  - Chemistry
  - Biology
  - French
  - Business Administration

As far as the GCE is concerned, five subjects at the O-level and two subjects at the A-level are required with a minimum grade of C.

International Baccalaureate (IB), Lebanese Bac., French Bac. and German Abitur
Certificates like the GCE with advanced levels, such as the Lebanese Baccalaureate Part II, the French Baccalaureate (II) and the German Abitur entitle their holders to consideration for admission with freshman status.

For the holders of the International Baccalaureate to be considered for admission to the university, they must have completed any six subjects, with at least three subjects at the higher level. However, the School of Engineering requires mathematics or physics at the higher level.

Iranian Secondary School Certificate
The Iranian Secondary School Certificate is awarded upon successful completion of the eleventh year of study starting with the first grade of elementary school. The Iranian Ministry of Education requires an additional year (12th year) for students applying for admission to Iranian universities. Accordingly, AUS requires the completion of the 12th year of schooling.

Advanced Standing

Students who achieve a minimum grade of B in the IB Higher Level, GCE A-Level, the Lebanese Baccalaureate, the French Baccalaureate, the German Abitur or the American Advanced Placement tests may be awarded course credits.

Test of English as a Foreign Language (TOEFL)

To complete the requirements for admission to any college/school, applicants must take the TOEFL. A minimum score of 173 on the international TOEFL is required (Note: The AUS TOEFL code is 0526). TOEFL scores are valid for two calendar years only. Students who do not attain the minimum score of 173 in TOEFL, but who otherwise meet AUS admission standards will be admitted to the Intensive English Program (IEP) at the university.

Placement Tests

All freshmen applicants who attain the minimum score or higher in TOEFL are required to sit for an English placement test administered by the university. The purpose of this test is to determine the English course in which the student will be placed.

Various placement tests are required by the different majors. Depending on their major, students must take the placement tests according to the chart below:

Major	English	Arch. Math	Eng'g Math	Bus. Math	Physics
Engineering (any major)	Yes	No	Yes	No	Yes
Business (any major)	Yes	No	No	Yes	No
Architecture/Interior design	Yes	Yes	No	No	No
Multimedia/ Visual Communication/ Heritage Management/Design Management	Yes	No	No	Yes	No
Communications/English/Translation	Yes	No	No	No	No
Computer Science/Environmental Sciences	Yes	No	Yes	No	Yes
Economics/Public Administration	Yes	No	No	Yes	*
Undeclared Major	Yes	No	*	*	*

**The appropriate placement test must be taken before a student can enroll in the first year freshman course. No student is allowed to sit for the placement test more than once for any given admissions session.*

Transfer Applicants

The university approves in principle the admission of transfer applicants. There are three categories of transfer:

1. Transfer from one department to another in the same school or college at the university (transfer within school/college).
2. Transfer from one school or college to another within the university.
3. Transfer from other institutions of higher education to AUS.

1. Transfer within a school/college

This category refers to a change of major within a school or college. To be eligible for transfer the student must meet the requirements for admission to the new major.

A student seeking transfer must submit, to the new department, a transfer request form provided by the Office of the Registrar together with a transcript of his or her record. The new department makes the decision on the student's admission.

2. Transfer from one school or college to another

A student transferring from one school or college to another within the university is considered as a new student by the school or college to which the transfer takes place. Thus, the student must submit a transfer request form provided by the Office of the Registrar, including his/her transcript of record.

3. Transfer from other institutions of higher education

Candidates transferring from institutions of higher education are eligible for consideration for admission subject to the following conditions:

- They are transferring from a recognized institution of higher education.
- Prior to their admission to the institution from which they are transferring, they had met the requirements for admission to a AUS.
- They have successfully completed one or more semesters at a recognized institution of higher education.
- They meet the English language proficiency requirements.

Transfer applicants who have completed only one semester in an institution of higher education are required to submit official grades of their third year secondary school and college/university official transcripts. Transfer applicants who have completed more than one semester should submit their transcript of record. (All transfer applicants are required to submit their official transcript of record together with the syllabus and course descriptions for courses they seek to transfer. They should also present the required TOEFL scores. The decision regarding which credits are awarded is made by the appropriate academic division.) In some programs, students may be required to submit samples of their work, assignments and examinations. Students who seek transfer credits for studio courses are advised to also provide a portfolio of completed coursework in photographic, digital or original format.

Transfer applicants may be given transfer credit for courses required in their majors if they obtained grades of not less than B (3.0) in those courses. For courses that are not required by the major, transfer credits will be given if the grades received were not less than C (2.0).

A maximum of 75 transfer credit hours will be accepted from four-year colleges and/or universities and a maximum of 60 credit hours will be accepted from two-year colleges.

Readmission

A student in good standing whose studies at the university are interrupted for no more than two semesters must submit a formal request for readmission to the Office of the Registrar. This must be done at least one month before the beginning of the semester for which the student wishes to be readmitted.

Applicants with Disabilities

Depending on available facilities, the university intends to provide special services to applicants with certain disabilities. Those who need special services are requested to contact the Dean of Student Affairs at AUS. This information will be treated confidentially.

Registration

Orientation Program

Prior to registration, the Office of Student Affairs organizes an orientation program for all new students to acquaint them with university life. This is achieved through campus tours and visits, meetings, lectures, demonstrations and other relevant activities. For more information refer to the section in this catalog on the Office of Student Affairs.

Registration

A registration guide is distributed to every student before the registration period begins by the Office of the Registrar. The guide divides students into various groups and indicates the registration steps along with the place, date and time for each step. The Registrar's Office also publishes a list of course offerings for each academic program. Students are urged to carefully read the registration guide and the list of courses offered each semester.

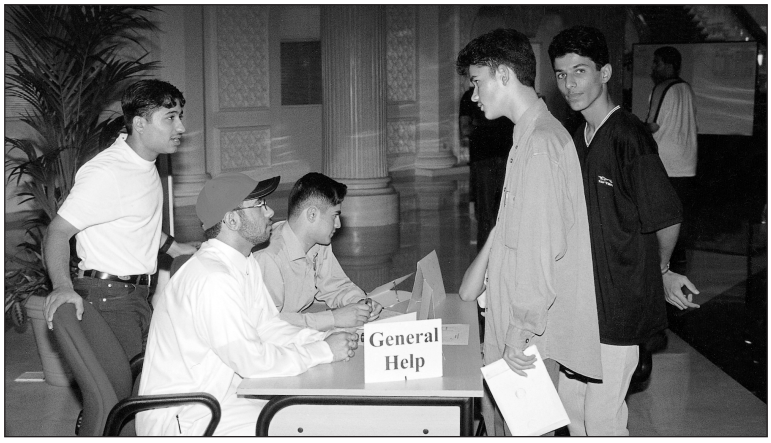
Registration involves three main steps:

1. Advisement and consultation
2. Selection and registration of courses
3. Payment of fees

Registration in the student's absence or by way of proxy is not permitted. Registrants are urged to make sure that all documents required for finalizing their admission, particularly those indicated in the letter of admission, are submitted to the Office of Admissions before registration begins.

1. Advisement and Consultation

All students are assigned advisors and advising appointments which are indicated in the registration guides.



Each student is responsible for consulting his or her registration guide for this information and for meeting with his or her advisor at the appropriate date and time.

2. Selection and Registration of Courses

The selection of courses must be undertaken initially by the registrants themselves. During this stage they prepare drafts of their semester schedules and present them for discussion with their respective advisors. A special form for this purpose is provided by the Registrar's Office. Once the courses are agreed upon, they are entered into the computer so that the student can proceed to the payment of fees.

New students should bring the following when they meet with their advisor:

- The Letter of Admission
- Identity card, passport or university student I.D.
- Draft of their semester schedule

3. Payment of Fees

With the schedule card signed by the advisor, the student proceeds to the cashier's station to pay the fees on the date indicated in the registration guide. The fees must be paid in full. No student is considered registered unless the fees are fully settled.

AUS accepts the following methods of payment:

- Cashier's checks
- Certified personal checks drawn on local banks
- Cash
- Credit cards

Deferment of Fees

The university does not allow deferring payment of fees due after the registration period except by special permission. Exceptions are made only if the following conditions are met:

- A letter is submitted to the Office of Student Accounts by the student's sponsor explaining the reasons for their inability to pay the full fees at registration; this letter must be received before or during the registration period
- At least 50% of the full amount due is paid before or during the registration period
- Approval for deferment and terms of payment are stated in writing and signed by an authorized university official

Please note that a charge of Dhs. 500 is added to the amount due if a check is returned due to insufficient funds.

University Divisions and Degree Programs

College of Arts and Sciences

The College of Arts and Sciences offers programs leading to the following degrees:

- Bachelor of Arts in Communication
- Bachelor of Arts in English Language and Literature
- Bachelor of Arts in Public Administration
- Bachelor of Arts in Translation and Interpreting
- Bachelor of Science in Computer Science
- Bachelor of Arts in Economics
- Bachelor of Science in Environmental Sciences

School of Architecture and Design

The School of Architecture and Design offers programs leading to the following degrees:

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

School of Business and Management

The School of Business and Management offers programs leading to the following degrees:

- Bachelor of Science in Business Administration with concentrations in:
  - Accounting and Finance
  - Management and Marketing
  - Management Information Systems and Accounting
- Bachelor of Science in Finance
- Bachelor of Science in Management Information Systems
- Master of Business Administration
- Executive Master of Business Administration

School of Engineering

The School of Engineering offers programs leading to the following degrees:

- Bachelor of Science in Chemical Engineering
- Bachelor of Science in Civil Engineering
- Bachelor of Science in Computer Engineering
- Bachelor of Science in Electrical and Electronic Engineering
- Bachelor of Science in Mechanical Engineering

Detailed information about concentrations within majors are given in the section of the college/school offering the major.

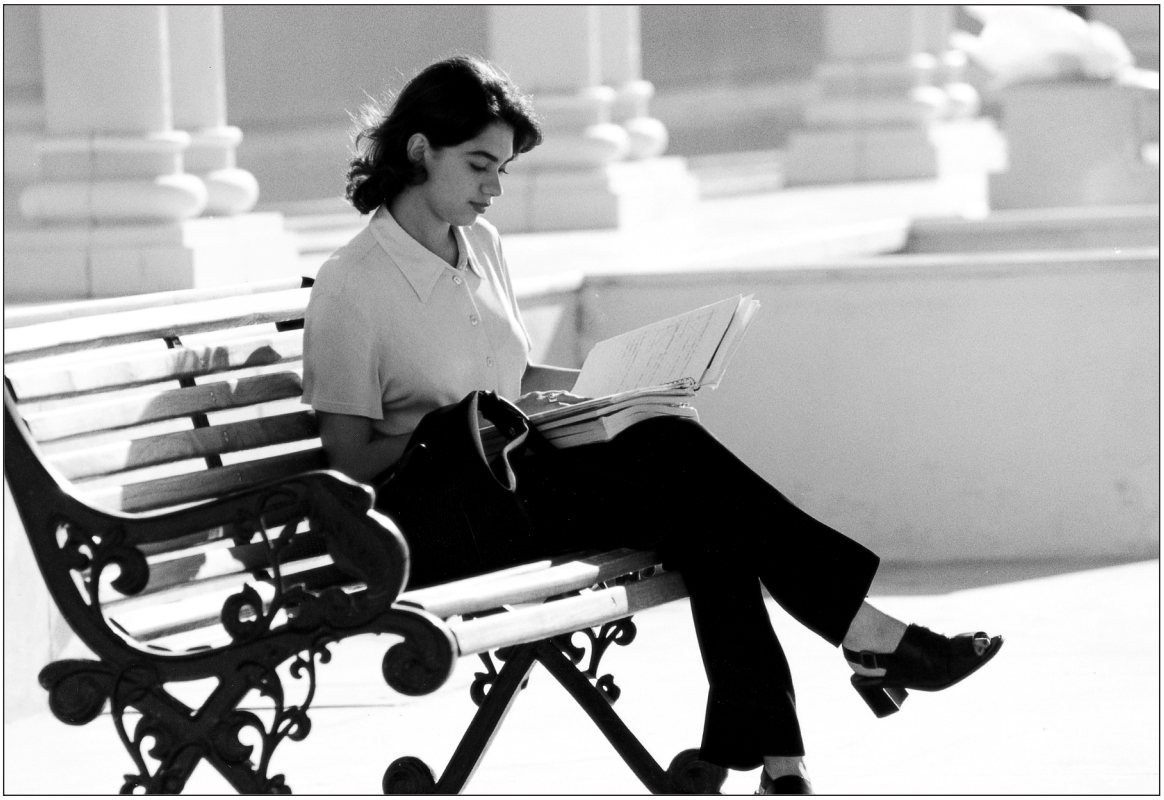
University Degree Requirements

Students are governed by the following minimum requirements for the bachelor's degree. Each specific degree program has further major and major-related requirements that are detailed in the respective teaching unit sections below.

Caution: *The course offerings and requirements of the American University of Sharjah are under continual examination and revision for improvement. This catalog is not a contract; it merely presents the offerings and requirements in effect at the time of publication and in no way guarantees that the offerings and requirements will not change. The university specifically reserves the right to change requirements for any major during any particular year. The individual student assumes full responsibility for compliance with all academic requirements. Current course offerings and current major and degree requirements may be obtained from the Office of the Registrar.*

Credit Hours and Residence Requirements

All bachelor's degrees require completion of at least 120 credit hours (engineering programs require 140 credit hours and architecture 170) of course work. At least 45 credit hours of the last 60 earned must be completed in residence at AUS. A minimum of 21 credit hours must be completed at the American University of Sharjah in upper-level courses in the student's major. A maximum of 75 credit hours may be transferred towards a bachelor's degree in four year programs.



Overall Grade Point Average

Students enrolled in a degree program must maintain an overall grade point average of at least 2.0 on a scale of 4.0 in order to remain in good standing to graduate.

Major Grade Point Average

In order to be considered in good standing in the major, a student must maintain a major grade point average of at least 2.0 on a scale of 4.0.

Major Requirements

Each student in a degree program must complete at least 36 credit hours in the degree major and in related courses, no fewer than 21 of which must be earned in upper-level courses taken in residence at the American University of Sharjah.

A grade of C- or better is required for each major, major-related or minor course. Course grades lower than C- in the major will have to be repeated or an equivalent course will need to be taken in order to satisfy the major requirement involved.

A studio course completed with a "D" may not have to be repeated if it is part of a "course pair" that allows averaging. See requirements listed under individual degree programs.

Declaration of Major

Normally, students declare their academic major by applying to a particular school or college and to a major program within that school or college for admission. 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).

Interdisciplinary Majors

In addition to the established major programs, students may opt to construct their own major program leading to a Bachelor's degree in Interdisciplinary Studies. To design and complete an interdisciplinary major, a student must have the approval of three faculty members who represent the various disciplines involved in the interdisciplinary field and the dean of the college/school.

Interdisciplinary major programs must include at least 42 credit hours, including 36 credit hours carefully selected to form an academically sound, unified and well defined program and 6 credit hours in independent study for a senior thesis. At least 75% of the 36 credit hours must be upper level as defined by the teaching units that offer them.

For permission to undertake an interdisciplinary major, the student applies to the dean of the college/school in which he or she is enrolled. A maximum of 18 credit hours of work completed prior to the semester in which the application is made may be included in the program. The 6 credit hours of an independent study for a senior thesis must be supervised by the major advisor and must be focused on the program's central concept.

Minors

All minor programs consist of a minimum of 18 credit hours including at least 9 credit hours in courses above the introductory level in the discipline. At least 9 credit hours of the minor must be taken in residence at the American University of Sharjah.

Specific course requirements for minors are listed under departmental programs. Students should consult their advisors and/or the department about the procedure for declaring a minor. Minors are noted on the student's permanent record (transcript) at the time of graduation.

A grade of C- or better is required for each course used to satisfy the requirements of the minor.

Second Field of Study

Students may pursue a second field of study in an area by taking a minimum of 15 credit hours (five courses) in that area. Those courses will be specified by the department offering the second field.

A grade of C- or better is required for each course used to satisfy the second field of study.

Free Electives

To satisfy the free elective requirements, a minimum of 9 credit hours of free electives must be completed. These free electives can be taken from any school. Exceptions may only be granted if satisfying the professional accreditation requirements within a specified limit of credit hours necessitates taking some of the electives in specific areas. For the academic year 2000/2001 students in some majors may be required to take the free electives in areas of study within their majors.

University Graduation Requirements

Every student must successfully complete the following requirements to graduate:

- Arabic Requirement
- English Language Competency Requirement
- Mathematics and/or Statistics Requirement
- Computer Literacy and Information Access Requirement
- Science Requirement
- Humanities Requirement
- Social Science Requirement

Arabic Requirement

All students (native and non-native speakers of Arabic) must satisfy the Arabic requirement by passing with a grade of C- or better any one (1) of the following Arabic courses:

- ARA 101 Reading in Arabic Heritage I
- ARA 102 Reading in Arabic Heritage II
- ARA 103 Composition for Native Speakers of Arabic
- ARA 104 Arabic as a Second Language I
- ARA 200 Arabic as a Second Language II
- Any other Arabic Language or Literature course with the approval of the Dean of the College of Arts and Sciences

Students who transfer to the American University of Sharjah may also satisfy the Arabic requirement by transferring 3 hours of acceptable college level Arabic credits with a grade of C (2.0) or better. Arabic course credits acceptable for transfer must be approved by the Dean of the College of Arts and Sciences.

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.

All matriculating students must take the English Placement Test to determine which COM (Communication) course they are to be placed into (001, 101 or 102). To graduate, all students must satisfy the English language competency requirement by completing, with a C- grade or better, 12 credits in Communication/English courses.

COM 101 (Academic Writing) and COM 102 (Writing and Reading Across the Curriculum) should be completed in the first year (freshman) or before completion of 30 credit hours. Students should complete their 12 credit hours in COM/ENG courses by the end of their second year (sophomore).

Students who transfer to the American University of Sharjah may satisfy the English language requirement by transferring up to 6 credit hours of acceptable Communication/English credits and taking an additional 6 credit hours of Communication/English courses at the 200 level or higher. Communication/English course

credits acceptable for transfer must be approved by the chair of the English Department.

Mathematics and/or Statistics Requirement

All students must have mastery of quantitative reasoning and university level mathematical skills. Students should satisfy this requirement by the end of the second year (sophomore).

All students must satisfy the Mathematics and Statistics requirement by passing with a grade of C- or better two courses (6 - 8 credit hours) in mathematics and/or statistics (at least one course must be in mathematics). These courses should be chosen from the list approved by the college/school of the student's major in consultation with and the approval of the student's academic advisor.

Students who transfer to the American University of Sharjah may satisfy the Mathematics and Statistics requirement by transferring a minimum of 6 - 8 credit hours of acceptable Mathematics and Statistics (of which 3 credit hours must be in mathematics). All course credits acceptable for transfer must be approved by the chair of the Department of Computer Science, Mathematics and Statistics.

Computer Literacy Requirement

All American University of Sharjah students must be computer literate and know how to access information through digital technology.

Students may satisfy the Computer Literacy requirement by 0passing with a grade of C- or better one or more courses from a list of approved courses in which information technology is integrated. The university will conduct regular assessments of students who take these courses to ensure that the computer literacy standard is met by all graduates.

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 (2) of the following courses with a grade of C- or better:

- BIO 101 (General Biology I)
- BIO 102 (General Biology II)
- BIO 103 (Introduction to Life Sciences)
- CHM 101 (General Chemistry I)
- CHM 102 (General Chemistry II) or CHM 103 (Chemistry and Everyday Life)
- PHY 100 (Conceptual Physics)
- PHY 101 (General Physics I)
- PHY 102 (General Physics II)
- PHY 103 (Astronomy)
- PHY 104 (Physics for Architecture)

General Education Requirement

Students must satisfy the General Education requirement by completing at least 15 credit hours or five (5) courses in the Humanities and Social Sciences curricula with a grade of C- or better. If available, students must take four of the courses (12 credit hours) from the thematic sequences courses. The thematic courses are designed around themes that aim to connect history, culture, civilizations, nature and peoples of different times and places. The remaining 3 credit hours must be taken from the following areas in the Humanities (H) and Social Sciences (SS):

- Arabic Language and Literature (H)
- Cultural Studies (H)
- Economics (SS)
- English Language (H)
- English Literature (H)
- History (H)
- History of Material Culture (H)
- Philosophy (H)
- Political Science (SS)
- Psychology (SS)
- Public Administration (SS)
- Sociology (SS)
- Translation (H)

Non-degree Study

Non-degree status is the designation used for students who are enrolled in credit courses at the American University of Sharjah but 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, a student must submit a regular application with the required documents, specifically in terms of grades and TOEFL scores, to the Office of Admissions on the dates assigned for regular full-time students. An applicant should hold a secondary school certificate and obtain the approval of the pertinent dean.

Credit earned in courses at the American University of Sharjah in non-degree status may be applied to a degree program in one of the schools or in the College of Arts and Sciences in accordance with the guidelines below.

Enrollment Criteria

Non-degree students may enroll in any university course for which they have the necessary academic background and qualifications. Courses are open to:

- High school graduates
- Students in good standing at other accredited colleges or universities
- Students with undergraduate degrees (bachelor's degrees)

American University of Sharjah students who have not completed their degree program and students who have been dismissed from the university in the previous twelve months are not allowed to register with non-degree status.

Registration

Non-degree students must register for courses through the Office of the Registrar. Information on university degree programs and non-degree programs is available at the Registrar's Office. Part-time, non-degree students will be given access to computer laboratories but not a computer account number. They will also have library privileges but no access to the sports complex. The fees are 1500 Dirhams per credit hour.

In courses with enrollment limits, priority is given to students pursuing degree programs.

Academic Standards and Regulations

Non-degree students are held to the same academic standards as degree students. The student must maintain a 2.0 GPA.

Transferring from Non-degree to Degree Status

Students wishing to transfer from non-degree status to degree status may apply to have their non-degree credit hours applied toward a degree program. To apply to a degree program, students must have completed 15 credit hours with a cumulative GPA of 2.0 and submit the appropriate application forms and supporting documents to the Office of Admissions.

If admitted to a degree program, non-degree students are entitled to request transfer of their credits to the regular university program they wish to join. The university rules and regulations governing transfer courses and credits will apply.

Audit Registration

A person who has been admitted to the university, who wishes to attend a class but does not wish to participate, take examinations, receive a final grade or receive credit for the course may register, with the permission of the instructor, as an auditor in the class. An auditor is not required to take active part or to pass examinations. The instructor may establish standards of class participation and attendance for auditing that must be met if a student is to remain in audit status.

Changes to or from audit status must be made before the last day to add a course. Tuition and fees for auditors are the same as those for students registering for credit.

Tuition and Expenses

**** At the time of printing this catalog, the exchange rate was $1=3.68 Dhs***

Tuition Fees for Academic Year 2000-2001

- College of Arts and Sciences: Dhs. 35,000* all majors except Computer Science Dhs. 40,000
- School of Business and Management: Dhs. 40,000
- School of Architecture and Design: Dhs. 40,000
- School of Engineering: Dhs. 40,000
- Intensive English Program: Dhs. 35,000

Student Activities Fee

Dhs. 100 per semester is charged for the Student Activities Fee.

Other Expenses

Costs of textbooks and supplies are the responsibility of the student.

Third-year students in Architecture and Design are required to provide their own laptop computer.

Late Registration Fees

An additional fee of Dhs. 200 is charged for late registration.

Student Housing Fees

AUS has six campus residence halls (four for men and two for women). Students who secure visas to the United Arab Emirates through the university and whose parents do not live in Sharjah are required to reside on campus. For others, living on

campus is optional. The housing fees are as follows:

Private **Dhs. 12,500 per year**
(Single occupancy with private bath and kitchenette)

Semi-Private **Dhs. 10,000 per year**
(A private room with a shared bath and kitchenette)

Sharing **Dhs. 6,300 per year**
(Double occupancy with a shared bath and kitchenette)

Single **Dhs. 6,300 per year**
(Double occupancy with a common bath - for men only)

Double **Dhs. 4,000 per year**
(Double occupancy with a common bath - for men only)

Note: All fees are due each semester at the time of registration and form an integral part of registration.

Fees for Summer Sessions 2000-2001

Tuition: tuition fees for the Summer Session are pro-rated at Dhs. 1,500 per credit hour.

Student activities fee: Dhs. 50

Other costs and fees: cost of textbooks and supplies are the responsibility of the student.

Student housing fees: three types of rooms are available during the summer session.

Private Dhs. 1000
(Single occupancy with private bath and kitchenette)

Semi-Private Dhs. 800
(Private room with a shared bath and kitchenette)

Sharing Dhs. 600
(Double occupancy with a shared bath and kitchenette)

Financial Aid

Several types of financial aid are available to AUS students.

Scholarships

The university has some funds available for highly qualified students with limited financial resources. Students may apply for financial aid regardless of their race, color, gender, religion or national origin.

The following is a brief description of the financial aid policy.

Tuition Remission

- First-time students with limited financial resources who demonstrate academic excellence by maintaining a minimum cumulative grade point average of 85% or equivalent in high school may apply for a tuition remission ranging generally between 25% to 55% of the tuition fees. Financial Aid applications must be submitted to the Financial Aid Office by August 1st for the fall semester and December 15 for the spring semester.
- Full-time students with limited financial resources who have completed a minimum of 12 credits at AUS and who demonstrate academic excellence by maintaining a minimum semester GPA of 2.5 and cumulative GPA of 3.0 may apply for a tuition remission ranging generally between 25% to 55% of the tuition fees. Financial Aid applications must be submitted to the Financial Aid Office by May 15 for the fall semester and December 15 for the spring semester.

University Merit Scholarship

First-time students who demonstrate academic excellence by achieving a minimum cumulative Grade Point Average of 90% or equivalent in the final year of their secondary education may apply for the Merit Scholarship. The scholarship granted in this category is 10% of the tuition fees. Scholarship applications must be submitted by August 1st for the Fall Semester and December 15th for the Spring Semester.

Chancellor's Scholarship

(Highly competitive)

- First time students with limited financial resources who demonstrate academic excellence by maintaining a minimum grade point average of 95% or the equivalent in high school and have outstanding personal qualities may apply for the Chancellor's Scholarship. The scholarships granted in this category generally range from 75% to 100% of the student's tuition fees. Financial Aid applications must be submitted by August 1st.

Family Tuition Grant

- For families that have more than one child enrolled simultaneously in AUS, a tuition discount of 25% is given to the second child. When three children from the same family are enrolled simultaneously, the third child will receive a tuition discount of 50%.

Rules for Maintaining Financial Aid

For Enrolled Students

- Minimum Semester GPA of 2.5
- Minimum Cumulative GPA of 3.0
- Course load should not drop below 12 credit hours in any semester

For 'Chancellor's Scholars'

- Minimum Semester GPA of 3.0
- Minimum Cumulative GPA of 3.3
- Course load should not drop below 12 credit hours in any semester


AMERICAN UNIVERSITY OF SHARJAH

Academic Regulations

Academic Advising

Academic advising is an essential element of the educational process. The American University of Sharjah requires advisor-student conferences at least once a semester. However, students are responsible for selecting their courses, meeting course prerequisites and adhering to 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, department or program chairs and deans. The university is responsible for ensuring that advising resources maintain high standards for serving students effectively and efficiently.

Students are assigned academic advisors who help them in selecting their course of study and in planning their schedules. Their advisors also approve their schedules each semester. The names of advisors will be announced by the departments concerned.

Student Responsibility

Students are responsible for their behavior, academic or otherwise, at the American University of Sharjah. The university expects that students, as mature members of the academic community, will adhere to the highest standards of personal and academic integrity and propriety.

To protect their academic status, students should seek the appropriate approval of their academic program advisors. It is recommended that students keep their own records of all transactions with the university (registration schedules and forms, grade reports, payment records, etc.). It is also advisable to keep copies of all tests, digital files, papers, etc., submitted in fulfillment of course work.

Courses and Class Schedules

Course Prefix, Number, Title, Credit Hours and Additional Information

Each discipline or field of study offered by the university is summarized by a three or four letter prefix, followed by a number indicating the level of the course content. Below is an example:

ENG 207 The Beginnings of the Novel (3-0-3)

In this example, ENG is the course prefix (which represents English) and 207 is the course number. This particular course is a second level course in English Literature (denoted by the 200 level number). This course is more advanced than 100 level introductory courses such as ENG 105 (Contemporary World Literature) and ENG 107 (Introduction to Genre).

The numbers in parentheses following the title of a course indicate the course credit information. Below is an example:

PHY 101 General Physics I (3-3-4), every semester.

In this example, the first digit in the 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 credit hours the student will receive upon successfully completing the course.

Additional information may also be provided in the course heading. In the PHY 101 example above, "every semester" appears after the credit hours information. In planning to meet program requirements, students should note that courses marked "every semester" can be taken any semester.

When the frequency of the course offering is not indicated, the course is offered at the discretion of the department. Students should check with the respective academic departments for that information.

Certain courses also have prerequisites, co-prerequisites and/or other criteria that are noted immediately following the course description.

Course Value

All courses are valued in credit hours. As a rule, each credit hour is equal to 50 minutes of class instruction a week each semester. Each laboratory credit hour is equal to 120-180 minutes of laboratory experience a week each semester.

Class Periods

Except for laboratory, workshop and specialized design and studio courses, classes ordinarily meet three days a week in 50-minute sessions or two days a week in 75-minute sessions. The university operates on a five-day schedule from Saturday through Wednesday. The university is closed for the weekend on Thursday and Friday.

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

Course Descriptions and Syllabi

Descriptions of permanent courses currently in the university curriculum are listed by course

number and title in another section of this catalog. Non-recurring topics courses are published each semester in the Schedule of Classes. Course syllabi are available from department or program offices.

Course Prerequisites

Many courses above the introductory level call for a minimum background of knowledge, as indicated by prerequisite courses cited in individual course descriptions. Titles and numbers are those of the American University of Sharjah courses. Equivalent courses satisfactorily completed at other institutions may also meet prerequisite requirements by transfer credit. Students need to consult the head of the appropriate academic area for more information. Students are responsible for entering the class with the required competence.

Student Academic Load

A student admitted to and enrolled in a degree program usually registers for 15 to 19 credit hours each semester. The required minimum load for all students is 12 credit hours per semester and the maximum load is 19 credit hours per semester. Under special circumstances, a student with a cumulative average of 3.25 GPA or better, may secure the permission of his/her dean to register for up to 21 credit hours in any one semester. All credit hours exceeding 19 credit hours will be charged at the rate of 1500 Dirhams per credit hour.

The required minimum for the bachelor's degree in arts and sciences (except computer science), and for business and management is 120 credit hours. For computer science and engineering degrees, the required minimum is 140 credit hours, and for the Bachelor of Architecture the required minimum is 170 credit hours. These requirements should be completed in the time frame allotted by the respective majors. The degree programs have been designed for completion in four years, except architecture which is a five-year program. Many students require additional time in which to complete all graduation requirements.

Official Class Standing

Hours	*Standing*
0-30 credit hours	First Year (Freshman)
31-60 credit hours	Second Year (Sophomore)
61-90 credit hours	Third Year (Junior)
91-120 credit hours	Fourth Year (Senior)
121-170 credit hours	Fifth Year

Categories of Students

Full-time Students

To be considered full-time, a student must carry a minimum course load of 12 credit hours per semester with the average being 15.

Students on probation are allowed a maximum load of 15 credits in their first semester on probation. Those who remain on probation beyond one semester may carry a maximum load of 12 credits in the following semester.

Note: Under special circumstances, the dean of the school or college may allow students to drop below 12 credits during their first semester at the university.

Part-Time Students

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

- American University of Sharjah staff members who are pursuing a degree (approval of the employee's Director is required)
- Those who need fewer than 12 credits to complete an undergraduate degree (approval of the academic advisor is required)
- Those who are granted permission by their dean for health or family reasons
- Those who are enrolled as non-degree students

Grading System

The Grade Point Average (GPA) is computed on a scale of 4.0. The following grading system is applied:

Calculated in the Grade Point Average (GPA):

A	equals a grade of 4.00 **Excellent**
A-	equals a grade of 3.70
B+	equals a grade of 3.30
B	equals a grade of 3.00 **Good**
B-	equals a grade of 2.70
C+	equals a grade of 2.30
C	equals a grade of 2.00 **Satisfactory**
C-	equals a grade of 1.70
D	equals a grade of 1.00 **Poor**
F	equals a grade of 0 **Fail**
WF	equals a grade of 0 **Administrative Withdrawal Fail**

Grades not calculated in the Grade Point Average:

I	Incomplete
IP	In Progress
AUD	Auditor; no credit
P	Pass
W	Withdrawal
N	No grade

Class Attendance

Attendance and participation in all class, studio, workshop and laboratory sessions are essential to the process of education at the American University of Sharjah. Students benefit from the lectures and discussions with their teachers 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. Instructors will provide students with written statements on the syllabus of their policies with respect to absences.

University Guidelines for Lateness and Attendance

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 instructor.
- In the event a student misses 15% of the sessions in a class for any reason, the instructor, with the approval of the dean, may initiate withdrawal of the student from the course. A grade of W will be entered on the student's record if the withdrawal is initiated before the end of the tenth week of class. If the withdrawal is initiated after the tenth week of class, a grade of WF will be entered on the student's record and will be calculated in the GPA.

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.

Although there are no excused absences, doctors' certifications of serious illness should be brought to the attention of the university physician who will inform the Office of the Registrar. The staff of the Registrar's Office will then contact the student's instructors to inform them of the expected length of absence from class.

Incomplete Grades and Make-Up Examinations

The work for a course must be completed on the day the semester ends. No incomplete grade (I) is given as a final grade in any course unless there is a compelling medical or other such emergency certified in written form by a medical or other professional. In the case of unexcused incomplete work, a grade of zero is given for the missing work with the course grade computed accordingly. Only in exceptional cases (such as the emergencies noted above), with written approval of the instructor, chair and the dean, is a student allowed to make up incomplete work within a period of two weeks after the beginning of the next regular semester.

It is the responsibility of the student to find out from his/her professor the specific dates by which requirements must be fulfilled. The deadline for the submission of incomplete grades for a course by the instructor is within 72 hours after the date of the make-up examination.

Freshman Forgiveness

A first year (freshman) student who, during the first two semesters of full-time study, receives a grade of F or WF in a course may repeat the course at the American University of Sharjah within the calendar year thereafter or in the next two regular semesters in which the student is enrolled. If the course is not offered at that time, the student may use the option the next time it is offered. No grade is removed from the student's record, but only the grade earned the second time the course is taken is used in calculating the grade point average for purposes of making decisions concerning probation, dismissal and required grade point average for graduation.

The freshman forgiveness rule also applies to transfer students of freshman standing.

Placement on Academic Probation

Students in the Intensive English Program (IEP) will be placed on academic probation at the end of any semester in which their grade point average (GPA) is below (2.0). Students on probation will have one semester in which to achieve a GPA (non-cumulative) of 2.0 or higher. If they do so in their subsequent semester, they will be removed from academic probation. Failure to do so will result in dismissal from the program.

First-year students are placed on probation at the end of their first semester if they have a grade of F or WF in two or more courses. The "Freshman Forgiveness" policy relates to probation policy only with respect to the calculation of the student's cumulative average at the end of the semester in which a course has been repeated and a new grade recorded.

Other students can be placed on academic probation for either of the following reasons:

- Failure at the end of a semester in two or more courses or
- If at the end of a semester the student's cumulative average falls below C (2.0 GPA).

The load of a full-time student who is on probation for the first time is

15 credit hours. A full-time student who is on a second consecutive probation may only register for 12 credit hours.

Removal of Probation and Dismissal

Probation will be removed at the end of any semester in which the student passes all courses and attains a cumulative GPA of 2.0.

Students on probation are advised to repeat courses in which they have obtained failing grades.

Academic probation is an action taken in the first two years of full-time study or the equivalent in part-time study. Dismissal may be anticipated by any student whose cumulative grade point average in the third or fourth year of full-time study (or equivalent in part-time study) falls below 2.0 or whose average in any semester falls to 1.0 or below.

A student may be dismissed if he/she fails to remove his/her probation by the end of the second semester on probation or if a student fails to pass a required course three times.

Actions involving academic probation and dismissal are entered on the student's permanent record and may not be removed.

Repeating Courses

In order to raise one's average or meet graduation requirements, a student may repeat courses which he/she has failed or has received a grade lower than a C-. A required course should not be repeated more than once. However, to take the same course for a third time, the student needs the approval of the relevant department chair. The original grade and the repeated course grade will be counted in the calculation of the cumulative GPA.

Drop and Add

Students are allowed to drop and/or add courses during the first week of classes. Such changes in courses are not inscribed in student transcripts. Students interested in dropping or adding courses should first consult with their respective advisors who will then report authorized changes to the Registrar's Office.

Withdrawal from Courses

Students are permitted to withdraw from courses after submitting the appropriate withdrawal form. However, maintaining a minimum of 12 credits is required. 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.

As of the 11th week of classes and up to the last day of classes, the professor of the course will indicate a grade of WF for those who withdraw from a course.

Withdrawal from the University

In the event a student withdraws from the university, the following refund schedule will be applied:

	Fees
Before the first day of classes	90%
During the first week of classes	70%
During the second week of classes	50%
During the third week of classes	25%
After the third week of classes	0%

Readmission after Dismissal

When, in accordance with university regulations, a student is dismissed, consideration for readmission is given only if, after spending a minimum of one year at another recognized institution of higher education, the student is able to present a satisfactory academic record. For purposes of applicable transfer of credits, please check under transfer applicants.

Study at Another Institution

An enrolled student who plans to take courses at another college or university for transfer credit to the American University of Sharjah must be in good academic standing and must receive prior approval from his or her department chair and dean. If the course to be taken is outside the area of the student's major, the chair of the department that would offer the course at AUS must also approve the request.

The host institution must be recognized by the Ministry of Education of the country and/or accredited.

Study Abroad

Students of the American University of Sharjah may study abroad at accredited collegiate institutions or in programs of such institutions. The American University of Sharjah has a special relationship with the American University in Washington, DC. AUS has a similar agreement with Texas A&M University for students in good standing in the School of Engineering.

After consultation with and approval of the student's advisor, department chair and dean, application is made directly to the overseas institution by the student. Transfer credit will be granted on the basis of the transcript from the visited institution.

Permanent Record

A permanent record, reflecting academic achievement, is maintained in the Office of the Registrar for each student who registers at the university.

Disclosure of Student Records

The written consent of the student is officially required to disclose his/her academic record to any individual, institution or party. Exceptions are made for parents, sponsors, authorized AUS officials and in compliance with a judicial order.

Transcripts

Students may obtain transcripts of their academic records from the Registrar's Office. Transcripts will only be released with a signed request from the student concerned. The university will issue only complete transcripts, not parts of the student record. The university will not make copies of transcripts on file from other colleges or universities.

Names on Diplomas and Degrees

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

Graduation

The university confers degrees at the end of the spring semester. Candidates for degrees file an Application for Graduation form in the Office of the Registrar during the registration period of the last expected term of study. Only after an application for graduation 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 must reapply in order to graduate later.

Participation in the Commencement Exercises

Only students who have successfully completed degree requirements by the end of the term for which they have applied to graduate are certified for conferral of a degree. In witness of the degree conferred, the permanent record of the graduate is appropriately noted with a statement and date of graduation before their diplomas are released.

All degree candidates whose academic records indicate that they can satisfy degree requirements by the end of the term for which they have applied are permitted to participate in commencement ceremonies.

University Honors and Awards

Dean's List

The Office of the Registrar issues a dean's list of honor students at the end of each semester. To be placed on the dean's list, a student must:

- Be full-time (minimum12 credit hours)
- Have at least a 3.5 GPA
- Rank in the top 10 percent of his/her class
- Have no failing grades in any of his/her courses
- Have no incomplete grades
- Have no disciplinary action against him/her

Graduation Honors

The university grants Latin Honors at graduation. To be eligible for graduation honors, students must have completed at least 60 credit hours required for their degree in residence at the American University of Sharjah and have achieved the requisite GPA. These are:

Summa cum laude:	3.90	GPA
Magna cum laude:	3.70-3.89	GPA
Cum laude:	3.50-3.69	GPA

Latin Honors are listed in the commencement program and on the student's diploma and permanent record.

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, AUS affirms the importance of respecting the integrity of individual work. The Academic Integrity Code for the American University of Sharjah 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, the American University of Sharjah 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 or she has chosen. Accordingly, each student is required to conform to the regulations of the university, of the college or school in which he or she has enrolled and of the classes in which he or 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 the American University of Sharjah, 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 (regarding such issues as collaborative work, use of study aids or take-home examinations). Students are also responsible for learning the conventions of documentation and acknowledgment of sources required in academic discourse.

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:

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, use of tutors and editing may vary among individual professors.

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, or 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: doing the work for another student, designing or producing a project for another student, willfully providing answers during an exam, test or quiz, calling a student on a mobile phone while taking an exam and providing information, providing a student with an advance copy of a test, leaving inappropriate materials behind at the site of an exam or test, 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 or school.

All charges are brought through the university faculty. Faculty members or students wishing to bring charges should do so through the faculty member in whose course or academic activity the alleged code violation occurred. In the case of students bringing charges against other students, the student bringing the charge must identify himself or herself to the faculty member.

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 school or college 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 in which the offense has occurred. That dean will then notify the student's dean, if the student is enrolled in another college, that the offense has occurred. Through this process, the university can monitor multiple occurrences of such errors of judgment by particular students.

2. Administrative Jurisdiction

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

a. Faculty members reporting an allegation of dishonesty must do so within ten (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 dean (or appointed designee).

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

c. At the preliminary 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 ten (10) 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 (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 (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 of the college or school, the faculty member making the charge may recommend a grading penalty or other sanctions.

If the student fails to attend the scheduled meeting, made known in advance to him or her, the college 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 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 F or WF or denial of credit for the course in which the offense occurred. A notation of the Academic Integrity Code violation will be entered on the student's permanent record.

   e. Suspension for one or more academic terms, including the term in which the offense occurred. A notation of the Academic Integrity Code violation will be entered on the student's permanent record.

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

A notation of the Academic Integrity Code violation will be entered on the student's permanent record.

4. 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. If consensus cannot be reached, the Vice Chancellor for Academic Affairs, or his/her representative will adjudicate.
5. If the penalty levied is (e) or (f), the dean of the college or school to which the student belongs will take the appropriate academic action. Disciplinary actions (d) - (f) will become a permanent part of the student's academic record, with appropriate notation indicating that there has been a violation of the Academic Integrity Code.
6. 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.

Notifications and Appeals

1. The dean (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 chair of the department in which the case occurred, and the student's dean if the student is a member of another major teaching unit.
2. In cases concerning notation to the permanent record [penalties (d) - (f) in 3. See above], students will be notified in writing of their right of appeal. Appeals must be made in writing within 30 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 review panel meeting. Appeals will be reviewed by the Vice Chancellor for Academic Affairs who may consult the written record of the case, the appeal request and any person involved in the adjudication process. Following the review, 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.

Suspension and Dismissal

1. The decision as to whether suspension or dismissal is appropriate in a given instance will necessarily depend on the circumstances of each case and usually on the total academic record of the student involved.
2. Suspension is effective for not less than the session 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 ordinarily entitled to resume studies in the same college or school at the conclusion of the period of suspension, provided he or she has satisfied all requirements imposed by the dean when the original action was implemented.
3. 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 interests of maintaining the standards of behavior and conduct normally expected in a university community. A student, who has been dismissed but who has not been denied the privilege of returning to the university at a later time, may apply for readmission 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 academic requirements in effect at the time of readmission.
4. The calendar year which must elapse before an application for readmission may be considered is interpreted as beginning on the final day of the session during which the disciplinary action was taken.

Records of Disciplinary Actions

1. All records pertaining to student infringement of the Code will be maintained for a period of five (5) years after the student's last registration at the American University of Sharjah. In the event that the penalties become part of the student's permanent record, the record will be maintained indefinitely. These records are subject to university regulations concerning the confidentiality of student records
2. Upon written request, students have the right to inspect their records of violations of the Code.


THE AMERICAN UNIVERSITY OF SHARJAH

Office of Student Affairs

Acting Dean
Salem Al Qaseer

Assistant Dean for Women
Moza Al-Shehi

The primary charge of the Office of Student Affairs (OSA) is to develop and maintain a supportive and enriching environment for AUS students. This goal is achieved mainly through nonacademic and extra-curricular activities.

The Office of Student Affairs offers a variety of services and programs that are designed to support the academic mission of the university. The OSA guides students in developing and maintaining positive self-esteem, individual assertiveness skills, social awareness and self-discovery. The programs offered by the OSA were designed to meet the needs of AUS students as they learn how to become tomorrow's leaders, live together in harmony, appreciate diversity, develop good mental and physical health practices and enhance ways to absorb and impart knowledge. This office is also the welcoming center for national as well as international students. It provides them with an open and friendly environment upon their arrival on campus and throughout their academic years at AUS.

The Office of Student Affairs enforces the rules and regulations concerning student life at the university. This office has the moral and legal responsibilities of upholding and promoting the highest academic and behavioral standards among its students. Students have the freedom of not joining or withdrawing from the university if they consider its regulations inconsistent with their values and expectations.

Services and Facilities

The university provides the following services and facilities to meet students' needs, including those of students with disabilities.

Student Employment

Opportunities for on-campus employment are available to all AUS students. The maximum number of hours a student may work is 10 hours per week. Students are paid biweekly. In addition to on-campus employment, the OSA is also the central conduit for AUS students interested in community service. Further information on all these employment opportunities is available through the Office of Student Affairs.

Community Services

The AUS Community Services is the link between students and the various needs found in our society. Community Services allows students to experience first-hand the value of serving others and the community. It involves them personally in social events, at the community level, which serve to enrich their life experiences.

The role of Community Services is to give students invaluable opportunities to apply their academic knowledge to real-life settings. Participation in Community Services broadens students' perceptions and understanding of the working environment in which they live. It also helps them recognize their role and responsibility to their local community and to society at large.

Services for Students with Disabilities

The Office of Student Affairs is the primary agent for the provision of access for AUS students with physical disabilities. The office works with persons having temporary or permanent disabilities in order to promote their full participation in academic programs and campus activities. The campus of AUS is designed with ramps and elevators to facilitate the needs of the disabled.

Educational Services and Counseling Services

The purpose of the learning, career and counseling center is to promote the academic, social and emotional well being of students in order to help them succeed and complete their course of study at AUS.

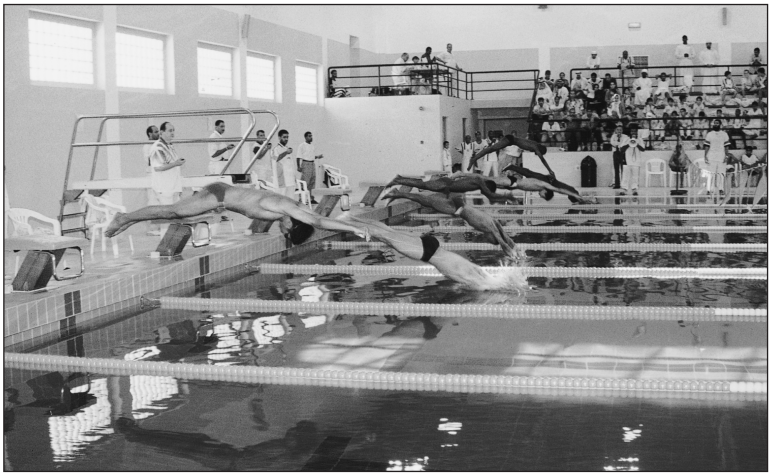
Learning services are available to all students and provide academic support. The learning center offers instruction and services for developing skills, strategies and behaviors to enhance academic success. Career services are available to assist students in developing, evaluating and effectively initiating and implementing career plans.

Counseling services support students' personal and educational development by facilitating their personal and emotional growth. All of these services include assessment and counseling, consultation and teaching. Professional confidentiality is strictly maintained in all areas of student counseling.

AUS Sports and Athletics

The athletic facilities at the American University of Sharjah are designed to benefit the entire university community. The AUS Sports Complex endeavors to foster the development and improvement of the level of UAE sports through athletic championships, symposia and training courses. The Sports Complex is open for AUS students, staff and faculty members to practice indoor football, basketball, handball, volleyball, table tennis, tennis, squash, track and field games, self defense sports and many others.

The university believes that students should be provided with opportunities to develop their talents



through a wide variety of sports. To achieve this goal, the staff provides guidance and oversight to help students develop team play, sportsmanship and healthy lifestyle skills while also experiencing positive mental, moral and emotional growth. Over 20 activities are offered, featuring both team and individual competitions. It is the goal of AUS campus sports to be as varied as possible, offering each student the opportunity to participate regardless of ability.

AUS Sports Teams

Sports Teams offer broad-based competitive and instructional programs for both genders. The teams are:

- Aerobics
- American Football
- Badminton
- Basketball
- Billiards
- Bowling
- Cricket
- Football
- Horse Back Riding
- Running
- Scuba Diving
- Self Defense
- Snooker
- Squash
- Swimming
- Table Tennis
- Tennis
- Volleyball

AUS Sports Complex

The Sports Complex facilities are as follows:

Sports Courts: this large gymnasium features two indoor basketball, tennis and volleyball courts for use in both organized sports and free recreation.

AUS Pool: a 50-meter indoor pool for lap swimming, diving and instruction.

Fitness Center: the 15m x 15m room features both free weights and a wide range of exercise machines.

Exercise Hall: this room includes aerobics equipment and is also used for self-defense events.

Squash Courts: two courts.

Outdoor Courts: six tennis courts, two volleyball courts, two basketball courts, a football field, plus changing rooms.

Gymnastics Hall: this room includes gymnastic equipment, mats, bars, etc.

Student Activities

AUS students occupy a responsible role in governing and shaping campus life as participating

members of the university community. The Student Activities Office, located in the Student Center, plays a vital role in providing students with opportunities to gain experience in leadership, social and community responsibility, and develop their intellectual curiosity through a variety of enriching and educational extracurricular activities.

Under the sponsorship of the Student Activities Office many events are orchestrated by students and offer entertainment and cultural programs for the entire university community. Some of the programs offered during the academic year include: Global Day, The Charity Festival, Environment Day, Music Festival Concert, Knowledge Contest, Student of the Year and many more.

Student Center

The Student Center plays a broad role in the co-curricular life of the university. It acts as the central headquarters for the Student Activities Office and is the gathering place for students to relax and meet to discuss academics and campus activities.

Located below the student cafeteria, the Student Center contains several meeting rooms, a student lounge, activity rooms, a multi-purpose room, a study room, an arcade room, a student courtyard, the Leopard Mini Mart and a coffee shop. All of these areas are furnished in order to provide students with a comfortable, inviting atmosphere where they can unwind.

Student Orientation

At the beginning of each semester, prior to registration, the Office of Student Affairs conducts a one-day orientation program for all new students. The program is aimed at helping new students get acclimated to AUS and its campus, as well as giving them the chance to meet other new students and returning students who assist with the orientation program. Orientation includes campus tours and visits, meetings, lectures, demonstrations and other relevant activities. Incoming freshmen are expected to participate in all activities, as they provide information which is designed to insure a successful first-year experience.

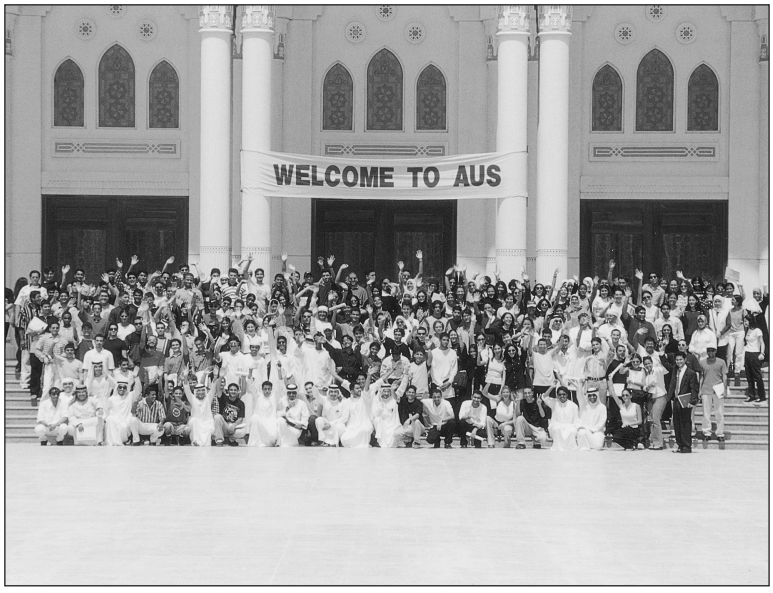
The Student Union

His Highness Sheikh Dr. Sultan Bin Mohammed Al Qassimi, Supreme Council Member, Ruler of Sharjah and President of the American University of Sharjah 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. AUS Student Government is an elected body that articulates student views and interests in the university. The Student Union is a vehicle for ensuring that students can contribute to and have a voice in formulating university priorities and policies. It also provides a structure for greater student involvement on campus.

Student Clubs and Organizations

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

The Student Activities Office acts as the central support for the numerous clubs and organizations on the AUS campus. Its role includes providing both assistance and advice with program planning and implementation. The clubs and organizations at AUS span a wide range of interests that cover: sports, music, literature, recreation, culture and social issues.



Each of these clubs has a common purpose which is assuring the adjustment to university life by all students, international and local. These organizations also aim to enrich the diverse student population with the local traditions and culture of the UAE.

AUS currently has the following clubs registered with the Office of Student Affairs:

- Accounting Club
- Arts Club
- Business Club
- Chess Club
- Cinematixs
- Computer Club
- Cultural Club
- Drama Club
- Engineering Council
- Environment Club
- Festivities Club
- Heritage Club
- Horse Back Riding Club
- IEP Club
- International Community Club
- International Women's Club
- Martial Arts Club
- Leopard Club
- Marshals
- Photography Club
- Power Hit Radio
- Realms
- Scuba Diving Club
- Sculpture Club
- Ushers Club
- Traditional Poetry Club

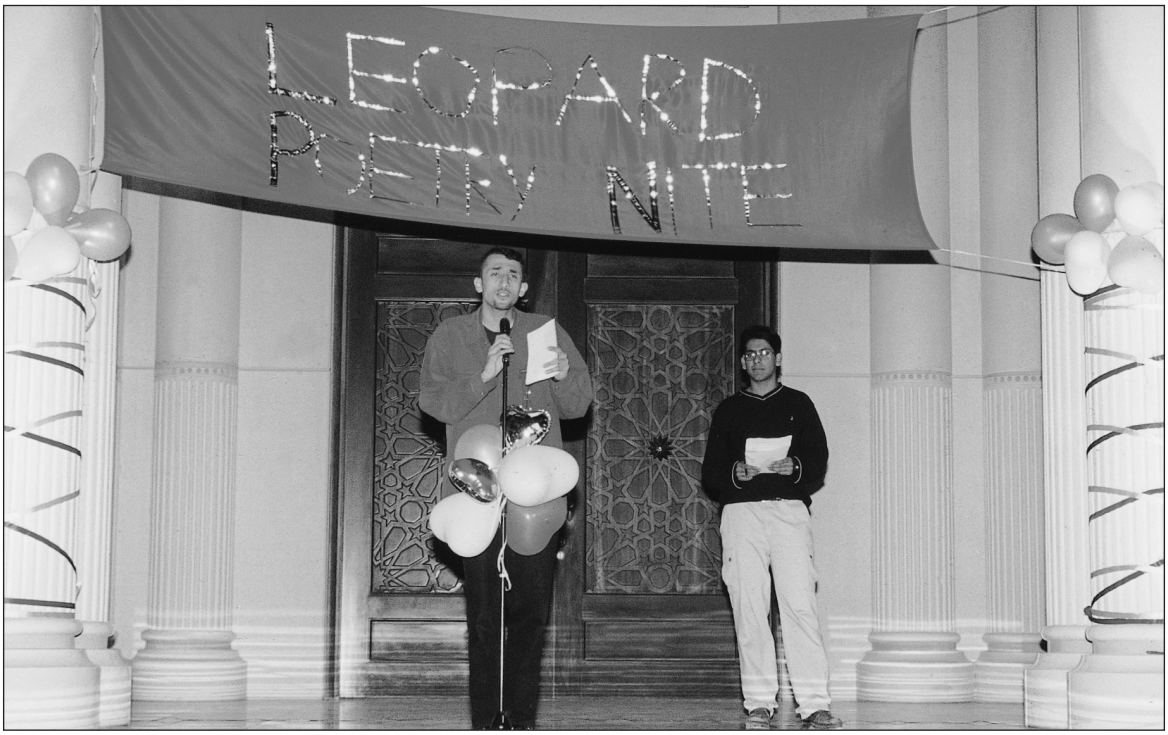
Participation in these and other groups is strongly encouraged. All students are also encouraged to form clubs that will promote their interests and hobbies and help shape their extra-curricular activities.

Student Publications

Practical journalism experience is available to AUS students through two student publications, *The Leopard* and *Realms*. Students interested in contributing to or working on these publications are advised to contact the AUS English Department for further information.

The Leopard Newspaper: "A Reason To Roar"

The leopard is the official mascot of AUS and was chosen because the UAE preserves and protects the Arabian leopard that is currently on the brink of extinction. *The Leopard* is an official biweekly university newspaper and a voice of AUS students. All students are encouraged to contribute articles, poems, features or art work to this publication.



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 with their creative work. *Realms* is aimed at fostering an interest in creative writing and in literature and to help students view the English language as a means of expressing their thoughts and feelings, not merely as an academic tool.

Residence Life

Because residence hall living is seen as a positive educational experience, students are encouraged to live on campus unless they are commuting from home. The AUS residence halls offer a unique, multi-cultural environment in which students from around the globe can live and learn from one another. The residence hall experience will complement the overall learning experience by teaching students independence and tolerance of others.

There are several options with regard to room size and cost in the residence halls. These allow students more choices in deciding their own residence hall experience. The residence halls also offer students a variety of resources and facilities including: study rooms, computer labs, dining areas, recreational areas, laundry facilities and television rooms.

Residence hall living is encouraged because it allows students to make the most of the many on-campus facilities such as the sports complex, dining facilities, libraries and laboratories as well as daily activities and evening programs.

The university offers a convenient bus shuttle service between the residence halls and other areas of campus. Transportation is also available for students from campus to the cities of Sharjah, Dubai, Abu Dhabi and Al Ain.

The residence halls for male and female students are completely separate and both maintain curfew hours that all residents are expected to abide by. All residents of the halls are expected to spend every night in the halls, unless they have written authorization from their parents indicating otherwise. To ensure the security of students, all of the residence halls are protected by security patrols. Each hall also has a supervisor on the premises who is responsible for the safety and comfort of all residents.

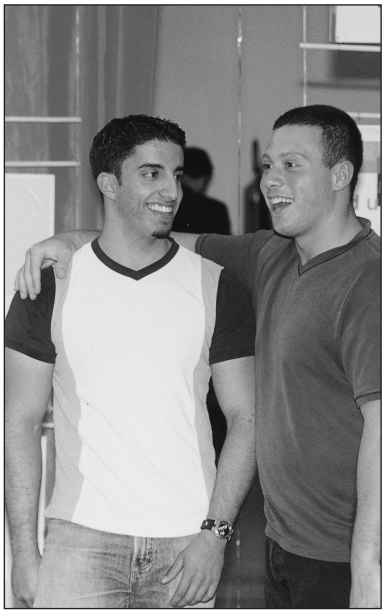
The Student Dorm Associations are a new addition to the AUS residence halls. They are committees comprised of hall residents that help organize and implement various residence halls activities and act as

coordinators between the residents and the administration. All students are encouraged to participate in the activities of these committees.

Student Code of Conduct

The American University of Sharjah is a community of individuals living, working and studying together in order to create the ultimate 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 and advanced, 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 establishes and enforces those rules and regulations. (The full text of the student code of conduct is available from the Office of Student Affairs).



Rights and Responsibilities

a. No member of the university community shall be deprived of academic freedoms, personal rights and liberties without due and fair processes of applicable university regulations.

b. No disciplinary sanctions may be imposed upon any member of the university community under authority of the university without fair and due process provided.

c. Each student has a duty to understand the rules and regulations set forth by the university. Ignorance of a rule or regulation shall not be an acceptable defense by the Conduct Council Hearing Board.

Code of Conduct

Please note that the Code of Conduct is currently under revision, you should refer to your Student Handbook for the updated version.

Misconduct under this code for which students are subject to university discipline is defined as follows:

a. Physical abuse of any person, including, but not limited to, assault and abuse, on university premises or at university-sponsored events or functions.

b. Conduct that threatens or endangers the health or safety of any person on university premises or at university sponsored events or functions.

c. Theft or unauthorized taking of university property or other property on university premises.

d. Possession of stolen or unauthorized property on university premises or at university-sponsored events or functions.

e. Willful, wanton or reckless damage to university premises or property.

f. In nonacademic university matters, dishonesty, or knowingly furnishing false information.

g. Fraud, forgery, alteration or unauthorized use of documents, university records or instruments of identification with the intent to defraud or deceive.

h. Possession or sale of fraudulent, forged or altered instruments of identification on university premises or at university-sponsored events or functions.

i. Intentional obstruction or disruption of teaching, research, administration, disciplinary proceedings or other university activities, including public service functions and other authorized activities on university premises.

j. Tampering with or unauthorized or fraudulent use of campus telephones or access codes or falsely using telephone credit cards or university computers, network systems or computer files as defined by university policy.

k. Entry or attempt to enter without lawful authority of any dwelling, building or facility on university premises, against the will of the lawful occupant or of the person lawfully in charge thereof; or being therein or thereon, without lawful authority to remain and refusing to quit the same on demand of the lawful occupant or of the person lawfully in charge thereof.

l. Failure to comply with published university policy or regulations including rules governing the residence halls, residence hall contracts or regulations relating to use of university facilities.

m. Alcohol and drug violations as defined by university policy and the laws of Sharjah and the UAE.

n. Keeping, using, possessing, selling or distributing of any

firearms, fireworks, explosives or weapons on university premises or at university-sponsored functions; or any other materials or substances which are prohibited by law with the sole exception of law enforcement officials duly authorized by law to possess firearms for the performance of their duties.

o. Distributing any printed materials (including electronic materials) in the name of the American University of Sharjah, or from any registered organization on campus without the prior approval of the Office of Public Relations and the Office of the Chancellor.

p. Gambling or other illegal or unauthorized games or contests of chance, on university premises and in university residence halls or at university sponsored functions.

q. Unauthorized soliciting or canvassing by any individual, group or organization on university premises or in university residence halls.

r. Unauthorized use of the university's corporate name, which is the property of the university, by any person, persons or organizations.

s. Failure to be fully responsible for the behavior of guests during university functions or activities, and on university premises or in university residence halls. A guest is defined as any person who is not a university staff, student or faculty member.

t. Harassment or intimidation.

u. Hazing as defined by university policy.

v. Abuse of computer equipment, (e.g. computer stalking and harassment, stealing or deleting information, internet theft or knowingly introducing a computer virus) or gaining unauthorized access to computer resources on campus. (See university policy on the abuse of Internet Technology.)

w. Failing to comply with directions of university officials acting in performance of their duties.

x. Violations of traffic laws including reckless driving and parking in unauthorized spaces.

y. Violations of Sharjah or UAE law.

Regulations for student conduct in the American University of Sharjah residence halls are based on the American University of Sharjah Code of Conduct and are incorporated into the Student Handbook.


THE AMERICAN UNIVERSITY OF SHARJAH
الجامعة الأمريكية في الشارقة

College of Arts and Sciences

Dean
Robert D. Cook

Associate Dean
Ibrahim Sadek

Mission Statement

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, including the general education programs, are designed to inspire and invigorate the intellectual and creative potential of students and to encourage them to conceptualize, reflect and act. Through the university graduation requirements, including the general education program that is provided by the college, students learn to examine the many varied aspects of Arab, Islamic, Western and non-Western cultures. They also master written and oral expression in English, learn to appreciate quantitative reasoning, scientific inquiry and method and to develop the critical ability to analyze and synthesize data and information. Finally, they build an understanding of moral and ethical dimensions that create a foundation for individual and collective lifelong decision-making.

Graduates of the College of Arts and Sciences at the American University of Sharjah will not only be prepared to achieve their personal and professional aspirations in the short-term; they will also be well qualified to pursue their studies and professional training towards a master's or doctoral degree in their chosen fields.

Faculty

The College of Arts and Sciences has distinguished teacher-scholar faculty members who are experts in their fields. They come from all over the world and comprise a group of diverse, multi-cultural academic practitioners. They provide the training and preparation our students need to meet the challenges of living and working in the global community.

Professor

Muhsin Al-Musawi (Arabic)
Fatima Badry (English, Chair)
Andy H. Barnett (Economics)
Hichem Ben-El-Mechaiekh (Mathematics)
J. Patrick Gunning (Economics)
Basil Hatim (English and Translation)
Fawwaz Jumean (Chemistry)
Lynette Lashley (English and Communications)
Ibrahim Sadek (Mathematics)
Peter Walker (Mathematics)

Associate Professor

Zayid Abdulhadi (Mathematics)
Yussef Abu-Muhanna (Mathematics)
Reda Alhajj (Computer Science)
Hussam Al-Mohamad (Computer Science)
Basim Raif Bulos (Physics)
James Peter Fallon (English)
Dennis Russell (Biology)
Kassem A. Saleh (Computer Science)
Ali Sayfy (Mathematics)
Mansour Zand (Computer Science)

Assistant Professor

Husein Abdul-Hamid (Statistics)
Bassam Abu Al-Foul (Economics)
Taher Abualrub (Mathematics)
Marwan Abukhaled (Mathematics)
Imad A. Abu-Yousef (Chemistry)
Afaf Badr Al Bataineh (Arabic)
Ahmad Al-Issa (English)
Noretta Andreasian-Thomas (Physics)
Samir Aouadi (Physics) – (on leave 2000-2001)
Maher Bahloul (English)
Judith Caesar (English)
Mary Ann Fay (History)
Gregg Frasco (Economics)
Nawar Al-Hassan Golley (English)
Nidhal Guessoum (Physics)
Asad Hasan (Physics)
Dale Holt (Public Administration)
Rabih Elie Jabbour (Chemistry)
Suheil A. Khoury (Mathematics)
Kate McCafferty (English)
Nada Mourtada-Sabah (Political Science)
Ghazi Q. Nassir (English)
Said Sakhi (Physics)
John Shannon (English; Intensive English)
Mohamed Zayani (English)

Instructor

Raja Mallek Bahloul (IEP)
Robert Conley (IEP)
Mary Lou Donegan (IEP)
Tina Driscoll (IEP)
Houda El-Koussa (English)
Holly L. Fernalld (IEP)
Leslie Giesen (IEP)
Jaswinder Gill (IEP)
John Hicks (IEP)
Richard McClane (IEP)
Craig Magee (English)
Amanda Magrath (IEP)
Robert Mond (IEP)
Daniel Norton (English)
Robert Schorr (IEP)
Pelly Shaw (IEP)
Alona Thaxton Shepard (English)
Israa Rifat Sirri (Physics)
Brian Skelton (IEP)
Jennifer Stanton (IEP)
Douglas Stewart (IEP)

Iris Switzer (IEP)
Carol Vlaun (IEP)
Noelle Wallace (IEP)
Michelle Weathers (IEP)
Deborah Wilson (IEP)
Mahmoud Yafawi (IEP)
Rita Zsargo (IEP)

The Intensive English Program (IEP)

Mission Statement

English is the medium of instruction at the American University of Sharjah. Competence in English is a prerequisite for student success. The mission of the Intensive English Program (IEP) is to prepare learners to enter the university and excel as students. The main goals of the program are to increase student language proficiency to a level suitable for study in courses taught in English and to enhance their academic skills in order for them to function successfully in first year course work.

Admission and Placement

Students who score below 173 on the Test of English as a Foreign Language (TOEFL) and who otherwise qualify for admission to AUS are eligible for admission into the IEP. Assignment to one of the five proficiency levels of the program is based on placement and standardized proficiency test scores.

Academic Credit

Each level of study in the IEP carries with it three academic credits. These credits are applied in addition to the student's other degree requirements. Only the grades of the last two IEP levels count toward the students' cumulative grade point average once students begin their studies in their majors. IEP credits are not transferable.

Organization of the Program

The IEP consists of five levels and is graded 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. The instruction is also tailored to meet the individual academic learning needs of the students. The IEP program levels are detailed in the IEP Program Organization table on the next page.

Bridge Level: IEP 005

Students who are placed in Level 5 of the IEP may take one course in Mathematics, Physics, Chemistry or Business Mathematics as determined by placement test results in these subjects.

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 full academic, credit-bearing courses. In addition, throughout all of the levels, courses are given in reading and writing. The core skill components of the program are summarized in the text that follows.

Reading

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

Writing

The writing component is designed to lead the student through the different steps of the writing process, from generating and organizing ideas to writing, editing and revising written work. Students will develop a range of skills necessary to produce academic texts, from basic sentences to university papers. The emphasis of instruction will be 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 will be met through practice in

IEP Program Organization				
Level	**Instruction**	**Self-Access**	**Total Time**	**University Credit Courses**
1	20 hours	5 hours	25 hours	0
2	20 hours	5 hours	25 hours	0
3	20 hours	5 hours	25 hours	0
4	20 hours	5 hours	25 hours	0
5	15 hours	0 hours	15 hours	1 (by placement)

interactive listening activities, which focus on understanding spoken English. The emphasis in lower level courses will be on understanding conversations, determining main ideas and details, and comprehending short lectures. The emphasis for higher level courses will be 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 focus of the speaking component is to prepare students to communicate successfully in the social and academic environments of the university. Improving both fluency and accuracy are the goals of all courses in this area. Instruction will be given in how to express an opinion articulately, agree or disagree effectively and persuade and argue a point convincingly. The emphasis will be on developing the ability of each student 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. The 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.

Vocabulary

Vocabulary is not specifically associated with a particular skill area; instead it is an integral part of every language skill. Therefore, its development must be integrated into all courses in the Intensive English Program. However, in an effort to best serve the needs of the students, vocabulary instruction will primarily be focused on high frequency survival English at the lower proficiency levels of the program, and gradually move along a continuum toward low frequency academic and technical language at the higher levels. By the time the students are ready to exit the IEP, they will have become familiar with much of the academic vocabulary necessary for success in their university studies.

Instructional Hours

On average, students receive 20 hours of classroom instruction a week. In addition, students in the first four levels are required to participate in a self-access program for five hours each week. This program consists of completing independent learning modules in the computer lab, reading lab and audio-visual lab.

Methods

All instructors are specially trained and experienced in teaching English across the curriculum. The methods, materials and equipment used are all state-of-the art and are targeted to meet student needs. As much individual attention as possible is given to students.

Evaluation

Progress tests are administered regularly. Practice tests, quizzes, midterms and final examinations are given to assess student progress in the English courses. Promotion to freshman status or to a higher level in the program is determined by examination and instructor assessment.

Academic Probation Policy

IEP students will be placed on academic probation at the end of any semester in which their grade point average (GPA) is below (2.0). Students on probation will have one semester in which to achieve a GPA (non-cumulative) of 2.0 or higher. If they do so they will be removed from academic probation. Failure to do so will result in dismissal from the program.

Duration

The length of time required to complete the program varies with the linguistic background and performance of the student. Students who enter with scores below 97 on the TOEFL will most likely require more than two semesters to complete the English language program.

Attendance

Classes meet daily, Saturday through Wednesday. Because of the intensive nature of the program, regular attendance in all courses is expected, and as a matter of policy, students are required to attend at least 90% of all IEP courses. If students miss 10% of the total classes for the semester, they will be given a written warning.

If students miss 15% of the total classes for the semester, they will be dismissed from the program. Also, an absence, whether excused or unexcused, is still an absence. Therefore, missing class for any reason (e.g., illness, traffic accident, visa problem) will count as an absence from class.

Tardiness

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 tardiness count as one absence.

Department of Computer Science, Mathematics and Statistics

The department of Computer Science, Mathematics and Statistics offers a degree program in Computer Science. The aim and mission of the computer science program is to produce individuals who can be highly effective and productive in the field of information technology. This field involves the study of the theoretical and practical principles of design and the use of information and computer systems. As computers have become a part of everyday life, the demand for professionals in this area has increased considerably.

To help meet these demands, the B.S. in Computer Science focuses on teaching the theory, design and application of computer science. The program prepares students to work as operating system developers, data base administrators, system programmers, system analysts, application programmers and as experts in artificial intelligence.

Students learn the basic principles of information and computer science and acquire knowledge to design and implement systems and application software projects. The program has both academic and professional orientations. Therefore, it enables graduates to meet challenges in real-life applications, research and in advanced studies in computer science.

Careers in Computer Science

Below are some brief descriptions of career options that individuals in computer science may pursue:

- Artificial Intelligence Specialists: work as applications programmers to apply expert system technology or neural networks to particular problems; perform pattern recognition, speech recognition and traffic control.
- Database Specialists: establish or maintain databases of information such as employee records, library catalogs or satellite data; work to develop accounting and management information system procedures and to develop code to efficiently retrieve and effectively display the results.
- Numerical Analysis Specialists: work in scientific computing and applications programming careers to code numerical algorithms; tune the parameters in the algorithms to optimize performance and integrate graphics for a display of results.
- Software Engineers: work with a team of applications programmers to write requirements, documents and specifications; write and review code specifications; test code; enhance and modify existing code and develop prototype user interfaces.
- System Analysis and Design Specialists: analyze computer systems, understand the requirements of such systems and find the relationship between the analysis and design phases.
- Theory of Computation Specialists: program data encryption algorithm, predict average and worst case behavior of computer codes and computer hardware systems and use logic programming in artificial intelligence.

Bachelor of Science in Computer Science

The AUS Computer Science Program has the following main objectives:

- To provide the professionals needed to meet the country's development plans.
- To prepare students for graduate work and research in their field of specialization.
- To provide the expertise and link through which advanced technologies and their applications could be transferred to the country.
- To provide the country, through research, with skills, ideas and innovations in certain areas of advanced technologies.

The B.S. in Computer Science program is designed to provide the following:

- Breadth and depth: The program has a core curriculum that provides breadth in the field. Additional specialized courses and electives provide depth in individual program tracks.
- Balance: In this theoretical core curriculum, software and hardware are joined in theory and in practice through integrated lecture and laboratory sequences.
- Practicality: The curriculum is flexible and provides opportunities for the students to emphasize specific areas of interest through their choice of appropriate

electives.

Admission to the Program

Formal admission to the major in computer science by the department requires a cumulative grade point average (GPA) of 2.0 or better.

University Graduation Requirements

A total of at least 126 credit hours, including:

- Forty-two to forty-six credit hours of university requirements (URE)
- A minimum of eighty credit hours of major requirements (MRE)

Major Requirements

Students majoring in computer science must complete 80 credit hours of major requirements with a grade C- or better in each course. Those major requirements are divided as follows:

Core Requirements

Students must take 49 credit hours as core requirements. These are:

- MTH 104 Calculus II
- MTH 221 Linear Algebra
- MTH 341 Numerical Computing
- CMP 120 Introduction to Computer Science I
- CMP 210 Digital Systems
- CMP 213 Discrete Structures or MTH 213 Discrete Mathematics
- CMP 220 Introduction to Computer Science II
- CMP 232 Data Structures
- CMP 240 Introduction to Computer Systems
- CMP 310 Introduction to Operating Systems
- CMP 315 Computer Networks
- CMP 320 Database Systems
- CMP 334 Organization of Programming Languages
- CMP 335 Formal Languages and Computability I
- CMP 340 Analysis of Algorithms
- CMP 495 Project in Computer Science

Elective Requirements within the Major

After consultation with their academic advisors, students should take 12 credit hours as computer science elective courses from the following areas.

Computer Systems:

- CMP 330 Computer System Architecture
- CMP 410 Compiler Construction
- CMP 413 Performance Evaluation of Computer Systems

Information Processing:

- CMP 321 Computer Graphics
- CMP 324 File Processing
- CMP 421 Image Processing
- CMP 424 Artificial Intelligence
- CMP 425 Information Theory

Software Engineering/Programming Languages:

- CMP 337 Parallel Computing
- CMP 434 Programming Languages
- CMP 436 Object-oriented Analysis and Design
- CMP 437 Introduction to Symbolic Programming
- CMP 438 Programming Robots
- CMP 440 Software Engineering

Theory of Computation:

- CMP 435 Formal Languages and Computability II
- CMP 450 Hypermedia Computing

Others:

- CMP 385 Professional and Ethical Issues in Computer Science
- CMP 460 Introduction to Simulation and Modeling
- CMP 470 Introduction to Neural Network
- CMP 494 Topics in Computer Science
- CMP 496 Independent Study

Science Elective Requirement

Students must take a science elective course of 4 credit hours from the Biology, Chemistry or Physics offerings.

Free Elective Requirements

Students must take a minimum of 15 credit hours of free electives.

All the elective courses must be approved by the student's academic advisor.

Minors in Computer Science for Architecture, Business, and Engineering Students

In order to minor in computer science, students of business, engineering, and architecture and design must take 18 credit hours as follow:

Requirements for Business students: CMP 220, CMP 232 and CMP 315.

Requirements for Engineering students: CMP 120, CMP 220, CMP 320 and CMP 340.

Requirements for Architecture and Design students: CMP 120, CMP 315, CMP 385 and CMP 450.

In addition to the above requirements, students of the above majors must choose other courses from the computer science program. Approval of the chairman of the Department of Computer Science, Mathematics and Statistics is required.

Proposed Sequence of Study

Bachelor of Science in Computer Science

FIRST YEAR (34 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	CMP 120	Introduction to Computer Science I	3	CMP 101/PT	MR
	MTH 103	Calculus I	4	MTH 001/PT	URE
	PHY 101 or CHM 101	General Physics I or General Chemistry I	4		
	COM XXX	Communication I	3	EPT score 4 or COM 001	URE
	XXX	General Education Requirement	3	COM 102	URE
		Total	**17**		
Spring	CMP 220	Introduction to Computer Science II	3	CMP 120	MR
	MTH 104	Calculus II	4	MTH 103	MR
	PHY 102 or CHM 102	General Physics II or General Chemistry II	4	PHY 101 / CHM 101	URE
	ARA XXX	Arabic Language Requirement	3		URE
	COM XXX	Communication II	3	EPT score 5 or COM 101	URE
		Total	**17**		

SECOND YEAR (32 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	XXX	Science elective	4		ELC
	CMP 210	Digital Systems	3		MR
	CMP 232	Data Structures	3	CMP 120	MR
	XXX	General Education Requirement	3	COM 102	URE
	COM XXX	Communication III	3	COM 102	URE
		Total	**16**		
Spring	CMP 213	Discrete Mathematics	3	MTH 103	MR
	CMP 240	Introduction to Computer Systems	3	CMP 210	MR
	MTH 221	Linear Algebra	3	MTH 104	MR
	COM XXX	Communication IV	3	COM 102	URE
	STA 201	Intro. to Statistics for Eng. & Natural Sc.	4		URE
		Total	**16**		

THIRD YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	CMP 310	Introduction to Operating System	3	CMP 232	MR
	MTH 341	Numerical Computing	3	CMP 120, MTH 104 and consent of instructor	MR
	XXX	General Education Requirement	3	COM 102	URE
	COM 208	Public Speaking	3	COM 102	URE
	CMP XXX	Computer elective	3		ELC
		Total	**15**		
Spring	CMP 334	Organization of Programming Languages	3	CMP 232	MR
	CMP 335	Formal Languages & Computability I	3	CMP 213	MR
	CMP 320	Database Systems	3	CMP 213	MR
	CMP XXX	Computer elective	3		ELC
	XXX	General Education Requirement	3	COM 102	URE
		Total	**15**		

FOURTH YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	CMP 315	Computer Networks	3	consent of instructor	MR
	CMP 340	Analysis of Algorithms	3	CMP 232	MR
	CMP XXX	Computer elective	3		ELC
	XXX	Free elective	3		ELC
	XXX	Free elective	3		ELC
		Total	**15**		
Spring	CMP XXX	Computer elective	3		ELC
	CMP 495	Project in Computer Science	3	Senior standing and consent of instructor	MR
	XXX	Free elective	3		ELC
	XXX	Free elective	3		ELC
	XXX	Free elective	3		ELC
		Total	**15**		

Abbreviations: **URE**: University Requirement, **MR**: Major Requirement, **ELC**: Elective, **EPT**: English Placement Test

Note: XXX represents an elective course that can be taken in any discipline. If an elective course has a prefix (e.g., ARA XXX), the course must be taken from the particular discipline specified.

Economics

We live in a world in which human needs and desires create a greater demand for goods and services than can be produced with existing resources. Consequently, every society must decide which goods and services to produce, which not to produce, how to make the ones which are produced, and how to distribute the produced goods and services among the different individuals in the society. These are the fundamental economic questions. A subset of these questions addresses the issue of what role government should play in the economy, if any, as compared to private businesses.

The discipline of economics applies a logical way of thinking that can be used to analyze just about anything that involves the behavior of private businesses, individuals or government. Topics include: unemployment, inflation, the banking system, poverty, international trade, health care, taxes and government spending, pollution, the development of natural resources and the effects of law upon economic behavior.

The major in economics develops in students the ability to formulate solutions for economic problems, conduct comparative analyses for alternative economic policies, and analyze economic statistics and write attendant reports. Students who major in economics are required to take courses in international economics and econometrics (the analysis of economic data).

Students who major in economics can pursue rewarding career paths in private businesses, governmental agencies or non-profit organizations. The major in economics also provides students with a thorough foundation in economic theory, and thereby prepares interested students for graduate degree programs in economics.

Bachelor of Arts in Economics

Admission to the Major

New students who apply to the College of Arts and Sciences can declare a major in Economics when they apply for admission. A student already in the College of Arts and Sciences can declare a major in Economics if he or she has not yet declared a major in a different subject. Other students already in the College of Arts and Sciences must apply to the Department of Economics for admission to the major. Those who have achieved a cumulative GPA of 2.0 or higher will be admitted to the major. Those who have a cumulative GPA of less than 2.0 might be admitted to the Economics major on a probationary basis.

University Graduation Requirements

A total of at least 120 credit hours, including:

Major Requirements

Students who wish to major in Economics must satisfy all of the requirements specified under the three sections that follow below. One requirement is the completion of 39 credit hours (13 courses) of Economics, with a grade of C- or better in each course. This is satisfied with required courses and elective courses, as described in the first two sections. Students are also required to complete one course in mathematics, as specified in the first section below.

Required Courses (24-25 credit hours)

- ECO 201 (Principles of Microeconomics)
- ECO 202 (Principles of Macroeconomics)
- ECO 301 (Intermediate Microeconomics)
- ECO 302 (Intermediate Macroeconomics)
- ECO 305 (International Trade)
- ECO 320 (History of Economic Ideas)
- ECO 405 (Introduction to Econometrics)
- Either MTH 102 (Mathematics for Business II) or MTH 104 (Calculus II) (4 credit hours) or a roughly equivalent course, if approved by the Department of Economics

Elective Courses within Economics (18 credit hours)

Students who major in Economics must achieve a grade of C- or better in at least 18 credit (6 courses) hours of elective Economics courses (300 level or higher). The student is free to choose these courses from among any of the other Economics courses (those not already listed under required courses).

Courses in Related Fields or a Minor in Another Field

Most students who major in Economics must complete a total of 9 credit hours (3 courses) from the fields listed below, and must achieve a grade of C- or better in each course. (It is not necessary to take all three courses in the same field). Although likely courses are indicated inside the brackets which follow each field, students must obtain the approval of their advisor before selecting courses for the satisfaction of this requirement. The requirement of 9 credit hours in Related Fields is waived only for students who take a minor in any subject outside of Economics. Students who take a minor outside of Economics must satisfy the requirements set by the other department for its minor.

Related Fields

- Accounting (any course)
- Computer Science
- Data Analysis (pending approval)
- Finance (any course)
- History (any course at the 200 level or higher)
- International Studies (pending approval)
- Management (any course other than MGT 101)
- Management Information Systems (any course)
- Marketing (any course other than MKT 201)
- Mathematics (any course at the 200 level or higher)
- Political Science (any course at the 200 level or higher)
- Psychology (any course at the 200 level or higher)
- Public Administration (any course at the 200 level or higher)
- Statistics (any course other than STA 202)

Free Elective Requirements

Students must take a minimum of 15 credit hours of free electives.

Requirements for a Minor in Economics

Students who minor in Economics must take 21 credit hours of Economics (7 courses), and must achieve a grade of C- or better in each course. Part of the 21 credit hours consists of required courses. These are listed below (a total of 9 credit hours):

- ECO 201 (Principles of Microeconomics)
- ECO 202 (Principles of Macroeconomics)
- ECO 301 (Intermediate Microeconomics) or ECO 302 (Intermediate Macroeconomics)

The remaining 12 credit hours (4 courses) can be selected from among any of the other economics courses which are at the 300 level or higher.

Students who minor in Economics must take either ECO 301 (Intermediate Microeconomics) or ECO 302 (Intermediate Macroeconomics), but need not take both. Interested students can take both ECO 301 and ECO 302, and can count both of the courses toward the requirement of 21 total credit hours.

Proposed Sequence of Study

Bachelor of Arts in Economics

FIRST YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	ACC 201	Fundamentals of Financial Accounting	3	consent of instructor	*
	CHM 103	Chemistry for Everyday Life	3		URE
	ECO 201	Principles of Microeconomics	3		MR
	COM 101	Academic Writing	3	EPT Score 4 or COM 001	URE
	MTH 101	Mathematics for Business I	3		URE
		Total	**15**		
Spring	ACC 202	Fundamentals of Managerial Accounting	3		*
	COM 102	Writing and Reading Across the Curriculum	3	EPT Score 5 or COM 101	URE
	ECO 202	Principles of Macroeconomics	3		MR
	ECO 301	Intermediate Microeconomics	3	ECO 201	MR
	MTH 102	Mathematics for Business II	3	MTH 101	MR
		Total	**15**		

** Related Field Requirement. Waived if student is taking a minor in any other discipline.*

SECOND YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	ARA 101	Readings in Arabic Heritage I	3		URE
	COM 225	Global Business Communication	3	COM 203 or COM 204	URE
	CSC 201	Western Cultural Studies	3	COM 102	URE
	ECO 302	Intermediate Macroeconomics	3	ECO 201, ECO 202	MR
	ECO XXX	Economics elective	3		MR
		Total	**15**		
Spring	PHY 100	Conceptual Physics	3		UR
	COM 208	Public Speaking	3	COM 102	UR
	ECO 305	International Trade	3	ECO 201, ECO 202	MR
	ECO 320	History of Economic Ideas	3	ECO 201, ECO 202	MR
	HIS 204	Modern Arab History	3	COM 102	URE
		Total	**15**		

THIRD YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	STA 202	Introduction to Statistics for Social Sciences	4		URE
	ECO XXX	Economics elective	3		MR
	POL 202	International Relations	3	COM 102	URE
	XXX	Free elective	3		ELC
	XXX	Free elective	3		ELC
		Total	**16**		
Spring	ECO 405	Introduction to Econometrics	3	ECO 301, ECO 302, MTH 102	MR
	ECO XXX	Economics elective	3	See catalog	MR
	POL 204	International Political Economy	3	COM 102	URE
	XXX	Free elective	3		ELC
	XXX	Free elective	3		ELC
		Total	**15**		

FOURTH YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	ECO XXX	Economics elective	3		MR
	ECO XXX	Economics elective	3		MR
	XXX	Free elective	3		ELC
	XXX	Free elective	3		ELC
	XXX	Free elective	3		ELC
		Total	**15**		
Spring	ECO XXX	Economics elective	3		MR
	XXX	Free elective	3		ELC
	XXX	Free elective	3		ELC
	XXX	Free elective	3		ELC
	XXX	Free elective	3		ELC
		Total	**15**		

Abbreviations: **URE**: University Requirement; **ELC**: Elective; **MR**: Major Requirement; **EPT**: English Placement Test

English Department

Mission Statement

The mission of the Department of English at the American University of Sharjah is to cultivate student mastery and creative use of English, to develop an understanding of its structure and functions, to foster an appreciation for its literary tradition and to equip future graduates with the knowledge and skills required for communication. This is enhanced by the provision of highly specialized training in English/Arabic translation and interpreting. Our goal is to become the premier program in the area, in the Gulf and in the Middle East in preparing students to become active, participatory members of the English-speaking global society.

Bachelor of Arts in English Language and Literature

Program Description

The four-year program in English language and literature provides a comprehensive knowledge of the structure and use of English. Furthermore, it enables the student to understand English within its historical and cultural context, without which one cannot fully understand the literature or the society of the present English speaking world. Above all, the program teaches students the research tools, critical processes and analytic skills necessary for functioning effectively in today's English based information environment

The courses required for the major are arranged in a sequence of increasing depth and complexity. The forty eight (48) specialized credit hours required for the major in the English language and literature program consist of a balanced foundation in both language and literature studies (18 credits in each), 12 credits in core departmental courses and 18 credits in either literature or language.

The language component of the major helps students understand the history and structure of English and the interrelationship between society and language. This is particularly helpful to non-native speakers of English, who can compare English formations with those in their native language and gain insights into the reasons for these differences.

The language component includes courses which address underlying fundamental issues in language and linguistics studies, such as Introduction to Language Study, Development of the English Language, Phonetics, Phonology, and Morphology, Structure and Function of English, Semantics and Pragmatics, Discourse Analysis, Second Language Acquisition, Language in Society and Psycholinguistics. The language program is thus designed not only to provide proficiency in the structure of English, but also to lead the student to explore the way in which language shapes thought and affects society.

In the literature concentration, the texts studied are written primarily in English, with the major focus on British and American literature. However, because literature does not exist in isolation, the program also includes translations of major writers who have influenced literature in English. Through this program, students come to understand the change of ideas from one time period to another, and the exchange of ideas from one society to another.

Students begin their study of literature by learning the literary history of the United States or Great Britain, the styles and elements of a particular genre, and the basic elements of critical and creative writing. They learn to use the English language as the medium for expressing their own thoughts and feelings, and they come to understand its richness and nuances. They also explore the philosophical and critical theories that underlie both the understanding of literature and the writing of literature itself.

Objectives

An English language concentration prepares its graduates for further studies in linguistics, and for careers in communication, a fast growing sector in today's societies. Also, by receiving a solid grounding in the

English language, graduates are well prepared to become teachers of English as a foreign language. All these outlets are current growth areas in the region and will be increasingly useful as the educational and communications systems in the UAE become more Emiratized.

A literature concentration prepares the student for professions requiring the highest levels of English language skills, research skills, and critical and analytical abilities. Moreover, it prepares students for any position requiring interaction with educated native speakers of English. Some of the specific professions for which the English literature major is qualified are in media, publishing, editing, research, teaching and diplomacy. A major in English literature is also an excellent preparation for graduate work in an English speaking country.

Admission to the Program

Formal admission to the English language and literature program by the Department of English requires a cumulative GPA of 2.0 or higher.

University Graduation Requirements

A total of at least 120 credit hours, including:

- University requirements (URE): forty-two to forty-six credit hours
- Major requirements (MRE): forty-eight credit hours
- Advised electives: twenty-one credit hours
- Free electives: nine credit hours

Requirements for the major in English language and literature

Both concentrations within the English language and literature major require students to take 48 credit hours of coursework. All students in this major will take thirty common credit hours as follows:

- Twelve credit hours of departmental core courses
- Nine credit hours of courses in language
- Nine credit hours of courses in literature

In addition, eighteen credit hours of concentration must be taken in language or literature.

Departmental core requirements (12 credit hours)

- ENG 105 (Contemporary World Literature)
- ENG 108 (Introduction to Genres)
- COM 123 (Introduction to Language Study)
- ENG 420 (Seminar: Bridging the Disciplines)
- COM 220 (Intercultural Communication)

Common required courses language and literature (18 credit hours)

- ENG 126 (Development of the English Language)
- ENG 201or ENG 203 (Creative Writing or Introduction to Literary Theory)
- ENG 209 (Survey of English Literature I)
- ENG 219 (Survey of American Literature I)
- ENG 224 (Structure and Function of English)
- ENG 234 (Language in Society)

Language concentration (18 credit hours)

- ENG 222 (Phonology and Morphology)
- ENG 334 (Semantics and Pragmatics)
- ENG 336 (Discourse Analysis)
- ENG 338 or ENG 400 (Psycholinguistics or Second Language Acquisition)
- ENG 406 (Survey of Topics in Linguistics and Communication)
- ENG 495 (Seminar in English Language)

Literature concentration (18 credit hours)

- ENG 213 or ENG 205 (Survey of English Literature II or Modern Drama and Beyond)
- ENG 315 (East Meets West: Colonial and Post Colonial Encounters)
- ENG 303 (Shakespeare and his Contemporaries)
- ENG 309 or ENG 311 or ENG 313 (The American Novel or Early English Novel or Modern British Novel)
- ENG 411 or ENG 413 or ENG 415 (Seminar in English Literature or Seminar in American Literature or Seminar in Post Colonial Literature)
- ENG 490 (Senior Research Project)

Minor in Literature (21 credits)

- ENG 105 or ENG 108 (Contemporary World Literature or Introduction to Genres)
- ENG 201 or ENG 203 (Creative Writing or Introduction to Literary Theory)
- ENG 209 (Survey of English Literature I)
- ENG 219 (Survey of American Literature I)
- ENG 213 or ENG 205 (Survey of English Literature II or Modern Drama and Beyond)
- ENG 303 or ENG 315 (Shakespeare and his Contemporaries or East Meets West: Colonial and Post-Colonial Encounters)

- ENG 309 or ENG 311 or ENG 313 (The American Novel or Early English Novel or Modern British Novel)

Minor in Language (21 credits)

- ENG 123 (Introduction to Language Study)
- ENG 126 (Development of the English Language)
- ENG 222 or ENG 336 (Phonology and Morphology or Discourse Analysis)
- ENG 224 (Structure and Function of English)
- ENG 234 or ENG 334 (Language in Society or Semantics and Pragmatics)
- ENG 400 or ENG 330 (Second Language Acquisition or Psycholinguistics)
- ENG 402 (Applied Linguistics)

Minor in ESL/TEFL (21 credits)

- ENG 123 or ENG 224 (Introduction to Language Study or Structure and Function of English)
- ENG 234 or ENG 336 (Language in Society or Discourse Analysis)
- ENG 400 (Second Language Acquisition)
- ENG 404 or ENG 406 (Using Literary Texts in TEFL Classrooms or Survey of Topics in Linguistics and Communication)
- ENG 408 (Reading and Writing in ESL/TEFL)
- ENG 410 (Language Teaching Methodology)
- ENG 412 (Curriculum Development)

Proposed Sequence of Study

Bachelor of Arts in English Language and Literature

FIRST YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	COM 101	Academic Writing	3	EPT score 4 or COM 001	URE
	MTH 100	Fundamentals of Logic and Geometry	3		URE
	XXX	Advised elective	3		ELC
	XXX	Science Requirement	3		URE
	XXX	Arabic Requirement	3		URE
		Total	**15**		
Spring	COM 102	Writing and Reading Across the Curriculum	3	EPT score 5 or COM 101	URE
	XXX	Computer Requirement	3		URE
	XXX	Humanities	3	COM 102	URE
	XXX	Science Requirement	3		URE
	STA 202	Introduction to Statistics for Social Sciences	3		URE
		Total	**15**		

SECOND YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	COM 208 or COM 209	Public Speaking or Dramatic Expression	3	COM 102	URE
	ENG 123	Introduction to Language Study	3	Any COM 200 level course	MR
	XXX	Social Science Requirement	3	COM 102	URE
	XXX	Humanities Requirement	3	COM 102	URE
	XXX	Advised elective	3		ELC
		Total	**15**		
Spring	COM 203 or COM 204	Genre Analysis or Advanced Academic English	3	COM 102	URE
	ENG 105 or 108	Contemporary World Literature or Introduction to Genre	3	COM 203 or COM 204	MR
	COM 220	Intercultural Communication	3	Any COM 200 level course	MR
	XXX	Social Science Requirement	3	COM 102	URE
	XXX	Advised elective	3		ELC
		Total	**15**		

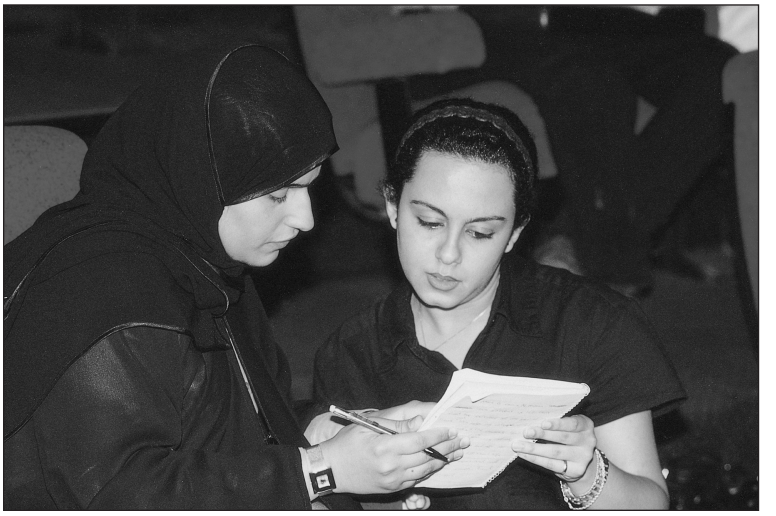
THIRD YEAR (30 credit hours) - **Literature Concentration**					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	ENG 201 or ENG 203	Creative Writing or Introduction to Literary Theory	3	COM 203 or 204 ENG 105 or 107	MR
	ENG 224	Structure & Function of Language	3	Any COM 200 level course	MR
	ENG 209	Survey of English Literature	3	ENG 105 or 107 or equivalent	MR
	ENG 126	Development of the English Language	3	Any COM 200 level course	MR
	XXX	elective	3		ELC
		Total	**15**		
Spring	ENG 234	Language in Society	3	ENG 123	MR
	ENG 219	Survey of American Literature	3	ENG 105 or 107 or equivalent	MR
	XXX	elective	3		ELC
	ENG 213 or ENG 205	Survey of English Literature or Modern Drama and Beyond	3	ENG 105 or 107	MR
	XXX	elective	3		ELC
		Total	**15**		

THIRD YEAR (30 credit hours) - **Language Concentration**					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	ENG 201	Creative Writing		COM 203 or 204	
	or ENG 203	or Introduction to Literary Theory	3	ENG 105 or 107	MR
	ENG 224	Structure & Function of Language	3	Any COM 200 level course	MR
	ENG 209	Survey of English Literature	3	ENG 105 or 107 or equivalent	MR
	ENG 126	Development of the English Language	3	Any COM 200 level course	MR
	XXX	elective	3		ELC
		Total	**15**		
Spring	ENG 234	Language in Society	3	ENG 123	MR
	ENG 219	Survey of American Literature	3	ENG 105 or 107	MR
	ENG 222	Phonology and Morphology	3	ENG 123	MR
	XXX	elective	3		ELC
	XXX	elective	3		ELC
	Total		**15**		

FOURTH YEAR (30 credit hours) - **Literature Concentration**					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	ENG 303	Shakespeare and his Contemporaries	3	ENG 209	MR
	ENG 309	The American Novel			
	or ENG 311	or Early English Novel			
	or ENG 313	or Modern British Novel	3	ENG 219 or 209	MR
	ENG 315	East Meets West: Colonial			
		and Post Colonial Literature	3	ENG 209 or 213	MR
	XXX	elective	3		ELC
	XXX	elective	3		ELC
		Total	**15**		
Spring	ENG 411			ENG 311 or 313	
	or ENG 413			ENG 309	
	or ENG 415	Seminar in English Literature	3	ENG 315	MR
	ENG 490	Senior Research Project		ENG 411 or ENG 413	
			3	or ENG 415	MR
	ENG 420	Seminar: Bridging the Disciplines	3	consent of instructor	MR
	XXX	elective	3		ELC
	XXX	elective	3		ELC
		Total	**15**		

FOURTH YEAR (30 credit hours) - **Language Concentration**					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	ENG 336	Discourse Analysis	3	ENG 224	MR
	ENG 400 or ENG 338	Second Language Acquisition or Psycholinguistics	3	ENG 224 or consent of inst.	MR
	ENG 406	Survey of Topics in Linguistics and Communication	3	ENG 334	MR
	XXX	elective	3		ELC
	XXX	elective	3		ELC
		Total	**15**		
Spring	ENG 334	Semantics and Pragmatics	3	ENG 224	MR
	ENG 495	Seminar in English Language	3	consent of instructor and GPA of at least 3.0 in the major	MR
	ENG 420	Seminar: Bridging the Disciplines	3	consent of instructor	MR
	XXX	elective	3		ELC
	XXX	elective	3		ELC
		Total	**15**		

Abbreviation: **URE**: University Requirement, **ELC**: Elective, **MR**: Major Requirement, **EPT**: English Placement Test



Bachelor of Arts in Communication

The Department of English at AUS offers a B.A. degree in Communication. This degree prepares students for an extensive variety of careers in which written and oral communication play critical roles. A degree in Communication is both practical and career-focused in that it provides students with a thorough knowledge of the English language and the writing and speaking skills necessary for a wide range of careers, such as advertising copywriters, corporate trainers, media relations specialists, teachers, writers, journalists, translators, speechwriters or editors. Communication majors will be able to select from two distinct tracks, each of which emphasizes highly developed English writing and speaking skills, along with the technology skills so essential in today's professional environment. The two tracks within the Communication major are:

1. Advertising and Public Relations

   The Advertising and Public Relations track includes specially designed courses in communication complemented by courses in marketing. Graduates of this program can pursue careers in ad copywriting, ad design, writing, editing, publishing and professional sales in contexts such as corporations, banks and media firms as well as in service firms such as computer software companies.

2. Mass Communications

   The Mass Communications track includes specially designed courses in communication complemented by courses in multimedia design. Graduates of this program can pursue writing and publishing careers in magazines, radio, television, films, newspapers and Internet-based media as well as careers in media relations and management.

Admission to the Program

Formal admission to the Communication program by the Department of English requires a cumulative GPA of 2.0 or higher.

University Graduation Requirements

A total of at least 120 credit hours, including:

- University requirements (URE): forty-two to forty-six credit hours
- Major requirements (MRE): forty-nine credit hours
- Advised electives: twenty-one credit hours
- Free electives: nine credit hours

Requirements for the Communication Major in Advertising and Public Relations

Forty-nine credit hours of study (16 courses), including:

- Twelve credit hours of departmental core courses
- Twelve credit hours of communication courses
- Six credit hours of related courses in marketing
- Four credit hours of multimedia design courses
- Fifteen credit hours of advanced advertising and public relations courses

Requirements for the Communication Major in Mass Communications

Forty nine credit hours of study (16 courses), including:

- Twelve credit hours of departmental core courses
- Twelve credit hours of communication courses
- Seven credit hours of design courses
- Three credit hours of marketing courses
- Fifteen credit hours of advanced mass communications courses

Departmental Core Requirements (12 credit hours):

- ENG 105 or ENG 108 (Contemporary World Literature or Introduction to Genres)
- ENG 123 (Introduction to Language Study)

- ENG 420 (Seminar: Bridging the Disciplines)
- COM 220 (Intercultural Communication)

Major Required Common Courses (19 credits)

- COM 225 (Global Business Communication) (replaces COM 206)
- COM 231 (Writing for Visual Media) (replaces COM 210)
- COM 235 (Communication in Advertising) (replaces COM 205)
- COM 307 (Editing)
- DES 100 (Digital Media in Design) (4-hour course)
- MKT 201 (Fundamentals of Marketing)

Concentration in the Advertising/Public Relations track (18 credits)

- COM 237 (Public Relations: Media and Case Studies)
- MKT 301 (Consumer Behavior)
- COM 403 (Advanced Advertising Copywriting)
- COM 407 (Issues in Advertising and Public Relations)
- COM 409 (Advertising Campaign Research and Design)
- COM 413 (Advertising Campaign Management)

Concentration in the Mass Communications track (18 credits)

- MUM 2XX (Desktop and Web-based Publishing)
- COM 303 (Feature Article Writing)
- COM 401 (Documentary and Script Writing)
- COM 405 (Technology and Communication)
- COM 411 (Writing and Producing Documentaries)
- COM 415 (Media Project Management)

Minor in Communication (21 credit hours)

- COM 220 (Intercultural Communication)
- COM 225 (Global Business Communication (replaces COM 206)
- COM 231 (Writing for Visual Media) (replaces COM 210)
- COM 235 (Communication in Advertising) (replaces COM 205)
- COM 237 (Public Relations: Media and Case Studies)
- COM 307 (Editing)
- COM 303 or COM 401 (Feature Article Writing or Documentary and Script Writing)

Proposed Sequence of Study

Bachelor of Arts in Communication

FIRST YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	COM 101	Academic Writing	3	EPT score 4 or COM 001	URE
	MTH 100	Fundamentals of Logic and Geometry	3		URE
	XXX	Advised elective	3		ELC
	XXX	Science Requirement	3		URE
	XXX	Arabic Requirement	3	COM 102	URE
		Total	**15**		
Spring	COM 102	Writing and Reading	3	EPT score 5 or COM 101	URE
	XXX	Computer Requirement	3		URE
	XXX	Humanities Requirement	3	COM 102	URE
	XXX	Science Requirement	3		URE
	STA 202	Introduction to Statistics for Social Sciences	3		URE
		Total	**15**		

SECOND YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	COM 208 or COM 209	Public Speaking or Dramatic Expression	3	COM 102	URE
	ENG 123	Introduction to Language Study	3	Any COM 200 level course	MR
	XXX	Social Science Requirement	3	COM 102	URE
	XXX	Humanities Requirement	3	COM 102	URE
	XXX	Advised elective	3		ELC
		Total	**15**		
Spring	COM 203 or COM 204	Genre Analysis or Advanced Academic English	3	COM 102	URE
	ENG 105 or ENG 108	Contemporary World Literature or Introduction to Genre	3	COM 203 or 204	MR
	COM 220	Intercultural Communication	3	Any COM 200 level course	MR
	XXX	Social Science Requirement	3	COM 102	UR
	XXX	Advised elective	3		ELC
		Total	**15**		

THIRD YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	MKT 201	Fundamentals of Marketing	3		MR
	COM 235	Communication in Advertising	3	COM 102	MR
	COM 225	Global Business Communication	3	COM 203 or COM 204	MR
	XXX	elective	3		ELC
	XXX	elective	3		ELC
		Total	**15**		
Spring	COM 307	Editing	3	COM 231 or COM 235	MR
	COM 231	Writing for Visual Media	3	COM 102	MR
	COM 237 or MUM 2XX	Public Relations: Media and Case Studies or Webpage Design	3	COM 231 or COM 235	MR
	XXX	elective	3		ELC
	XXX	elective	3		ELC
		Total	**15**		

FOURTH YEAR (30 credit hours) - **Advertising and Public Relations Concentration**					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	MKT 301	Consumer Behavior	3	MKT 201	MR
	COM 403	Advanced Advertising Copywriting	3	COM 235 and COM 307	MR
	COM 407	Issues in Advertising and Public Relations	3	COM 235 and COM 307	MR
	XXX	elective	3		ELC
	XXX	elective	3		ELC
		Total	**15**		
Spring	ENG 420	Seminar: Bridging the Disciplines	3	consent of instructor	MR
	COM 409	Advertising Campaign Research and Design	3	COM 403	MR
	COM 413	Advertising Campaign Management	3	COM 409	MR
	XXX	elective	3		ELC
	XXX	elective	3		ELC
		Total	**15**		

FOURTH YEAR (30 credit hours) - **Mass Communications Concentration**					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	COM 303	Feature Article Writing	3	COM 231 or COM 235	MR
	COM 401	Documentary and Script Writing	3	COM 307	MR
	COM 405	Technology and Communication	3	COM 231 and COM 307	MR
	XXX	elective	3		ELC
	XXX	elective	3		ELC
		Total	**15**		
Spring	ENG 420	Seminar: Bridging the Disciplines	3	consent of instructor	MR
	COM 411	Writing and Producing Documentaries	3	COM 307	MR
	COM 415	Media Project Management	3	COM 401	MR
	XXX	elective	3		ELC
	XXX	elective	3		ELC
		Total	**15**		

Abbreviation: **URE**: University Requirement, **ELC**: Elective, **MR**: Major Requirement, **EPT**: English Placement Test

Bachelor of Arts in English/Arabic Translation and Interpreting

Program Description

To qualify for the B.A. in English/Arabic Translation and Interpreting program, students must demonstrate fluency in English (and in Arabic in the case of non-native speaker applicants). In tandem with a good grounding offered by the English Department in communicative skills, linguistic analysis and literary appreciation, the translation track for its part focuses on basic written translation skills in a variety of settings (national government, private sector and international organizations) and across a diverse range of text types (instructional, expository, argumentative) and fields (commercial and economic, scientific and technical, political and legal). Throughout, trainees are provided with relevant theoretical input which establishes a framework for the study of translation and offers the tools to identify, analyze and resolve translation problems. The business of translation (freelance, in-house, etc.) features prominently and the role of modern media translation is emphasized as a vocational domain. Interpreting is also introduced as another track pursued in the degree course. Practice in interpreting emphasizes the development of professional skills in liaison interpreting (in the community, the courts, etc). Readings in translation and interpreting research form an important part of the overall training. To fulfill the requirements of the course, students undertake large-scale translation or interpreting projects through in-depth research on a subject related to the profession.

Admission to the Program

Formal admission to the Translation and Interpreting program by the Department of English requires demonstrated language skills in Arabic and English and a cumulative GPA of 2.0 or higher.

University Graduation Requirements

A total of at least 120 credit hours, including:

- University Requirements (URE): forty-two to forty-six credit hours
- Major Requirements (MRE): forty-eight credit hours
- Advised electives: twenty-one credit hours
- Free electives: nine credit hours

Department Core Requirements (12 credits)

- ENG 123 (Introduction to Language Study)
- ENG 105 or ENG 108 (Contemporary World Literature or Introduction to Genre)
- COM 220 (Intercultural Communication)
- ENG 420 (Seminar: Bridging the Disciplines)

Major Requirements (30 credits)

- TRA 101 (Introduction to Translation)
- TRA 102 (Practical Issues in Translation)
- TRA 201 (Theoretical and Practical Issues in Translation)
- TRA 203 (Modern Media Translation and Interpreting)
- TRA 302 (Contrastive Analysis)
- TRA 303 (Interpreting I: Focus on the Community)
- TRA 305 (Interpreting II: Focus on the Profession)
- TRA 401 (Translation Evaluation and History)
- TRA 494 (Special Topics in Translation)
- TRA 498 (Applied Research)

Related Requirements (6 credits)

- ARA 103 (Composition for Native Speakers of Arabic) or
- ARA 308 (Introduction to Stylistics and Metrics) or
- ARA 407 (Advanced Studies in Arabic Grammar/Rhetoric) and
- ENG 236 (Semantics and Pragmatics) or
- ENG 224 (Structure and Function of English) or
- ENG 301 (Modern Drama) or
- ENG 309 (American Novel) or
- COM 303 (Feature Article Writing)

Minor in Translation (21 credits)

- TRA 101 (Introduction to Translation)
- TRA 102 (Practical Issues in Translation)
- TRA 201 (Theoretical and Practical Issues in Translation)
- TRA 203 (Modern Media Translation and Interpreting)
- TRA 302 (Contrastive Analysis)
- TRA 303 (Interpreting II: Focus on the Profession)
- TRA 401 (Translation Evaluation and History)

Proposed Sequence of Study

Bachelor of Arts in English/Arabic Translation and Interpreting

FIRST YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	COM 101	Academic Writing	3	EPT score 4 or COM 001	URE
	MATH 100	Fundamentals of Logic and Geometry	3		URE
	XXX	Advised elective	3		ELC
	XXX	Science Requirement	3		URE
	XXX	Arabic Requirement	3	COM 102	URE
		Total	**15**		
Spring	COM 102	Writing and Reading Across the Curriculum	3	EPT score 5 or COM 101	URE
	XXX	Computer Requirement	3		URE
	XXX	Humanities Requirement	3	COM 102	URE
	XXX	Science Requirement	3	COM 102	URE
	STA 202	Introduction to Statistics for Social Sciences	3		URE
		Total	**15**		

SECOND YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	COM 208 or COM 209	Public Speaking or Dramatic Expression	3	Com 102N	URE
	ENG 123	Introduction to Language Study	3	Any COM 200 level course	MR
	XXX	Social Science Requirement	3	COM 102	URE
	XXX	Humanities Requirement	3	COM 102	URE
	TRA 101	Introduction to Translation	3		MR
		Total	**15**		
Spring	COM 204	Advanced Academic English	3	COM 102	URE
	ENG 105	Contemporary World Literature	3	COM 203/204	MR
	COM 220	Intercultural Communication	3	Any COM 200 level course	MR
	XXX	Social Science Requirement	3	COM 102	URE
	TRA 102	Practical Issues in Translation	3	TRA 101	MR
		Total	**15**		

THIRD YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	TRA 201	Theoretical and Practical Issues in Translation	3	TRA 102	MR
	TRA 203	Modern Media Translation and Interpreting	3	TRA 101	MR
	ENG 224	Structure & Function of English	3	Any COM 200 level course	MR
	XXX	Social Science Requirement	3	COM 102	URE
	XXX	elective	3		ELC
		Total	**15**		
Spring	TRA 303	Interpreting I	3		
	ENG 205	Modern Drama and Beyond	3	ENG 105 or 107	MR
	TRA 302	Contrastive Analysis	3	TRA 201	ELC
	XXX	elective	3		ELC
	XXX	elective	3		ELC
		Total	**15**		

FOURTH YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	TRA 401	Translation Evaluation and History	3	TRA 302	MR
	TRA 402	Special Topics in Translation	3	TRA 401	MR
	XXX	elective	3		ELC
	XXX	elective	3		ELC
	XXX	elective	3		ELC
		Total	**15**		
Spring	TRA 305	Interpreting II	3	TRA 401	MR
	TRA 498	Applied Research	3	TRA 402	MR
	ENG 420	Seminar: Bridging the Disciplines	3	consent of instructor	MR
	XXX	elective	3		ELC
	XXX	elective	3		ELC
		Total	**15**		

Abbreviation: **URE**: University Requirement, **ELC**: Elective, **MR**: Major Requirement, **EPT**: English Placement Test

The English Communications Competency Program

The English Communications Competency Program is designed to help all matriculated students improve their English language proficiency, written and oral, in order to succeed in their university course work. The program consists of a sequence of three graded academic English courses: COM 001, 101, 102; seven specialized courses: COM 203, 204, 207, 211, 225, 231 and 235; and two oral communication courses: COM 208 and 209 (see course descriptions at the end of the catalog).

All new matriculated students, regardless of their scores on the TOEFL or any other acceptable standardized test, must take the English Placement Test (EPT), at the beginning of their first semester at AUS, to determine their placement in the sequence of English Communication courses.

All students are required to complete four courses in the Department of English (COM 101, COM 102 and two other COM courses) with a grade of C- or better in order to satisfy their English language competency requirement. Students may be exempted from one or two courses based on their EPT score or transferred English/Communication credits. The English language competency requirement should be completed by the end of the sophomore year.

Environmental Sciences

Mission Statement

The mission of this program is to provide graduates with qualifications for meaningful employment in the ever-expanding environmental field. It utilizes a holistic approach to environmental science so that students are prepared to deal with a wide range of environmental concerns as they receive their on-the-job training and perform tasks specific to their professions. The overall organization of this program reflects this philosophy with a broad core curriculum, a concentration area and the opportunity to conduct a senior research project providing advanced, hands-on experience. Students may choose to specialize in any one of three concentrations: physics, chemistry or biology.

Recent events and current issues have raised major concerns related to the preservation of the environment and life on planet Earth. Local governments and private industry have begun to recognize the importance of conservation, recycling and environmental awareness. The Environmental Science major at the American University of Sharjah will give 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 science.

Bachelor of Science in Environmental Science

Career Opportunities

Environmental scientists can work in four general fields:

- 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 deals 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 occurs both in the public and private sectors.
- Environmental Research, which includes developing analytical methods for detecting environmental pollutants and improving prediction of environmental and geophysical changes. This field is available in publicly and academically 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 employ environmental scientists in the area 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. Examples of manufacturers (particularly those involved in the production of chemicals, plastics, paints, pesticides, etc.) concerns 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 describe accurately 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, recycling and waste management.

Currently, most work in the environmental sector is responsive to existing or anticipated problems. For example, 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 that are largely public relations exercises. People with an entrepreneurial inclination to take (and sell) a proactive approach to environmental stewardship and sustainable development have the opportunity to innovate current practices. There is money to be earned through inventions and ideas that could fundamentally change the way business, society and technology function and through the provision of realistic alternatives to environmentally hazardous practices.

University Graduation Requirements

The university graduation requirements for a B.S. in Environmental Science consist of a total of 126-128 credit hours divided as follows: 49 credits in university requirements, 23 credits in core requirements, 26-30 credits in required courses, 9-15 credits in advised electives and 15 credits in free electives. Students can use the free elective credits to obtain additional knowledge and skills in a minor field. This would broaden their knowledge and expand their employment opportunities.

University Requirements (49 credits)

- ARA XXX Arabic Language
- CHM 101 General Chemistry I
- PHY 101 General Physics I
- COM 208 Public Speaking
- COM XXX English Language (four courses)
- H & SS XXX Humanities and Social Sciences (four courses)
- MTH 103 Calculus I
- STA 201 Introduction to Statistics for Engineering and Natural Sciences
- CMP XXX A programming language

Core Requirements (23 credits)

- BIO 101 General Biology I
- Two Science courses out of BIO 102, CHM 102 and PHY 102
- MTH 104 Calculus II
- CHM 251 Environmental Chemistry
- PHY 202 Environmental Physics I

Biology Concentration

Required Courses (30 credits)

- CHM 215 Organic Chemistry I
- CHM 215L Organic Chemistry Lab I
- BIO 102 General Biology II
- BIO 251 Environmental Biology
- BIO 331 General Microbiology
- BIO 361 Biodiversity
- BIO 421 Marine Biology
- Four advanced Biology courses

Advised Electives (9 credits)

A course list to be announced.

Proposed Sequence of Study

Bachelor of Science in Environmental Science (Biology Concentration)

FIRST YEAR (31 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	MTH 103	Calculus I	4	MTH 001	URE
	BIO 101	General Biology I	4		URE
	COM XXX	Communication I	3	EPT score 4 or COM 001	URE
	CHM 101	General Chemistry I	4	CHM 001	URE
		Total	**15**		
Spring	BIO 102	General Biology II	4	BIO 101	CRE
	PHY 101	General Physics I	4	PHY 001 or Placement MTH 103	CRE
	COM XXX	Communication II	3	EPT score 5 or COM 101	URE
	CMP 101	Computer Literacy and Information Access	1		URE
	CHM 102	General Chemistry II	4	CHM 101	CRE
		Total	**16**		

SECOND YEAR (33 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	MTH 104	Calculus II	4	MTH 103	CRE
	CHM 215	Organic Chemistry I	3	CHM 102	MR
	CHM 251	Environmental Chemistry	3	CHM 102	CRE
	CMP XXX	A Programming Language	3		URE
	COM XXX	Communication III	3	COM 102	URE
		Total	**16**		
Spring	BIO 251	Environmental Biology	3		MR
	PHY 102	General Physics II	4	PHY 101	MR
	CHM 215L	Organic Chemistry Lab I	1	CHM 215	MR
	PHY 202	Environnemental Physics	3	PHY 102	CRE
	COM XXX	Communication IV	3	COM 102	URE
	ARA XXX	Arabic Language Requirement	3	COM 102	URE
		Total	**17**		

THIRD YEAR (32 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	STA 201	Intro. to Statistics for Eng. & Natural Sc.	4		URE
	BIO XXX	Biology elective	3		MR
	COM 208 or COM 209	Public Speaking/Dramatic Expression	3	COM 102	URE
	BIO 331	General Microbiology	3	BIO 102	MR
	XXX	Advised elective	3		ELC
		Total	**16**		
Spring	BIO XXX	Biology elective	1		MR
	BIO 361	Biodiversity	3	BIO 251	MR
	CHM 241	Analytical Chemistry	3	CHM 102	MR
	XXX	Free elective	3		ELC
	XXX	General Education Requirement	3	COM 102	URE
	XXX	General Education Requirement	3	COM 102	URE
		Total	**16**		

FOURTH YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	XXX	Advised elective	3		ELC
	BIO XXX	Biology elective	3		MR
	SOC XXX or ECO XXX	General Education Requirement	3	COM 102	URE
	BIO 421	Marine Biology	3	BIO 251	MR
	XXX	Free elective	3		ELC
		Total	**15**		
Spring	BIO XXX	Biology elective	3		ELC
	XXX	Advised elective	3		ELC
	XXX	Free elective	3		ELC
	XXX	Free elective	3		ELC
	XXX	General Education Requirement	3	COM 102	URE
		Total	**15**		

Abbreviation: **URE**: University Requirement, **ELC**: Elective, **MR**: Major Requirement, **EPT**: English Placement Test

Chemistry Concentration

Required Courses (30 credits)

- CHM 215 Organic Chemistry I
- CHM 215L Organic Chemistry Lab I
- CHM 216 Organic Chemistry II
- CHM 216L Organic Chemistry Lab II
- CHM 222 Inorganic Chemistry I
- CHM 231 Physical Chemistry I
- CHM 241 Analytical Chemistry
- CHM 351 Environmental Monitoring and Analysis Techniques
- CHM 391 Information Sources
- CHM 445 Chemical Instrumentation
- CHM 451 Waste Treatment
- CHM 452 Soil and Water Chemistry

Advised Electives (at least 9 credits)

To be chosen from the following list:

- CHM 225 Inorganic Chemistry Lab
- CHM 331 Physical Chemistry II
- CHM 335 Physical Chemistry Lab
- CHM 341 Aquatic Chemistry
- CHE 442 Corrosion
- CHM 490 Project

Proposed Sequence of Study

Bachelor of Science in Environmental Science (Chemistry Concentration)

FIRST YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	MTH 103	Calculus I	4	MTH 001	URE
	PHY 101	General Physics I	4	PHY 001 or Placement MTH 103	URE
	COM XXX	Communication I	3	EPT score 4 or COM 001	URE
	CHM 101	General Chemistry I	4	CHM 001	URE
		Total	**15**		
Spring	BIO 101	General Biology I	4		CRE
	PHY 102	General Physics II	4	PHY 101	CRE
	COM XXX	Communication II	3	EPT score 5 or COM 101	URE
	CHM 102	General Chemistry II	4	CHM 101	CRE
		Total	**15**		

SECOND YEAR (33 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	MTH 104	Calculus II	4	MTH 103	CRE
	CHM 215	Organic Chemistry I	3	CHM 102	MR
	CHM 251	Environmental Chemistry	4	CHM 102	CRE
	CMP XXX	A Programming Language	3		URE
	COM XXX	Communication III	3	COM 102	URE
		Total	**17**		
Spring	CHM 241	Analytical Chemistry	3	CHM 102	MR
	CHM 216	Organic Chemistry II	3	CHM 215	MR
	CHM 215L	Organic Chemistry Lab I	1	CHM 215	MR
	PHY 202	Environmental Physics	3	PHY 102	CRE
	COM XXX	Communication IV	3	COM 102	URE
	ARA XXX	Arabic Language Requirement	3	COM 102	URE
		Total	**16**		

THIRD YEAR (33 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	STA 201	Intro. to Statistics for Eng. & Natural Sc.	4		URE
	CHM 231	Physical Chemistry I	3	CHM 102, MTH 104	MR
	COM 208 or COM 209	Public Speaking or Dramatic Expression	3	COM 102	URE
	CHM 222	Inorganic Chemistry I	3	CHM 102	MR
	CHM 216L	Organic Chemistry Lab II	1	CHM 215L, CHM 216	MR
	XXX	Advised elective	3		ELC
		Total	**17**		
Spring	CHM 391	Chemical Information Sources	1	CHM 102	MR
	CHM 351	Environmental Monitoring and Analysis Techniques	3	CHM 251	MR
	XXX	Free elective	3		ELC
	XXX	Free elective	3		ELC
	XXX	General Education Requirement	3	COM 102	URE
	XXX	General Education Requirement	3	COM 102	URE
		Total	**16**		

FOURTH YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	XXX	Advised elective	3		ELC
	CHM 451	Waste Treatment	3	CHM 251	MR
	CHM 445	Chemical Instrumentation	3	CHM 24, CHM 331	MR
	SOC XXX or ECO XXX	General Education Requirement	3	COM 102	URE
	XXX	Free elective	3		ELC
		Total	**15**		
Spring	CHM 452	Soil and Water Chemistry	3	CHM 251	MR
	XXX	Advised elective	3		ELC
	XXX	Free elective	3		ELC
	XXX	Free elective	3		ELC
	XXX	General Education Requirement	3	COM 102	URE
		Total	**15**		

Abbreviation: **URE**: University Requirement, **ELC**: Elective, **MR**: Major Requirement, **EPT**: English Placement Test

Physics Concentration

Required Courses (26 credits)

- PHY 201 Modern Physics
- PHY 301 Energy Sources
- PHY 302 Environmental Physics II
- PHY 303 Computational Physics
- PHY 391 Information Sources
- PHY 490 Project
- MTH 203 Calculus III

Advised Electives (at least 15 credits)

To be chosen from the following list:

- ECO 403 Economics of Oil and Gas
- ECO 404 Economics of Energy, Resources and Environment
- PHY 304 Issues in Environmental Physics
- PHY 401 Environmental Modeling
- CHM 241 Analytical Chemistry
- CVE 231 Environmental Geology

Proposed Sequence of Study

Bachelor of Science in Environmental Science (Physics Concentration)

FIRST YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	PHY101	General Physics I	4	PHY 001 or Placement MTH 103	URE
	MTH 103	Calculus I	4	Math 001	URE
	CHM 101	General Chemistry I	4	CHM 001	URE
	COM XXX	Communication I	3	EPT score 4 or COM 001	URE
		Total	**15**		
Spring	PHY102	General Physics II	4	PHY 101	CRE
	MTH 104	Calculus II	4	MTH 103	CRE
	CHM 102	General Chemistry II	4	CHM 101	CRE
	COM XXX	Communication II	3	EPT score 5 or COM 101	URE
		Total	**15**		

SECOND YEAR (35 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	COM XXX	Communication III	3		URE
	BIO 101	General Biology I	4		CRE
	CMP XXX	A Programming Language	3		URE
	CHM 251	Environmental Chemistry	4	CHM 102	CRE
	PHY 201	Modern Physics	4	PHY 102	MR
		Total	**18**		
Spring	PHY 202	Environmental Physics I	3	PHY 102	CRE
	BIO 102	General Biology II	4	BIO 101	CRE
	COM XXX	Communication IV	3	COM 102	URE
	MTH 203	Calculus III	4	MTH 104	MR
	ARA XXX	Arabic Language Requirement	3	COM 102	URE
		Total	**17**		

THIRD YEAR (31 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	STA 201	Intro. to Statistics for Eng. & Natural Sc.	4		URE
	COM 208 or COM 209	Public Speaking or Dramatic Expressions	3	COM 102	URE
	PHY 301	Energy Sources	3	PHY 102	MR
	XXX	General Education Requirement	3	COM 102	URE
	XXX	Free elective	3		ELC
		Total	**16**		
Spring	PHY 302	Environmental Physics II	4	PHY 202	MR
	PHY 303	Computational Physics	4	MTH 203, PHY201	MR
	PHY 391	Physics Information Sources	1	PHY 102	MR
	XXX	General Education Requirement	3	COM 102	URE
	XXX	Free elective	3		ELC
		Total	**15**		

FOURTH YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	XXX	General Education Requirement	3	COM 102	MR
	PHY 490	Project	6		MR
	XXX	Advised elective	3		ELC
	XXX	Free elective	3		ELC
	XXX	General Education Requirement	3	COM 102	MR
		Total	**15**		
Spring	XXX	Free elective	3		ELC
	XXX	Advised elective	3		ELC
	XXX	Advised elective	3		ELC
	XXX	Free elective	3		ELC
	XXX	General Education Requirement	3	COM 102	URE
		Total	**15**		

Abbreviation: **URE**: University Requirement, **ELC**: Elective, **MR**: Major Requirement, **EPT**: English Placement Test

Bachelor of Arts in Public Administration

The B. A. program in Public Administration started in the academic year, 1999-2000. Graduates of this program will have an appropriate balance of knowledge, interpersonal relationship skills, and management and leadership competency. Hands-on experience at an internship site in a public organization will be possible for qualified students. A graduate who is well-prepared in generalized management, has excellent leadership skills, or specialized management of human resources, can expect to be the beneficiary of a great deal of respect and social prestige. Attached to the focus on leadership and management is an orientation to people and productivity, and accomplishing organizational goals. A familiarity with what it takes to be a successful manager will be well received in government agencies, corporate business firms, and not-for-profit organizations, in many places, including the Middle East, Europe, the Far East and the United States.

Graduates who have the necessary knowledge, people-skills and management competencies to get things done in organizations, and to facilitate organizational development are unique. The American University of Sharjah intends to produce graduates who will contribute some of these valuable assets to their communities. For example, these graduates may become part of an enterprise that will eventually develop and improve the capacity of governmental organizations in their public service delivery systems. Or they may be instrumental in building up a fluid system of human resources in a business firm. Skills in leadership,

building people-to-people relationships, public budgeting, human resources management, strategic planning, organizational change and responsiveness to public needs, will be given much attention. All of these aspects will enable the graduates to contribute to the efficiency, effectiveness, productivity and the capacity of the organizations with which they affiliate. Three specializations are available to the B.A. students in Public Administration: (1) Human Resources Management; (2) Public Administration and Society; and (3) Public Administration and Public Policy.

University Graduation Requirements

A total of 120 credit hours, including:

- Forty-two to forty-six credit hours of university requirements
- Forty-two to forty-five credit hours of major requirements, including a concentration
- Seventeen to twenty credit hours of free electives

Designated University Requirements

All students majoring in Public Administration must take the following course as a part of their University Requirements:

- STA 202 Introduction to Statistics for Social Sciences

Major Requirements

The following twelve courses (36-39 credit hours) are the required core:

- PBA 101 Introduction to Public Administration (Cross-listed with MGT 101)
- PBA 108 Communication and Mobilization of Interpersonal Relationships in Public Organizations
- PBA 301 Public Management Skill Modules
- PBA 302 Comparative Public Administration
- PBA 304 Public Budgeting
- PBA 306 Human Resources Management in Public Organizations
- PBA 310 Research in Public Administration
- PBA 311 Nonprofit Organization Management

- PBA 497 Internship in a Public Organization (3-6 credit hours)
- POL 201 Introduction to Political Studies (satisfies a university general education social science requirement)
- POL 204 International Organizations
- SOC 380 Sociology of Urban Politics (satisfies a university general education social science requirement)

Required Option (12 –15 credit hours)

Choose any five courses from the following concentration in Human Resources Management in the Public Sector; OR choose any four courses from Public Administration and Society; OR choose any four courses from Public Administration Policy.

Human Resources Management (15 credit hours)

- PBA 204 Women in Public Management
- PSY 205 Industrial Organization Psychology
- PBA 305 Classification, Job Analysis, Compensation and Fringe Benefits in Public Organizations
- PBA 307 Recruitment, Selection, Promotion, Retention and Disciplinary Actions in Public Organizations
- PBA 308 Executive and Middle-Management Training Techniques in Public Organizations
- PBA 380 Special Topics in Human Resources Management
- PBA 419 Seminar in Executive-Level Public Management Development

Public Administration and Society (12 credit hours)

- PBA 201 Public Management
- PBA 205 Intergovernmental Relations
- PBA 402 Urban and Regional Administration
- PBA 407 Legal Issues in Public Administration
- PBA 408 Development Management
- PBA 409 Organization Planning and Control
- PBA 410 Public Program Evaluation
- PBA 413 Public Financial Analysis
- POL 203 Political Philosophy
- POL 300 Comparative Chief Executives of Nation-States

Public Administration Policy (12 credit hours)

- PBA 201 Public Management
- SOC 202 Environmental Sociology
- PBA 205 Intergovernmental Relations
- PBA 312 Competition, Free Markets, Antitrust (Cross-listed with ECO 327)
- PBA 313 Government Regulation of Business (Cross-listed with ECO 328)
- PBA 407 Legal Issues in Public Administration
- PBA 411 Foundations of Public Policy Analysis
- PBA 415 Law and Public Policy
- PBA 417 Public Finance

Minor in Public Administration

A total of 15 credit hours, including:

Core Courses (Nine credit hours)

- PBA 101 Introduction to Public Administration
- PBA 108 Communication and Mobilization of Interpersonal Relationships in Public Organizations
- PBA 306 Human Resources Management in the Public Sector

Required Option:

Choose two (2) courses (six credit hours) from the following:

- PBA 204 Women in Public Management
- PBA 206 Motivation, Employee Development and Performance Appraisal in Public Organizations
- PBA 304 Public Budgeting
- PBA 311 Nonprofit Organization Management
- PBA 313 Government Regulation of Business
- PBA 415 Law and Public Policy
- SOC 380 Sociology of Urban Politics
- POL 200 Globalization
- POL 201 Introduction to Political Studies
- POL 202 International Relations
- POL 203 Political Philosophy (Cross-listed with PHI 203)
- POL 204 International Organizations
- POL 205 Public International Law
- POL 300 Comparative Chief Executives of Nation-States

Proposed Sequence of Study

Concentration in Human Resources Management

FIRST YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	MTH 101	Mathematics for Business I	3	MTH 002 or Placement Test	URE
	COM 101	Academic Writing	3	EPT score 4 or COM 001	URE
	ECO 201	Principles of Microeconomics	3		URE
	POL 201	Introduction to Political Studies	3	COM 102	URE
	PBA 101	Introduction to Public Administration	3		MR
		Total	**15**		
Spring	COM 102	Writing and Reading Across the Curriculum	3	EPT score 5 or COM 101	URE
	ARA 101	Readings in Arabic Heritage I	3	COM 102	URE
	PHI 201	Introduction to Philosophy	3	COM 102	URE
	POL 200	Globalization	3	COM 102	URE
	PBA 108	Communication and Mobilization of Interpersonal Relationships in Public Organizations	3		MR
		Total	**15**		

SECOND YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	COM 204	Advanced Academic English	3	COM 102	URE
	XXX	Science Requirement	3		URE
	STA 202	Introduction to Statistics for Social Sciences	3		URE
	PHI 203	Political Philosophy	3	PHI 201, or consent of inst.	URE
	POL 204	International Organizations	3	POL 201, or consent of inst.	MR
		Total	**15**		
Spring	XXX	Science Requirement	3		URE
	PBA 204	Women in Public Management			MR
	PBA 302	Comparative Public Administration	3		MR
	PBA 304	Public Budgeting	3		MR
	PBA 306	Human Resources Management	3		MR
		Total	**15**		

THIRD YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	COM /ENG	English Requirement	3		URE
	SOC 380	Sociology of Urban Politics	3	COM 102	URE
	PBA 305	Classification, Job Analysis, Compensation and Fringe Benefits in Public Organizations	3	PBA 306	MR
	PBA 311	Nonprofit Organization Management	3		MR
	PBA 415	Law and Public Policy	3	PBA 101	MR
		Total	**15**		
Spring	PBA 201	Public Management	3	Senior standing	MR
	XXX	Free elective		PBA 306	
	PBA 380	Special Topics in Human Resources Management	3	PBA 306, or consent of inst.	MR
	PBA 497	Internship in a Public Organization	3	PBA 101, 108, 204, 306	MR
	XXX	Free elective	3	Senior standing	
		Total	**15**		

FOURTH YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	PBA 310	Research in Public Administration	3	STA 201	MR
	PBA 307	Recruitment, Selection, Promotion, Retention and Disciplinary Actions in Public Organizations	3	PBA 306	MR
	PBA 308	Executive and Middle-Management Training Techniques in Public Organizations	3	PBA 306	MR
	POL 300	Comparative Chief Executives of Nation-States	3	POL 201, or consent of inst.	URE
	PSY 205	Industrial Organization Psychology	3		MR
		Total	**15**		
Spring	PBA 301	Public Management Skill Modules	3	PBA 101	MR
	PBA 419	Seminar in Executive-Level Public Management Development	3	PBA 204, 306, 311, or consent of inst.	MR
	PBA 315	Government Regulation of Business	3	ECO 201, or 202	MR
	PHI 204	Ethics for Professionals	3		URE
	XXX	Free elective	3		URE
		Total	**15**		

Abbreviation: **URE**: University Requirement, **MR**: Major Requirement, **ELC**: Elective, **EPT**: English Placement Test

Proposed Sequence of Study

Concentration in Public Administration Policy

FIRST YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	MTH 101	Mathematics for Business I	3	MTH 002 or Placement Test	URE
	COM 101	Academic Writing	3	EPT score 4 or COM 001	URE
	ECO 201	Principles of Microeconomics	3		URE
	POL 201	Introduction to Political Studies	3		URE
	PBA 101	Introduction to Public Administration	3		MR
		Total	**15**		
Spring	COM 102	Writing and Reading Across the Curriculum	3	EPT score 5 or COM 101	URE
	ARA 101	Readings in Arabic Heritage I	3	COM 102	URE
	PHI 201	Introduction to Philosophy	3	COM 102	URE
	POL 200	Globalization	3	C0M 102N	URE
	PBA 108	Communication and Mobilization of Interpersonal Relationships in Public Organizations	3		MR
		Total	**15**		

SECOND YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	COM 204	Advanced Academic English	3	COM 102	URE
	XXX	Science Requirement	3		URE
	STA 202	Introduction to Statistics for Social Sciences	3		URE
	PHI 203	Political Philosophy	3	PHI 201, or consent of inst.	URE
	POL 204	International Organizations	3	POL 201, or consent of inst.	MR
		Total	**15**		
Spring	XXX	Science Requirement	3		URE
	PBA 204	Women in Public Management	3	Senior standing	MR
	PBA 302	Comparative Public Administration	3		MR
	PBA 304	Public Budgeting	3		MR
	PBA 306	Human Resources Management	3		MR
		Total	**15**		

THIRD YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	COM/ENG	English Requirement	3		URE
	SOC 202	Environmental Sociology	3	COM 102	MR
	PBA 201	Public Management	3		MR
	PBA 311	Nonprofit Organization Management	3		MR
	PBA 380	Special Topics in Human Resources Management	3	PBA 306, or Senior standing	MR
		Total	**15**		
Spring	PBA 205	Intergovernmental Relations	3		MR
	PBA 312	Competition, Free Markets, Antitrust	3	ECO 201, or 202	MR
	PBA 313	Government Regulation of Business	3	ECO 201, or 202	MR
	PBA 497	Internship in a Public Organization	3	PBA 101, 108, 204, 306	MR
	XXX	Free elective	3	Senior standing	ELC
		Total	**15**		

FOURTH YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	PBA 310	Research in Public Administration	3	STA 201	MR
	PBA 407	Legal Issues in Public Administration	3	PBA 101	MR
	PBA 411	Foundations of Public Policy Analysis	3		MR
	POL 300	Comparative Chief Executives of Nation-States	3	POL 201, or consent of inst.	URE
	SOC 380	Sociology of Urban Politics	3	COM 102	URE
		Total	**15**		
Spring	PBA 301	Public Management Skill Modules	3	PBA 101	MR
	PBA 415	Law and Public Policy	3	PBA 101	MR
	PBA 417	Public Finance	3	PBA 304	MR
	PHI 204	Ethics for Professionals	3		URE
	XXX	Free elective	3		ELC
		Total	**15**		

Abbreviation: **URE**: University Requirement, **MR**: Major Requirement, **ELC**: Elective, **EPT**: English Placement Test

Proposed Sequence of Study

Concentration in Public Administration and Society

FIRST YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	MTH 101	Mathematics for Business I	3	MTH 002 or Placement Test	URE
	COM 101	Academic Writing	3	EPT score 4 or COM 001	URE
	ECO 201	Principles of Microeconomics	3		URE
	POL 201	Introduction to Political Studies	3	COM 102	URE
	PBA 101	Introduction to Public Administration	3	EPT score 5 or COM 101	MR
		Total	**15**		
Spring	COM 102	Writing and Reading Across the Curriculum	3	EPT score 5 or COM 101	URE
	ARA 101	Readings in Arabic Heritage I	3	COM 102	URE
	PHI 201	Introduction to Philosophy	3	COM 102	URE
	POL 200	Globalization	3	COM 102	URE
	PBA 108	Communication and Mobilization of Interpersonal Relationships in Public Organizations	3		MR
		Total	**15**		

SECOND YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	COM 204	Advanced Academic English	3	COM 102	URE
	XXX	Science Requirement	3		URE
	STA 202	Introduction to Statistics for Social Sciences	3		URE
	PHI 203	Political Philosophy	3	PHI 201, or consent of inst.	URE
	POL 204	International Organizations	3	POL 201, or consent of inst.	MR
		Total	**5**		
Spring	XXX	Science Requirement	3		URE
	PBA 201	Public Management	3	Senior standing	MR
	PBA 302	Comparative Public Administration	3		MR
	PBA 304	Public Budgeting	3		MR
	PBA 306	Human Resources Management	3		MR
		Total	**15**		

THIRD YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	COM/ENG		3		URE
	PSY 102	Social Psychology	3	COM 102	MR
	PBA 205	Intergovernmental Relations	3		MR
	PBA 311	Nonprofit Organization Management	3		MR
	PBA 380	Special Topics in Human Resources Management	3	PBA 306, or consent of inst.	MR
		Total	**15**		
Spring	PBA 402	Urban and Regional Administration	3		MR
	PBA 407	Public Finance	3	PBA 304	MR
	PBA 408	Development Management	3	ECO 201, or 202	MR
	PBA 497	Internship in a Public Organization	3	PBA 101, 108, 204, 306	MR
	XXX	Free elective	3		ELC
		Total	**15**		

FOURTH YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	PBA 310	Research in Public Administration	3	STA 201	MR
	PBA 303	Comparative Chief Executives in Nation-States	3	PBA 201, or consent of inst.	MR
	PBA 413	Public Financial Analysis	3	Senior standing	MR
	XXX	Free elective	3	Senior standing	MR
	SOC 380	Sociology of Urban Politics	3	Senior standing	URE
		Total	**15**		
Spring	PBA 301	Public Management Skill Modules	3	PBA 101	MR
	PBA 313	Government Regulation of Business	3	ECO 201, or 202	MR
	PBA 410	Public Program Evaluation	3	STA 101	MR
	PHI 204	Ethics for Professionals	3		URE
	XXX	Free elective	3		ELC
		Total	**15**		

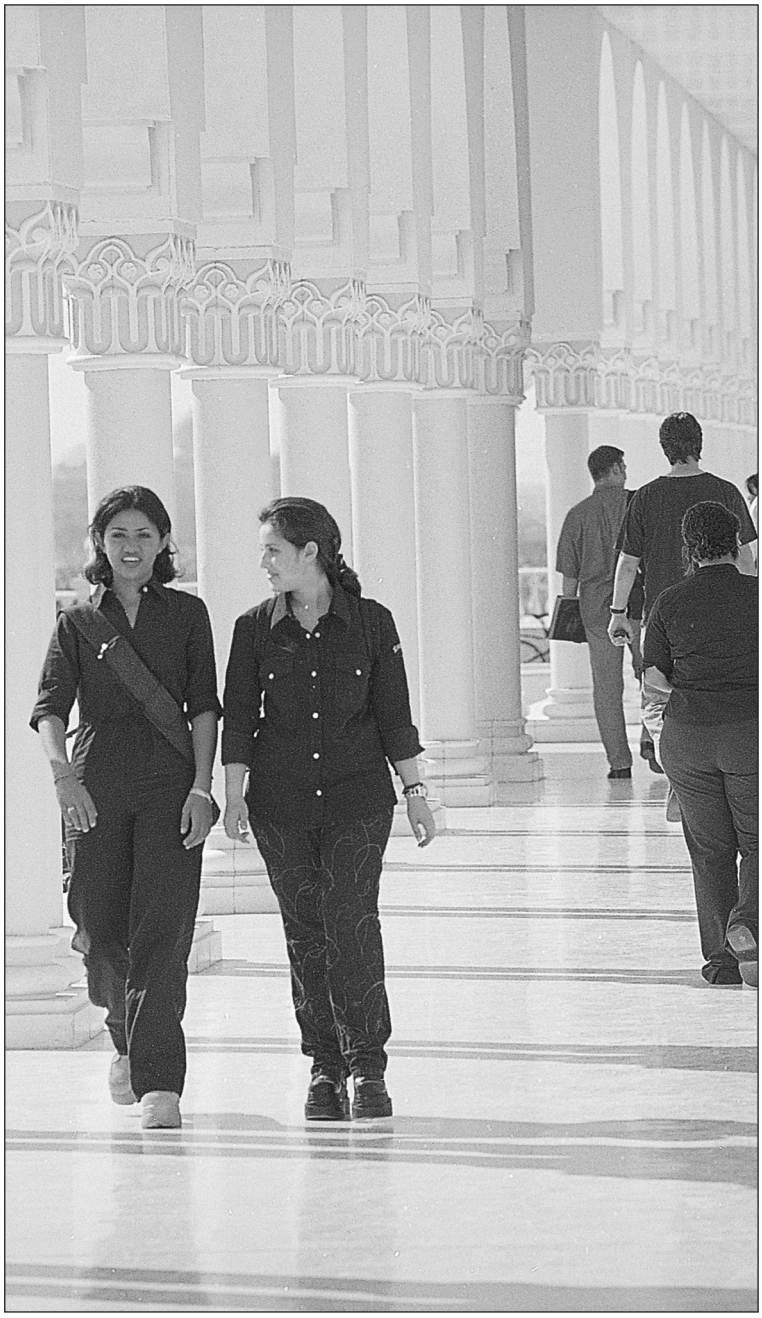
Abbreviation: **URE**: University Requirement, **MR**: Major requirement, **ELC**: Elective, **EPT**: English Placement Test

Arabic, Humanities and Social Sciences Programs

The Arabic and Humanities and Social Sciences Programs provide the student with courses in several disciplines that enrich his/her general education and professional training. These courses also satisfy the three credit hours of Arabic and 15 credit hours of Humanities and Social Sciences that are part of the university graduation requirement.

Science Programs

The Science faculty provide the courses in the Environmental Sciences Program and the foundation courses in Biology, Chemistry and Physics needed by engineering students. They also provide science courses to all students in order that they may fulfill their university graduation requirement in Science.




THE AMERICAN UNIVERSITY OF SHARJAH

School of Architecture and Design

Dean
Martin Giesen

Mission Statement

The School of Architecture and Design (SA&D) grounds its curriculum in the conviction that good design results from a combination of three major elements: a deep understanding of culture, guided by an ethical engagement in society, buttressed by an abiding respect for the creative skills needed to build sustainable material culture.

Against this background, the school is committed to the primary objective of providing its students with relevant, contemporary professional instruction in the fields of architecture, interior design, visual communication, multimedia, heritage management and design management.

The school is dedicated to inquiry and to the development of hands-on technical skills and competence in digital and other advanced media; to the pursuit of aesthetic investigations; to fostering 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:

- An environment which encourages achievement and personal growth, guided by a faculty of professionals who balance continuing scholarship and creative work with their desire for true excellence in teaching
- A comprehensive advisement and student counseling system that tracks student development and progress
- A general education curriculum that offers a solid foundation
- A clear, consistent philosophy that is evident throughout the sequence of studio courses
- A variety of courses that are continually updated to reflect rapidly changing design practices and the growing role of digital communication
- A respect for the limits imposed by feasibility, culture, traditions and the needs of society

Faculty

The faculty members serving in the School of Architecture and Design have been selected on the basis of their familiarity with a university education based on the American model. All members of the teaching staff are practicing professionals who combine mastery in teaching with continuing growth in their respective disciplines and thus are well equipped to serve as role models for students in their quest for an empowering and professional education.

Professor

Martin Giesen (Dean)
Friedrich Ragette (Visiting Distinguished Professor, Architecture)
Harry St. Ours (Design, Chair)

Associate Professor

Nadia Alhasani (Architecture, Chair)
Moustafa Kanishka (Architecture)
Amer Moustafa (Architecture)
Jay Randle (Architecture)
Mehdi Sabet (Architecture, Interior Design)
Dirk Van Wyk (Foundations, Visual Communication)
Gregor Weiss (Foundations, Architecture)

Assistant Professor

Tarek Al Ghoussein (Photography)
Antonio Castela (Interior Design)
Anthony Collins (Multimedia)
Bob Dahm (Multimedia)
Matthew Egan (Foundations, Printmaking)
David Hewitt (Foundations, Visual Communication)
Chris Kienke (Foundations)
Kimberley Lund (Foundations, Printmaking)
Kevin Mitchell (Architecture)
Ahmed Mokhtar (Architecture)
Karim Musfy (Architecture)
Samia Rab (Architecture, Heritage Management)
Phil Sheil (Foundations, Coordinator)
Florian Techel (Architecture, Digital Design)

Instructor

Paul Bantey (Visual Communication)
Karl Byas (Digital Media)
Masood Khan (Visual Design, Multimedia)

Career Opportunities

The SA&D prepares students for careers in:

- Environmental design, architecture, landscape architecture, interior design, town planning
- Graphic design, advertising, packaging design, illustration, digital media, animation, computer simulations, video
- Art and culture management, exhibition design and publicity, general design consulting

Special Notes

Space Availability (Studio Majors)

Admission to the School of Architecture and Design is competitive and limited to 140 students in first-year studio courses. The number of available places in second-year studio majors in Architecture, Interior Design, Multimedia Design and Visual Communications is limited to the following number:

- Architecture/Interior Design 48
- Multimedia Design 16
- Visual Communications 16

The number of available places in non-studio majors is not limited

- Design Management
- Heritage Management

Selection for Promotion

Selection for promotion to second-year studios is competitive. Criteria for promotion include assessment of:

- GPA in the foundation studio sequence
- GPA in non-studio first-year courses including Mathematics, Communication/English, History of Material Culture, and Digital Design
- Portfolio Review

Laptop

At the beginning of the third year, all students of architecture, interior design, multimedia and visual communications are required to have available for their use a laptop computer. Students are urged to purchase a particular computer model configured specifically following recommendations by the School of Architecture and Design.

Course Selection

Students are cautioned that the specific selection of courses required 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 additional to tuition cost. Students are given a limited account for printing. Lab fees apply for Multiples and Photography courses.

Accreditation and Ownership of Student Work

Accreditation is achieved and maintained through periodic review by professional accreditation agencies. Each program must maintain an archive of student work representative of actual performance in every component of the curriculum. To that end, the School of Architecture and Design reserves the right to retain, indefinitely, selected examples of student work.

Liability

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 may be held financially responsible for breakage or damage.

Programs Offered

The school of Architecture and Design offers the following degrees:

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

Architecture Program

Architecture arises from the same wellspring of civilization as other universal manifestations of material culture: arts, histories, letters, religion and commerce. Still, the artifacts we designate as architecture possess a scale, a 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 for us, 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 our living values. It gives abiding form, order and proportion to our activities. Architecture is a message to the world about our certainties and doubts, our values and beliefs, our preoccupations and our neglects. It both expresses and reveals.

The practice of architecture today, as in the past, requires coordinated contributions from a multiplicity 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 inquires into 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.

Bachelor of Architecture (B. Arch.)

The Bachelor of Architecture (B. Arch.) 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. One hundred seventy (170) credit hours comprise the degree program, including one hundred twenty-two (122) credit hours of required coursework 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 fifteen (15) credit hours of elective coursework in the major field. 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 forty-three (43) credit hours of university requirements. Designed to ensure a broad educational foundation, this base is held in common among all graduates of the American University of Sharjah. Some credit hours overlap.

University studies present a unique opportunity to explore other fields of interest. Based solely on individual interests, each Architecture student must select twelve (12) credit hours of electives from general university offerings.

The curriculum is designed to meet the requirements for licensure which 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 the criteria established by the National Architectural Accrediting Board (NAAB) of the United States for a first professional degree in Architecture.

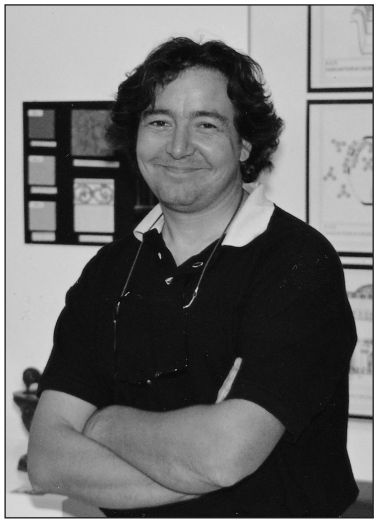
Admission to the Professional Degree Program

The number of seats in Architecture is limited. Formal admission to the professional program is competitive. Only the most highly-qualified foundation students are accepted.

To be considered for admission to the Bachelor of Architecture Program a student must successfully complete the Foundation Program in the School of Architecture and Design.

These requirements include:

- All four Foundation studio courses (DES 111, 112, 131, 132) with a minimum grade point average (GPA) of 2.0 out of 4.0 in each sequence (design and drawing)
- At least one course in History of Material Culture (DES 121 or DES 122)
- Digital Media in Design (DES 100)
- Mathematics for Architects (MTH 111) or its prerequisite (MTH 003)



- At least one course in the university Communication sequence
- A minimum of twenty-seven (27) semester hours of university credit (including the above courses)
- An overall grade point average (GPA) of 2.0

Retention Reviews in Architecture

As an extension of the regular advisement process, the performance of each Architecture student is reviewed following the completion of the second and fourth years in the program. A student must pass each review to continue in the major.

Second Year Review

The first mandatory review occurs at the end of the second year in Architecture.

To pass the review successfully, the student must:

- have attained a minimum grade point average (GPA) of 2.3 in the second year studio sequence.
- have completed successfully all required courses in Architecture through the second year of the program.

- be making normal progress toward the degree requirements.
- be a student in good standing in the university.

The department will assist an unsuccessful candidate in transferring to a field that holds better promise.

Third Year Review

At the end of the third year of Architecture studies, each student enrolled in the professional five-year program is reviewed again for retention.

To pass the review successfully, the student must:

- have attained a minimum grade point average (GPA) of 2.2 in all university courses.
- have attained a minimum grade point average of 2.5 in architectural design studio courses.

Fourth Year Review

At the end of the fourth year of Architecture studies, each student enrolled in the professional five-year program is reviewed again for retention.

To pass the review successfully, the student must:

- have attained a minimum grade point average (GPA) of 2.2 in all university courses.
- have attained a minimum grade point average of 2.5 in architectural design studio courses.

A student not eligible to continue in the professional five-year program will be allowed a change-of-major option and may, upon completion of the requirements of the four-year, non-professional degree, be awarded the Bachelor of Science in Architectural Studies (Architecture major).

Design Studio Retention Criteria

Independently of the above reviews, or overall studio averages:

- each student must earn a minimum studio grade point average (GPA) of 2.0 in each studio year.
- each student receiving a grade of (D) in two consecutive design studios will be required to repeat both studios. The student must earn a grade of (C) or better in each repeated studio to continue in the program.
- each student receiving a grade of (D) in any two non-consecutive design studios will be required to repeat the most recent studio. The student must earn a grade of (C) or better in the repeated studio to continue in the program.

University Graduation Requirements

A total of one hundred seventy (170) credit hours, including:

- Forty-three (43) credit hours of university requirements.
- One hundred twenty-two (122) credit hours of Architecture and architecture-related courses in the core curriculum.
- Fifteen (15) credit hours of approved Architecture electives.
- Twelve (12) credit hours of open electives.
- Fourteen weeks of approved professional training.

Proposed Sequence of Study

Bachelor of Architecture

FIRST YEAR (31 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	COM 101	Academic Writing	3	EPT score 4 or COM 001	URE
	DES 111	Descriptive Drawing I	3		MR
	DES 121	History of Material Culture I	3		MR/URE
	DES 131	Design Foundations I	3		MR
	MTH 111	Mathematics for Architects	4		MR/URE
		Total	**16**		
Spring	COM 102	Writing and Reading Across the Curriculum	3	EPT score 5 or COM 101	URE
	DES 100	Digital Media in Design	3		MR/URE
	DES 112	Descriptive Drawing II	3	DES 111	MR
	DES 122	History of Material Culture II	3		MR/URE
	DES 132	Design Foundations II	3	DES 131	MR
		Total	**15**		

SECOND YEAR (34 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	ARC 201	Architecture and Interior Design Studio I	5		MR
	ARC 212	Analysis and Methods in Architecture	3	DES 100	MR
	COM XXX	Advised elective	3		URE
	PHY 104	Physics for Architects	3	MTH 111	MR/URE
		Major (Architectural) elective	3		ME
		Total	**17**		
Spring	ARC 202	Architecture and Interior Design Studio II	5	ARC 201	MR
	ARC 220	Modern Foundations of Art and Architecture	3	DES 122	MR
	ARC 231	Materials and Practices in Construction	3		MR
	COM XXX	Advised elective	3		URE
	CVE 272	Structural Principles: Statics and Strength of Materials	3	PHY 104	MR/URE
		Total	**17**		

THIRD YEAR (36 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	ARC 301	Architectural Design Studio III	6	ARC 202, 220, PHY 104	MR
	ARC 321	Seminar: Ideas in Architecture	3	ARC 220	MR
	ARC 330	Rough Construction Processes	3	ARC 231	MR
	CVE 371	Structural Analysis: Conceiving Forces in Buildings	3	ARC 240	MR
		Major (Architectural) elective	3		ME
		Total	**18**		
Spring	ARC 302	Architectural Design Studio IV	6	ARC 301	MR
	ARC 351	Environmental Energies and Building Form	3	PHY 104	MR
	ARC 397	Internship I (6 weeks Summer Training)	0	ARC 302 (or co-req)	MR
	CVE 372	Structural Design: Concrete, Steel and Wood	3	ARC 341	MR
		Major (Architectural) elective	3		ME
		Advised elective	3		URE
		Total	**18**		

FOURTH YEAR (36 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	ARC 401	Architectural Design Studio V	6	ARC 302, 330, 240, 351, 360	MR
	ARC 452	Environmental Control Systems in Architecture	3	PHY 104	MR
		Major (Architectural) elective	3		ME
		Advised elective	3		URE
		Open elective	3		OE
		Total	**18**		
Spring	ARC 402	Architectural Design Studio VI	6	ARC 401	MR
	ARC 431	Finish Construction Processes	3	ARC 330	MR
	ARC 460	Professional Practice I: Economics and Management	3	ARC 397 or IDE 397	MR
	ARC 497	Internship II (8 weeks Summer Training)	0	ARC 402 (or co-req)	MR
		Major (Architectural) elective	3		ME
		Advised elective	3		URE
		Total	**18**		

FIFTH YEAR (33 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	ARC 500	Final Project Research and Programming	4	ARC 402, 431, 342, 452, 470	MR
	ARC 505	Topical Practicum in Architectural Design	5	ARC 402, 431, 342, 452, 470	MR
	CVE 561	Professional Practice II: Construction Management	3	ARC 431, 452, 460	MR
		Major (Architectural) elective	3		ME
		Open elective	3		OE
		Total	**18**		
Spring	ARC 590	Final Project Design	9	ARC 500, 505	MR
	ARC 562	Professional Practice III: Building Law	3	ARC 402	MR
		Open elective	3		OE
		Total	**15**		
		Total for the degree	**170**		

Abbreviations: **OE**: Open Elective, **MR**: Major Requirement, **URE**: University Requirement, **ME**: Major Elective, **EPT**: English Placement Test

Design Management Program

The Bachelor of Science in Design Management (B.S.Des.M.) at AUS provides students with the opportunity to engage in a design-based program with an entrepreneurial component. Design Management as a discipline integrates visual design and business studies. This discipline allows graduates to position themselves as entry level managers, directors or coordinators in the ever-changing field of design in its broadest definition.

Bachelor of Science in Design Management (B.S.Des.M.)

The program in Design Management provides broad insights into the foundations, theory and application of design and business studies. On the one hand, it offers a balanced combination of studio, design technologies, culture and media courses. On the other hand, the program complements design courses with a solid introduction to management, marketing, information systems and other business related courses. The aim is to prepare individuals to operate within the specific cultural and economic context of the UAE. Moreover, it provides its graduates with the knowledge to relate to and excel in the global market.

A degree in Design Management allows for independent or cooperative career paths. These range from industry-based communication businesses, market-research analysis to fine-art-oriented facilities. Career paths include, but are not limited to: administrative and managerial careers in media and service industries, product design, furnishings, project management, advertisement, fine arts and culture management, and administration.

The B.S.Des.M. requires a minimum of 126 credit hours of coursework, a minimum of forty-two (42) of which are taken in architecture and/or design, including a minimum of twelve (12) credit hours at the 300 level or above. All students are required to complete the common Architecture and Design Foundation courses. An additional twenty-one (21) credit hours are taken in business and management, along with forty-six to forty-eight (46 to 48) credit hours of university and general education requirements and nine (9) credit hours of electives. Some credit hours overlap among the sets of requirements. In addition, professional training is required of all students.

Admission to the Program

Formal admission to the B.S.Des.M. degree requires the fulfillment of the general university admission requirements.

Retention Review in Design Management

First Year Review

In order to progress to the second year in Design Management, a student must have a minimum of 27 total credit hours and must have completed the following courses: DES 100, 111, 112, 121 or 122, 131, 132, one math course (MTH 001 for students failing the math placement test), and COM 101.

Proposed Sequence of Study

Bachelor of Science in Design Management

FIRST YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	COM 101	Academic Writing	3	EPT score 4 or COM 001	URE
	DES 111	Descriptive Drawing I	3	MR	
	DES 121	History of Material Culture I	3	MR/URE	
	DES 131	Design Foundations I	3	MR	
	MTH 101	Mathematics for Business	3	Math Placement	MR/URE
		Total	**15**		
Spring	COM 102	Writing and Reading Across the Curriculum	3	EPT score 5 or COM 101	URE
	DES 100	Digital Media in Design	3	MR/URE	
	DES 112	Descriptive Drawing II	3	DES 111	MR
	DES 122	History of Material Culture II	3	MR/URE	
	DES 132	Design Foundations II	3	DES 131	MR
		Total	**15**		

SECOND YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	COM 235	Communication in Advertising	3	COM 102	URE
	STA 201	Introduction to Statistics	3		URE
	PHY 100	Conceptual Physics	3		MR/URE
	BIS 201	Business Information Systems	3	DES 100 or CMP 101N	MR
	XXX	Major elective	3		ME
		Total	**15**		
Spring	COM XXX	Advised elective	3	COM 102	URE
	DES 320	Interactive Web Design	3	DES 100	MR
	MGT 101	Fundamentals of Management	3		MR
	SOC 210	Globalization	3		MR/URE
	XXX	Advised elective	3		URE
		Total	**15**		

THIRD YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	ECO 201	Macroeconomics	3		MR/URE
	VIS 360	Fundamentals of Media Theory	3	DES 122	MR
	XXX	Major elective	3		ME
	COM 231	Writing for Visual Media	3	COM 102	MR/URE
	ACC 201	Fund Financial Accounting	3		MR
		Total	**15**		
Spring	ARA XXX	Advised elective	3		URE
	XXX	Major elective	3		ME
	VIS 361 or ARC 562	The Media Industry or Professional Practice III: Building Law	3	DES 112/DES 132	MR
	MKT 201	Fundamentals of Marketing	3		MR
	XXX	Open elective	3		OE
	DES 397	Internship	0		MR
		Total	**15**		

FOURTH YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	ACC 202	Fundamentals of Managerial Accounting	3		MR
	BLW 301	Issues in Business	3	Junior standing	MR
	ARC 460	Professional Practices I: Economics and Management	3		MR
	XXX	Major elective	3		ME
	XXX	Open elective	3		OE
		Total	**15**		
Spring	DES 400Z	Final Project	3	DES 400X	MR
	FIN 201	Fundamentals of Finance	3	ACC 202, MTH 101	MR
	MGT 306	Entrepreneurship	3	ACC202	MR
	XXX	Major elective	3		ME
	XXX	Open elective	3		OE
		Total	**15**		

Abbreviations: **OE**: Open Elective, **MR**: Major Requirement, **URE**: University Requirement, **ME**: Major Elective, **EPT**: English Placement Test

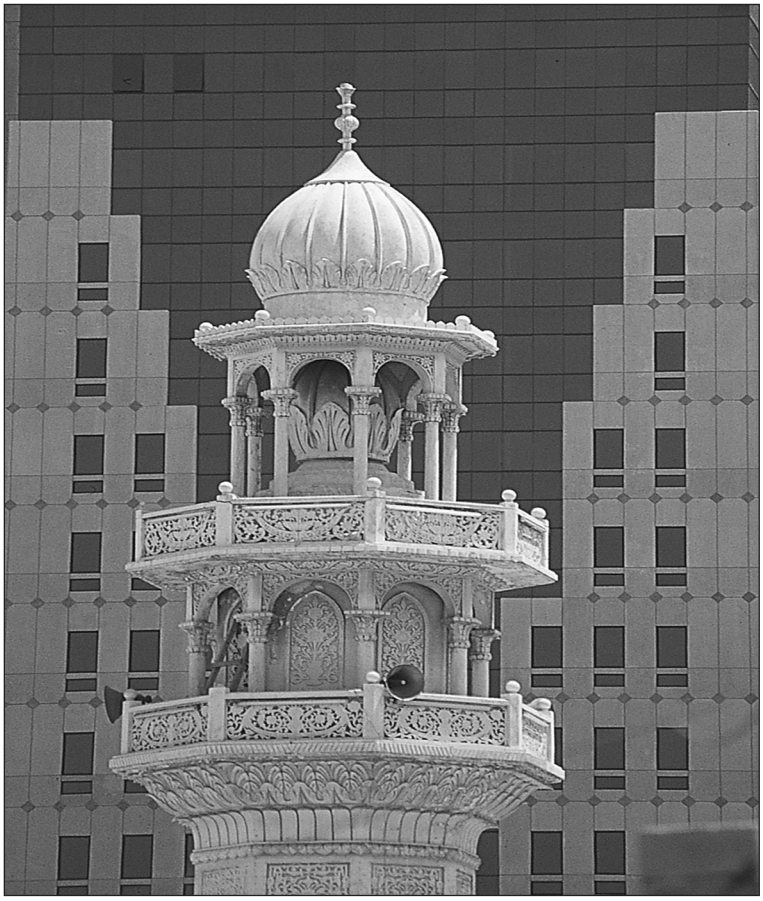
Heritage Management Program

Even if we are unaware of it, every step we take is in the footsteps of our ancestors. They leave with us the material remains of their presence, objects and buildings that, although often hidden, nonetheless surround us. It is important to uncover, understand, preserve and promote this material legacy if we are to maintain a sense of continuity with our cultural traditions and heritage.

Heritage Management is an inter-disciplinary approach to the study, preservation and display of material history, with specific emphasis on the movable and immovable cultural property of the Arabian Gulf region. Students apply their training in documentation, assessment, research, preservation, conservation, restoration and display to projects of historical and cultural significance to the United Arab Emirates.

Bachelor of Science in Heritage Management (B.S.H.M.)

The Heritage Management degree program is intended for students seeking professional careers in governmental offices of heritage, culture, tourism, planning, museums, art galleries and other public or private agencies specializing in heritage marketing and education, building and object preservation, conservation, restoration and display.



The B.S.H.M. degree requires one hundred twenty (120) credit hours, sixty-nine (69) of which consist of Heritage Management and related School of Architecture and Design courses. Of these required courses, thirty-one (31) credit hours are drawn from upper level Heritage Management courses. Students are also encouraged to complete related studio courses in the Multimedia and Interior Design programs to enhance the visual communication skills necessary for museum and gallery work. In addition, professional training is required of all students.

Upon graduation, Heritage Management students will be competent in the research, documentation, project planning, conservation and presentation of both movable and immovable cultural property. They will have a thorough background in the history of material culture, an appreciation of conservation issues and theories and the practical skills necessary for managing and protecting cultural property.

Admission to the Program

Formal admission to the B.S.H.M. degree requires the fulfillment of the general university admission requirements.

Retention Review in Heritage Management

First Year Review

In order to progress to the second year in Heritage Management, a student must have a minimum of 27 total credit hours and must have completed the following courses: DES 121, 111, 112, 131, 132, 100, one math course (may be MTH 00x for students failing the math placement test), COM 101 and an

Proposed Sequence of Study

Bachelor of Science in Heritage Management

FIRST YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	COM 101	Academic Writing	3	EPT score 4 or COM 001	URE
	DES 100	Digital Media in Design	3		MR/URE
	DES 111	Descriptive Drawing I	3		MR
	DES 121	History of Material Culture I	3		MR/URE
	DES 131	Design Foundations I	3		MR
		Total	**15**		
Spring	COM 102	Writing and Reading Across the Curriculum	3	EPT score 5 or COM 101	URE
	DES 112	Descriptive Drawing II	3	DES 111	MR
	DES 122	History of Material Culture II	3		MR/URE
	DES 132	Design Foundations II	3	DES 131	MR
	MTH XXX	Advised elective	3		MR/URE
		Total	**15**		

SECOND YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	COM 235	Communication in Advertising	3	COM 102	URE
	XXX	Advised elective	3		URE
	HRM 201	History of Material Culture in the Arabian Gulf I	3	DES 112, 122, 132	MR
	XXX	Open elective	3		OE
	VIS 221	Photography Basics	3	DES 112, 132	MR
		Total	**15**		
Spring	COM 231	Writing for Visual Media	3	COM 102	URE
	VIS 213	Illustration for Drawing	3	DES 112, 132	MR
	HRM 202	History of Material Culture in the Arabian Gulf II	3	HRM 201	MR
	XXX	Open elective	3		OE
	ECO 201	Microeconomics	3		URE
		Total	**15**		

THIRD YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	HRM 321	Introduction to Issues in Heritage Management I	3	HRM 202	MR
	HRM 331	Traditional Regional Material and Culture	3		MR
	STA XXX	Advised elective	3		URE
	COM 208	Public Speaking	3	COM 102	OE
	XXX	Open elective	3		OE
		Total	**15**		
Spring	HRM 322	Introduction to Issues in Heritage Management II	3	HRM 321	MR
	HRM 332	Theory and Practice of Building Restoration	3	HRM 331	MR
	HRM 333	Exhibition Studies	3		MR
	HIS XXX	History of UAE	3		MR
	XXX	Advised elective	3		URE
	HRM 397	Internship	0		MR
		Total	**15**		

FOURTH YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	HRM 401	Final Project Research	3		MR
	HRM 405	Topical Practicum in Heritage Management I	3	HRM 302	MR
	XXX	Open elective	3		OE
	ARA XXX	Advised elective	3		URE
	SOC 205	UAE Society	3		URE
		Total	**15**		
Spring	HRM 490	Final Project Design	6		MR
	HRM 406	Topical Practicum in Heritage Management II	3	HRM 411	MR
	XXX	Open elective	3		OE
	XXX	elective	3		ELC
		Total	**15**		

Abbreviations: **OE**: Open Elective, **MR**: Major Requirement, **URE**: University Requirement, **ME**: Major Elective, **EPT**: English Placement Test

Interior Design Program

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, 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, 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, interior architect, interior decorator, space planner, programmer, adaptive reuse designer, facilities planner, project manager, design journalist, educator, researcher, salesperson, renderer, healthcare designer, office planner, hospital designer.

The Interior Design program emphasizes creativity and innovation in the art of interior design, while giving students a strong background in technique and practical knowledge. The program core is comprised of six rigorous design studios following the common Foundation 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 lighting and acoustics.

The program prepares students for responsible design careers, and is firmly committed to graduating individuals that can join the regional or international workforce as competent and creative entry level professionals. AUS is committed to providing students in Interior Design with traditional, as well as digital, design skills to broaden their marketability and design capabilities.

The program emphasizes topics critical to the sustainable development of society and the quality of life in the region, with an emphasis on the United Arab Emirates. Many of our students will practice in the UAE upon graduation. Exposure to issues particular to the region is crucial. Professional and intellectual training, and professional internships solidify the student's contact and involvement with local practice. Interior Design and Architecture faculty members serve as both professional and academic mentors.

Bachelor of Interior Design (B.I.D.)

The Bachelor of Interior Design (B.I.D.) 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. One hundred thirty-one (131) semester hours of credit comprise the degree program, including eighty-six (86) credit hours of required coursework in Interior Design and closely associated fields. These courses represent the irreducible core of the Interior Design discipline.

Each student is required to extend the core curriculum with nine (9) credit hours of elective coursework in the major field. 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 forty-six (46) credit hours of university requirements. Designed to ensure a broad educational foundation, this base is held in common among all graduates of the 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 six (6) additional credit hours of electives from general university offerings.

The curriculum is designed to meet requirements for licensure which 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 criteria established by the Foundation of Interior Design Research (FIDER) of the United States for a first professional degree in Interior Design.

Admission to the Program

The number of seats in Interior Design is limited. Formal admission to the program is competitive. Only the most highly-qualified Foundation students are accepted.

These foundation requirements include:

- All four Foundation studio courses (DES 111, 112, 131, 132) with a minimum grade point average (GPA) of 2.0 in each sequence (design and drawing)
- At least one course in History of Material Culture (DES 121 or DES 122)
- Digital Media in Design (DES 100)
- Mathematics for Architects (MTH 111) or its prerequisite (MTH 003)
- At least one course in the university Communication sequence
- A minimum of twenty-seven (27) semester hours of university credit (including the above courses)
- An overall grade point average (GPA) of 2.0

Retention Review in Interior Design

Second Year Review

As an extension of the regular advisement process, the performance of each Interior Design student is reviewed following the completion of the second year in the program.

To pass the review successfully, the student must:

- have attained a minimum grade point average (GPA) of 2.3 in the second year studio sequence.
- have completed successfully all required courses in Interior Design through the second year of the program.
- be making normal progress toward the degree requirements.
- be a student in good standing in the university.

The department will assist an unsuccessful candidate in transferring to a field that holds better promise.

Third Year Review

To pass the third year review succesfully, the student must:

- have attained a minimum grade point average (GPA) of 2.2 in all university courses.
- have attained a minimum grade point average of 2.5 in Interior Design studio courses.

Design Studio Retention Criteria

Independently of the above reviews, or overall studio averages:

- each student must earn a minimum studio grade point average (GPA) of 2.0 in each studio year.
- each student receiving a grade of D in two consecutive design studios will be required to repeat both studios. The student must earn a grade of C or better in each repeated studio to continue in the program.
- each student receiving a grade of D in any two non-consecutive design studios will be required to repeat the most recent studio. The student must earn a grade of C or better in the repeated studio to continue in the program.

Graduation Requirements

A total of one hundred thirty-one (131) credit hours, including:

- Forty-six (46) credit hours of university requirements.
- Eighty-six (86) credit hours of Interior Design and related courses in the core curriculum.
- Nine (9) credit hours of approved Interior Design electives.
- Nine (9) credit hours of free electives. (For the academic year 2000/01 students in Interior Design may be required to take the free electives in areas of study within their major).
- Six weeks of approved professional training.

Proposed Sequence of Study

Bachelor of Interior Design

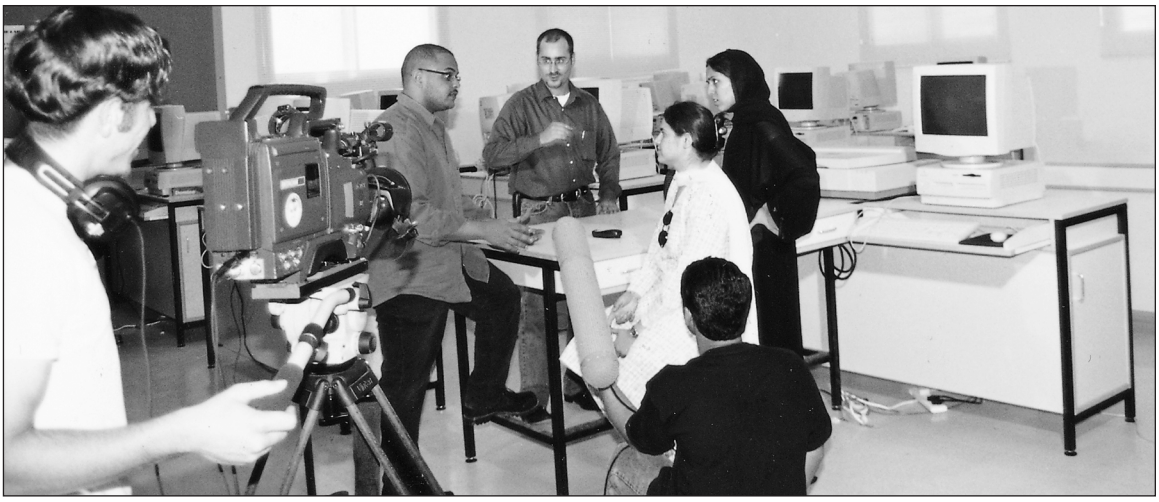
FIRST YEAR (31 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	COM 101	Academic Writing	3	EPT score 4 or COM 001	URE
	DES 111	Descriptive Drawing I	3		MR
	DES 121	History of Material Culture I	3		MR/URE
	DES 131	Design Foundations I	3		MR
	MTH 111	Mathematics for Architects	4		MR/URE
		Total	**15**		
Spring	COM 102	Writing and Reading Across the Curriculum	3	EPT score 5 or COM 101	URE
	DES 100	Digital Media in Design	3		MR/URE
	DES 112	Descriptive Drawing II	3	DES 111	MR
	DES 122	History of Material Culture II	3		MR/URE
	DES 132	Design Foundations II	3	DES 131	MR
		Total	**16**		

SECOND YEAR (34 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	ARC/IDE 201	Architecture and Interior Design Studio I	5	DES 100, 112, 121 or 122, 131, 132 MTH 003 or 111	MR
	COM 235	Communication in Advertising	3	COM 102	MR/URE
	IDE 231	Materials and Methods of Interior Design	3		MR
	PHY 104	Physics for Architects	3		MR/URE
	XXX	Major (Interior Design) elective	3		ME
		Total	**17**		
Spring	ARA XXX	Advised elective	3		URE
	ARC/IDE 202	Architecture and Interior Design Studio II	5	IDE 201	MR
	IDE 232	Interior Construction	3	IDE 231	MR
	XXX	Major (Interior Design) elective	3		ME
	XXX	Advised elective	3		ME
		Total	**17**		

THIRD YEAR (36 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	ARC 452	Environmental Control Systems	3	PHY 104	MR
	COM XXX	Advised elective	3		URE
	IDE 301	Interior Design Studio III	6	ARC/IDE 202	MR
	IDE 320	History of Interior Design	3	DES 122	MR
	XXX	Major (Interior Design) elective	3		ME
		Total	**18**		
Spring	IDE 302	Interior Design Studio IV	6	IDE 301	MR
	IDE 397	Intership (6 weeks summer training)	0	IDE 302 (or co-req)	MR
	ARC 451	Lighting and Acoustics	3	ARC/IDE 202, PHY 104	MR
	XXX	Advised elective	3		URE
	XXX	Advised elective	3		URE
	XXX	Open elective	3		OE
		Total	**18**		

FOURTH YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	XXX	Open elective	3		OE
	IDE 401	Final Project Research and Programming	4	IDE 302, 370	MR
	IDE 405	Topical Practicum in Interior Design	5	IDE 302, 370	MR
	IDE 431	Interior Design Project Management	3	IDE 232 or ARC 231	MR
	XXX	Advised elective	3		URE
		Total	**18**		
Spring	ARC 460	Professional Practice I: Economics and Management	3	ARC 370/IDE 397	MR
	IDE 402	Final Project Design	9	IDE 401, 405	MR
		Total	**12**		
		Total for the degree	**131**		

Abbreviations: **OE**: Open Elective, **MR**: Major Requirement, **URE**: University Requirement, **ME**: Major Elective, **EPT**: English Placement Test



Multimedia Design Program

Multimedia studies span a number of disciplines, including technology, communications, the arts, writing, photography, video, advertising and design. This major engages students with broad-ranging interests in graphic and 3-D design, digital technology and time-based media. To meet the challenges of this rapidly changing field, AUS offers the Bachelor of Science in Multimedia Design degree.

Bachelor of Science in Multimedia Design (B.S.M.D.)

The B.S.M.D. requires a minimum of four years (123 credit hours) of coursework, sixty-three (63) of which are in multimedia related studies, including sound, video, text, computer graphics, advertising and theory courses. The specialization is supported by forty-five to forty-eight (45 to 48) credit hours of university and general education requirements and fifteen (15) credit hours of electives. Some credit hours overlap among the sets of requirements. In addition, professional training is required of all students. The B.S.M.D. is designed for those who seek careers in the modern media industries. The curriculum follows standards of professional North American practice and is conceived to meet the requirements of multimedia industries in the United Arab Emirates.

Admission to the Program

Formal admission to the B.S.M.D. requires the fulfillment of the general university admission requirements.

Retention Review in Multimedia Design

First Year Review

The number of seats in Multimedia Design is limited. Formal admission to the program is competitive. Only the most highly-qualified Foundation students are accepted.

To be considered for admission to the Bachelor of Science in Multimedia Design a student must successfully complete the Foundation Program in the School of Architecture and Design.

These foundation requirements include:

- all four Foundation studio courses (DES 111, 112, 131, 132) with a minimum grade point average (GPA) of 2.0 in each sequence (design and drawing).
- at least one course in History of Material Culture (DES 121 or DES 122).
- Digital Media in Design (DES 100)
- Mathematics (MTH xxx) or its prerequisite (MTH 001) for students who failed the Math placement test.
- at least one course in the university Communication sequence (COM 101).
- a minimum of twenty-seven (27) semester hours of university credit (including the above courses).
- an overall grade point average (GPA) of 2.0.

Second Year Review

As an extension of the regular advisement 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, a grade point average (GPA) of 2.3 must be attained in the second year studio sequence. If the review has a negative outcome, the department will assist an unsuccessful candidate in transferring to a field that holds better promise.

Proposed Sequence of Study

Bachelor of Science in Multimedia Design

FIRST YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	COM 101	Academic Writing	3	EPT score 4 or COM 001	URE
	DES 100	Digital Media in Design	3		MR/URE
	DES 111	Descriptive Drawing I	3		MR
	DES 121	History of Material Culture I	3		MR/URE
	DES 131	Design Foundations I	3		MR
		Total	**15**		
Spring	COM 102	Writing and Reading Across the Curriculum	3	EPT score 5 or COM 101	URE
	DES 112	Descriptive Drawing II	3	DES 111	MR
	DES 122	History of Material Culture II	3		MR/URE
	DES 132	Design Foundations II	3	DES 131	MR
	XXX	Advised elective	3		MR/URE
		Total	**15**		

SECOND YEAR (32 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	COM 235	Communication in Advertising	3	COM 102	MR/URE
	MUM 201	Multimedia Studio I	4	2nd year status	MR
	MUM 210	Sound and Video I	3	2nd year status	MR
	VIS 221	Photography Basics	3	DES 112, 132	MR
	XXX	Advised elective	3		URE
		Total	**16**		
Spring	COM 231	Writing for Visual Media	3	COM 102	MR/URE
	MUM 202	Multimedia Studio II	4	MUM 201	MR
	MUM 211	Sound and Video II	3	MUM 210	MR
	MUM 230	Digital Multimedia	3	DES 100	MR
	XXX	Advised elective	3		URE
		Total	**16**		

THIRD YEAR (32 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	MUM 301	Multimedia Studio III	4	MUM 202	MR
	MUM 310	Advanced Sound and Video	3	MUM 211	ME
	STA XXX	Advised elective	3		URE
	XXX	Open elective	3		OE
	XXX	Advised elective	3		URE
		Total	**16**		
Spring	MUM 302	Multimedia Studio IV	4	MUM 301	MR
	VIS 361	The Media Industry	3	DES 112, 132	ME
	MUM 321	Photo-Journalism	3	VIS 221	MR
	MUM 331	Modeling and Animation	3	MUM 230	ME
	MUM 397	Internship	0		MR
	XXX	Advised elective	3		URE
		Total	**16**		

FOURTH YEAR (32 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	MUM 401	Multimedia Studio V	4	MUM 302	MR
	VIS 360	Fundamentals of Media Theory	3	DES 112, 132	MR
	XXX	Major elective	3		ME
	ARA XXX	Advised elective	3		URE
	XXX	Open elective	3		OE
		Total	**16**		
Spring	MUM 402	Multimedia Studio VI	4	MUM 401	MR
	XXX	Advised elective	3		MR/URE
	XXX	Open elective	3		OE
	XXX	Open elective	3		OE
		Total	**13**		

Abbreviations: **OE**: Open Elective, **MR**: Major Requirement, **URE**: University Requirement, **ME**: Major Elective, **EPT**: English Placement Test

Visual Communication Program

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 artistic training, visual communication experts require an understanding of human nature, ethical boundaries and societal needs. Visual communicators aim to inform, persuade and influence behavior. To meet those and related objectives, AUS offers the Bachelor of Science in Visual Communication (B.S.V.C.) degree.

Bachelor of Science in Visual Communication (B.S.V.C.)

The Bachelor of Science in Visual Communication requires a minimum of four (4) years of university studies. The foundation year of Visual Communication (Viscom) consists of a basic education in the applied arts, training in computer applications and courses in the history and relevance of design and visual expression. In the following years, elements of advertising, package design and marketing are explored in individual, hands-on studio projects. The graphic design sequence is the program core that integrates practical, cultural and contextual aspects of Visual Communication.

The B.S.V.C. is a professional program. The one hundred twenty-two (122) credit hours required for the degree comprise seventy-seven (77) credit hours in visual communication, digital applications and visual design related subjects. This specialization is supported by forty-six to forty-eight (46 to 48) credit hours of university requirements and nine (9) credit hours in elective courses. The B.S.V.C. is configured to prepare those who seek careers as designers in advertising, publishing and related visual communication media. The curriculum follows standards of professional North American organizations such as the National

Association of Schools of Art and Design and is conceived to meet or exceed requirements for visual communication experts in the United Arab Emirates.

Admission to the Program

Formal admission to the B.S.V.C. program requires the fulfillment of general university admission requirements.

University Graduation Requirements

A total of one hundred twenty-two (122) credit hours, including:

- Forty-six (46) to forty-eight (48) credit hours of university requirements
- Seventy-seven (77) credit hours in the major
- Nine (9) credit hours of free electives

Major requirements

The minimum requirements for a B.S.V.C. degree are fourteen (14) major requirement (MR) courses plus an advised selection of five (5) courses offered within Architecture and Design.

Retention Review in Visual Communication

First Year Review

The number of seats in Viscom is limited. Formal admission to the program is competitive. Only the most highly-qualified Foundation students are accepted.

To be considered for admission to the Bachelor of Science in Visual Communication Program, a student must successfully complete the Foundation Program in the School of Architecture and Design. Additional entry restrictions to the program may also apply.

These requirements include:

- all four Foundation studio courses (DES 111, 112, 131, 132) with a minimum grade point average (GPA) of 2.0 in each sequence (design and drawing).
- at least one course in History of Material Culture (DES 121 or DES 122).
- Digital Media in Design (DES 100).
- Mathematics (MTH xxx) or its prerequisite (MTH 00x) for students who failed the Math placement test.
- at least one course in the university Communication sequence (COM 101).
- a minimum of twenty-seven (27) semester hours of university credit (including the above courses).
- an overall grade point average (GPA) of 2.0.

Second Year Review

As an extension of the regular advisement process, the performance of all students in Viscom will be reviewed after the fourth semester for retention in the program. To successfully pass this review, a grade point average (GPA) of 2.3 must be attained in the second year studio sequence. If the review has a negative outcome, the department will assist an unsuccessful candidate in transferring to a field that holds

Proposed Sequence of Study

Bachelor of Science in Visual Communication

FIRST YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	COM 101	Academic Writing	3	EPT score 4 or COM 001	URE
	DES 111	Descriptive Drawing I	3		MR
	DES 121	History of Material Culture I	3		MR/URE
	DES 131	Design Foundations I	3		MR
	XXX	Advised elective	3		URE
		Total	**15**		
Spring	COM 102	Writing and Reading Across the Curriculum	3	EPT score 5 or COM 101	URE
	DES 100	Digital Media in Design	3		MR/URE
	DES 112	Descriptive Drawing II	3	DES 111	MR
	DES 122	History of Material Culture II	3		MR/URE
	DES 132	Design Foundations II	3	DES 131	MR
		Total	**15**		

SECOND YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	VIS 201	Graphic Design Studio I	3	DES 112 & DES 132	MR
	VIS 221	Photography Basics	3	DES 112 & DES 132	MR
	VIS 230	Digital Media in Visual Communication	3	DES 100	MR
	STA XXX	Advised elective	3		URE
	XXX	Advised elective	3		URE
		Total	**15**		
Spring	VIS 202	Graphic Design Studio II	3	VIS 201	MR
	VIS 213	Illustration Drawing	3	DES 112 & DES 132	MR
	VIS 222	Multiples I	3	DES 112	MR
	COM XXX	Advised elective	3		URE
	XXX	Advised elective	3		URE
		Total	**15**		

THIRD YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	VIS 301	Graphic Design Studio III	3	VIS 202	MR
	VIS 360	Fundamentals of Media Theory	3	DES 112 ,132	MR
	VIS XXX	Advised elective	3		ME
	COM XXX	Advised elective	3		URE
	XXX	Open elective	3		OE
		Total	**15**		
Spring	VIS 302	Graphic Design Studio IV	3	VIS 301	MR
	VIS XXX	Advised elective	3		MR
	VIS XXX	Advised elective	3		ME
	XXX	Advised elective	3		URE
	VIS 361	The Media Industry	3	DES 112, 132	MR
	VIS 397	Internship	0		MR
		Total	**15**		

FOURTH YEAR (32 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	VIS 401	Senior Graphic Design Studio	4	VIS 302	MR
	XXX	Open elective	3		OE
	VIS XXX	Advised elective	3		ME
	ARA XXX	Advised elective	3		URE
	XXX	Advised elective	3		URE
		Total	**16**		
Spring	VIS 402	Senior Graphic Design Portfolio	4	VIS 401	MR
	VIS 412 or 422	Senior Portfolio	3	VIS 411, VIS 321 or 322	MR
	VIS XXX	Advised elective	3		ME
	XXX	Advised elective	3		URE
	XXX	Open elective	3		OE
		Total	**16**		

Abbreviations: **OE**: Open Elective, **MR**: Major Requirement, **URE**: University Requirement, **ME**: Major Elective, **EPT**: English Placement Test

School of Business and Management

Dean
Wadiah Atiyah

Associate Dean
Zeinab Karake-Shalhoub

The American University of Sharjah School of Business and Management provides an educational experience of high quality and professionalism. The effective business professional of today must have competence in many disciplines, an understanding of a wide variety of relationships and the ability to analyze evolving business requirements. Regardless of the specialty area, the business professional must be an effective leader who knows how to organize and motivate groups to serve the goals of the organization. Effectively adapting business practices to emerging conditions, such as the accelerating growth of technology, communications and the internationalization of the business world, demands a thorough grasp of current business processes, theory and application. Through its pedagogy, the School of Business and Management:

- Prepares individuals to identify, analyze and understand the interrelationships among business organizations and international and domestic institutions in the Emirates and throughout the world.
- Develops individuals who can lead organizations toward economic success and social responsibility in the global marketplace of the twenty-first 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 core business education that emphasizes the following teaching methodologies:
  - Cutting-edge business education, utilizing the latest American business methods, techniques and technologies.
  - Integrated multidisciplinary approaches to teaching and learning, utilizing the latest business theories coupled with real world business data analysis and presentations.
  - Multimedia computer based instruction integrated throughout the business curriculum to assist students in learning the latest techniques in business and management.
  - Research conducted using on-line electronic libraries with thousands of up-to-date business journals and databases.

Faculty

The faculty of the School of Business and Management combine a scholarly record of research in the business field with years of practical corporate work experience. The faculty blend their academic and professional experience to create a class environment that is challenging, stimulating and applicable to the business world in the Gulf region and internationally.

Professor
James Grant (Marketing)
Zeinab Karake-Shalhoub (Information Systems)
Dennis Olson (Finance)

Associate Professor
Stephen Blythe (Accounting)
Ralph Kuehn (Information Systems)
Louis F. Mottola (Quantitative Management, Director of Graduate Studies)
Lewis Tucker (Marketing)

Assistant Professor
Osamah Al Khazali (Finance)
Jorg Bley (Finance)
Abdelkader Daghfous (Information Systems)
Mike Knudstrup (Management)
Kermit Kuehn (Human Resource Management)
Brent McCallum (Accounting)
Ralph Palliam (Finance)
Sofiane Sahraoui (Information Systems)

Instructor
Peter Birks (Information Systems)
Anthony Farah (Information Systems)
Carol Houser (Community Services)
Judith Mroczek (Accounting)
Diana Seyouri (Marketing and Information Systems)

Executive in Residence
Dene Ekholm (Management)

Admission and Requirements

Students who qualify for admission to AUS as freshmen may enroll in the School of Business and Management. Due to the quantitative emphasis of the business administration curriculum, it is required that students admitted into the Bachelor of Science in Business Administration, Bachelor of Science in Management Information Systems or Bachelor of Science in Finance programs take the Mathematics Placement Examination. Initially all business students are enrolled in the B.S.B.A. program. Upon completion of at least 60 credit hours of study with a grade point average of 2.5 or higher a student may apply for acceptance to one of the B.S. programs.

Transfer students may be given credit for courses completed in the institution from which they are transferring. A grade of B or better must be achieved in business and related courses in order for them to be considered as transfer credits to the School of Business and Management. General university requirements may be transferred with a grade of C or better.

Students wishing to transfer from other schools at AUS may be considered for admission to the School of Business and Management only if they meet the School's minimum academic standards.

All B.S.B.A., B.S.M.I.S. and B.S. in Finance transfer students are required to take Business Policy and Strategy and at least 30 upper-level credits towards their concentration requirements. Transfer credits for upper-division business courses are subject to validation by the appropriate School of Business department. Transfer credit may be conditional upon the successful completion of a more advanced course at the American University of Sharjah.

University Graduation Requirements

A minimum of 120 credit hours as follows:

- Forty-two to forty-six credit hours of general university requirements (nineteen of these credits should be university requirements designated for business students)
- Seven credit hours of statistics
- Thirty credit hours of core business courses
- Thirty credit hours of business concentration requirements
- Seven to nine credit hours of free electives

Designated University Requirements

All School of Business and Management students must take the courses listed below as part of their university requirements. A grade of C- or better is required for all restricted university requirements.

- COM 225 Global Business Communication (formerly COM 206) satisfies a university English requirement
- COM 208 (Public Speaking) satisfies the university oral communication requirement
- ECO 201 (Principles of Microeconomics) satisfies a university general education social science requirement
- ECO 202 (Principles of Macroeconomics) satisfies a university general education social science requirement
- MTH 101(Math for Business I) satisfies the university math requirement

Students on the set of "Good Morning America" with host Charles Gibson and AUS Community Relations Director, Carole Houser.

Business Administration Program

The Business Administration program provides students with a business core that offers a broad knowledge of business functions while emphasizing the global business environment. In addition to the business core, the student must also complete two areas of specialization.

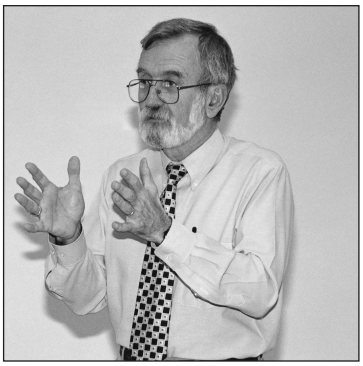
Bachelor of Science in Business Administration (B.S.B.A.)

The objectives of the B.S.B.A. program are to:

- Develop an understanding of the UAE, American and international economic systems and the important relationship between business and society.
- Develop a global perspective on business operations.
- Provide a background in concepts, processes and institutions used in the production and marketing of goods and services and also in the financing of business organizations.
- Provide a foundation in concepts and applications of accounting, quantitative methods and information technology.
- Stimulate the students' intellectual curiosity, develop their ability to think creatively and reason logically and encourage their consideration of demographic diversity and ethical principles.

Business Core

All School of Business and Management students must complete the following thirty credits (10 courses) of business core courses with a grade of C- or better, regardless of their area of concentration:



- ACC 201 Fundamentals of Financial Accounting
- ACC 202 Fundamentals of Managerial Accounting
- BLW 301 Business Law
- BIS 201 Business Information Systems
- FIN 201 Fundamentals of Financial Management
- FIN 301 Financial Statement Analysis
- MGT 201 Introduction to Management
- MGT 406 Business Policy and Strategy
- MIS 201 Fundamentals of Management Information Systems
- MKT 201 Fundamentals of Marketing

Areas of Concentration

The School of Business and Management provides its students with the opportunity to pursue a concentration in two out of five areas of business specialization: *Accounting, Finance, Marketing, Management, and Management Information Systems*.

Accounting

The Accounting concentration is designed to prepare graduates for management careers in the fields of accounting, financial management and consulting. Students who pursue this concentration will develop specific business competencies dealing with the financial management of private and public corporations. Furthermore, this concentration is designed to enable students who wish to continue with graduate study to qualify for professional certification, such as the CPA certificate (Certified Public Accountant) in the United States. Courses required for the Accounting concentration are:

- ACC 301 Intermediate Financial Accounting I
- ACC 302 Intermediate Financial Accounting II
- ACC 303 Cost Accounting
- ACC 304 Auditing
- ACC 401 Advanced Financial Accounting or AIS (Accounting Information Systems) or other approved Accounting courses

Finance

This concentration offers students an integrative approach to the fields of banking and finance. Students will develop the analytical tools and theoretical framework necessary to analyze and understand the financial and banking sectors. Furthermore, this concentration provides the essential tools for understanding investments, capital markets, financial management and financial institutions. Students will also develop competencies in the banking sector with regard to management of financial instruments, markets and risk management. Courses required for the Finance concentration are:

- FIN 302 Financial Markets and Institutions
- FIN 303 Investment Analysis
- FIN 306 Insurance and Financial Planning
- FIN 404 Portfolio Management
- FIN 405 Advanced Financial Management or other approved Finance courses

Proposed Sequence of Study

Concentration in Accounting and Finance

FIRST YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	COM 101	Academic Writing	3	EPT score 4 or COM 001	URE
	ECO 201	Principles of Microeconomics	3		URE
	MTH 101	Mathematics for Business I	3		URE
	BIS 201	Business Information Systems	3		CRE
	XXX	Advised elective	3		CRE
		Total	**15**		
Spring	ACC 201	Fundamentals of Financial Accounting	3		CRE
	MGT 201	Introduction to Management	3	2nd semester (12 credits min.)	CRE
	ECO 202	Principles of Macroeconomics	3		URE
	MTH 102	Mathematics for Business II	3	MTH 101	CRE
	COM 102	Writing and Reading Across the Curriculim	3		URE
		Total	**15**		

SECOND YEAR (31 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	ACC 202	Fundamentals of Managerial Accounting	3	ACC 201	CRE
	COM 204	Advanced Academic English	3	COM 102	URE
	MIS 201	Fundamentals of MIS	3	BIS 201	CRE
	QAN 201	Introduction to Statistics	4		URE
	XXX	Advised elective	3		CRE
		Total	**16**		
Spring	COM 225	Global Business Communication	3	COM 203 or COM 204	URE
	FIN 201	Fundamentals of Financial Management	3	ACC 201, QAN 201	CRE
	MKT 201	Fundamentals of Marketing	3	ECO 201& 202	CRE
	QAN 202	Quantitative Analysis for Decision Making	3	QAN 201	CRE
	ACC 305	Income Tax I	3	ACC 202	MR
		Total	**15**		

THIRD YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	ACC 301	Intermediate Financial Accounting I	3	ACC 202	MR
	COM 208	Public Speaking	3	COM 102	URE
	FIN 301	Financial Statement Analysis	3	ACC 202, FIN 201	MR
	FIN 302	Financial Markets and Institutions	3	FIN 201	MR
	ACC 306	Income Tax II	3	ACC 305	MR
		Total	**15**		
Spring	ACC 302	Intermediate Financial Accounting II	3	ACC 301	MR
	FIN 303	Investment Analysis	3	FIN 201	MR
	LAW 301	Business Law	3		CRE
	XXX	Advised elective	3		CRE
	XXX	Advised elective	3		CRE
		Total	**15**		

FOURTH YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	ACC 303	Cost Accounting		ACC 202	MR
	FIN 305	Insurance & Finance Banking	3	FIN 201	MR
	FIN 404	Portfolio Management	3	FIN 303, QAN 202	MR
	ACC 401	Advanced Financial Accounting	3	ACC 302	MR
	XXX	Advised elective	3		CRE
		Total	**15**		
Spring	ACC 407	Accounting Theory	3	ACC 401	MR
	ACC 304	Auditing	3	ACC 302	MR
	FIN 401	International Finance	3	FIN 201	MR
	MGT 406	Business Policy & Strategy - Capstone	3	Senior standing	CRE
	XXX	Advised elective	3		CRE
		Total	**15**		

Abbreviations: **URE**: University Requirement; **CRE**: College Requirement; **MR**: Major Requirement; **EPT**: English Placement Test

Management

The Management concentration offers professional training in the complex art of human management as it relates to corporate and organizational behavior in the business world. The field of management requires knowledge of individual and group behavior, the processes of perception and how people select and interpret information. This concentration provides the tools and skills necessary to manage simultaneous complex tasks and objectives through rigorous project management training and project simulations. Students will gain an understanding of the importance of management to society and organizations, and how management can be a force for positive change in a rapidly changing business environment. Courses required for the Management concentration are:

- MGT 301 Organizational Behavior
- MGT 302 Managing Human Resources
- MGT 303 Management and Leadership Development
- MGT 403 Entrepreneurship
- MGT 380 Project Management or other approved Management courses

Marketing

Students in this concentration study the practical application of marketing concepts such as procedures for developing promotions, pricing of products, distribution channels and sales management strategies. Furthermore, heavy emphasis is placed on market research utilizing statistical analytical techniques, consumer behavior and a variety of market programming methodologies. Particular emphasis is placed on interpersonal communication techniques and on the practical application of marketing concepts as they relate to sales management. Courses required for the Marketing concentration are:

- MKT 301 Consumer Behavior
- MKT 302 Marketing Research
- MKT 303 E-Commerce
- MKT 304 Sales Management
- MKT 401 Marketing Strategy

Proposed Sequence of Study

Concentration in Marketing and Management

FIRST YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	COM 101	Academic Writing	3	EPT score 4 or COM 001	URE
	ECO 201	Principles of Microeconomics	3		URE
	MTH 101	Mathematics for Business I	3		URE
	BIS 201	Business Information Systems	3		URE
	XXX	Advised elective	3		CRE
		Total	**15**		
Spring	ACC 201	Fundamentals of Financial Accounting	3		CRE
	MGT 201	Introduction to Management	3	2nd semester (12 credits min.)	CRE
	ECO 202	Principles of Macroeconomics	3		URE
	MTH 102	Mathematics for Business II	3	MTH 101	CRE
	COM 102	Writing and Reading Across the Curriculim	3		URE
		Total	**15**		

Abbreviations: **URE**: University Requirement; **CRE**: College Requirement; **MR**: Major Requirement; **EPT**: English Placement Test

SECOND YEAR (31 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	ACC 202	Fundamentals of Managerial Accounting	3	ACC 201	CRE
	COM 204	Advanced Academic English	3	COM 102	URE
	MIS 201	Fundamentals of MIS	3	BIS 201	CRE
	QAN 201	Introduction to Statistics	4		URE
	XXX	Advised elective	3		CRE
		Total	**16**		
Spring	COM 225	Global Business Communication	3	COM 203 or COM 204	URE
	FIN 201	Fundamentals of Financial Management	3	ACC 201, QAN 201	CRE
	MKT 201	Introduction to Marketing	3	ECO 201 & 202	CRE
	QAN 202	Quantitative Analysis for Decision Making	3	QAN 201	CRE
	XXX	Advised elective	3		CRE
		Total	**15**		

THIRD YEAR (31 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	COM 208	Public Speaking	3	COM 102	URE
	FIN 301	Financial Statement Analysis	3	ACC 202, FIN 201	MR
	MGT 301	Organizational Behavior	3	MGT 201	MR
	MKT 301	Consumer Behavior	3	MKT 201	MR
	XXX	Advised elective	3		CRE
		Total	**15**		
Spring	LAW 301	Business Law	3	3rd year junior standing	CRE
	MGT 302	Managing Human Resources	3	MGT 201	MR
	MGT 380	Project Management	3	ACC 202, MIS 201, MGT 301	MR
	MKT 302	Marketing Research	3	MKT 201, QAN 201	MR
	XXX	Advised elective	3		CRE
		Total	**15**		

FOURTH YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	MGT 303	Management & Leadership Development	3	MGT 301	MR
	MKT 303	E-Commerce	3	MKT 201, MIS 201	MR
	MKT 304	Sales Management	3	MKT 201	MR
	XXX	Advised elective	3		CRE
	XXX	Advised elective	3		CRE
		Total	**15**		
Spring	MGT 403	Entrepreneurship	3	University senior standing	MR
	MGT 406	Business Policy & Strategy – Capstone	3	Senior business standing	CRE
	MKT 401	Marketing Strategy	3	MKT 301, MKT 302, MIS 201	MR
	XXX	Advised elective	3		CRE
	XXX	Advised elective	3		CRE
		Total	**15**		

Management Information Systems

Managers and non-managers alike depend upon information for decision-making. To be useful, information must be understandable, timely, thorough, focused and distributed to the appropriate individual. Accomplishing all this is the challenge of Management Information Systems. In this concentration, students will acquire professional skills in the areas of computer systems, networks, communications, data analysis and other skills needed by this expanding field of technology. Courses required for the Management Information Systems concentration are:

- MIS 301 Fundamentals of Database Management
- MIS 302 Advanced Database Management
- MIS 303 Introduction to Systems Analysis
- MIS 403 Applied Systems Design
- MIS 404 Internet Business Applications

Proposed Sequence of Study

Concentration in Management Information Systems and Accounting

	FIRST YEAR (30 credit hours)				
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	COM 101	Academic Writing	3	EPT score 4 or COM 001	URE
	ECO 201	Principles of Microeconomics	3		URE
	MTH 101	Mathematics for Business I	3		URE
	BIS 201	Business Information Systems	3		URE
	XXX	Advised elective	3		CRE
		Total	**15**		
Spring	ACC 201	Fundamentals of Financial Accounting	3		CRE
	MGT 201	Introduction to Management	3	2nd Semester, Freshman standing (12 credit minimum)	CRE
	ECO 201	Principles of Macroeconomics	3		URE
	MTH 102	Mathematics for Business II	3	MTH 101	CRE
	COM 102	Writing and Reading Across the Curriculim	3		URE
		Total	**15**		

Abbreviations: **URE**: University Requirement; **CRE**: College Requirement; **MR**: Major Requirement; **EPT**: English Placement Test

SECOND YEAR (31 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	ACC 202	Fundamentals of Managerial Accounting	3	ACC 201	CRE
	COM 204	Advanced Academic English	3	COM 102	URE
	MIS 201	Fundamentals of MIS	3	BIS 201	CRE
	QAN 201	Introduction to Statistics	4		URE
	XXX	Advised elective	3		CRE
		Total	**6**		
Spring	COM 225	Global Business Communication	3	COM 203 or COM 204	URE
	FIN 201	Fundamentals of Financial Management	3	ACC 201, QAN 201	CRE
	MKT 201	Introduction to Marketing	3	ECO 201 & 202	CRE
	QAN 202	Quantitative Analysis for Decision Making	3	QAN 201	CRE
	XXX	Advised elective	3		CRE
		Total	**15**		

THIRD YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	COM 208	Public Speaking	3	COM 102	URE
	ACC 301	Intermediate Financial Accounting I	3	ACC 202	MR
	FIN 301	Financial Statement Analysis	3	ACC 202, FIN 201	MR
	MIS 301	Fundamentals of Database Mgt.	3	MIS 201	MR
	XXX	Advised elective	3		CRE
		Total	**15**		
Spring	ACC 302	Intermediate Financial Accounting II	3	ACC 301	MR
	LAW 301	Business Law	3		CRE
	MIS 303	Introduction to Systems Analysis	3	MIS 201	MR
	MIS 302	Advanced Database Mgt.	3	MIS 301	MR
	XXX	Advised elective	3		CRE
		Total	**15**		

THIRD YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	ACC 303	Cost Accounting	3	ACC 202	MR
	ACC 304	Auditing	3	ACC 302	MR
	MGT 380	Project Management	3	ACC 202, MIS 201, MGT 301	MR
	XXX	Advised elective	3		CRE
	XXX	Advised elective	3		CRE
		Total	**15**		
Spring	ACC 401	Advanced Financial Accounting	3	ACC 302	MR
	MGT 406	Business Policy & Strategy – Capstone	3	Last semester of 4th year	CRE
	MIS 403	Applied Systems Design	3	MIS 303	MR
	MIS 404	Internet Business Applications	3	MIS 201	MR
	XXX	Advised elective	3		CRE
		Total	**15**		

Bachelor of Science in Finance (B.S.FIN.)

Description

Finance is the art and science of obtaining, administering and managing money. Along with management and marketing, finance is one of the basic business functions of the free enterprise system. Every organization must perform the finance function and almost every decision that organizations make has financial implications. Students majoring in Finance are introduced to the theory, concepts, applications, institutional environment and analytical tools essential for proper decision-making.

The Finance program develops the analytical and behavioral skills necessary for success in dynamic domestic and global financial environments. Courses are designed to provide students with an understanding of the relationship between business finance and the economic system in the context of the management decision-making process.

The appropriate use of technology, new organizational structures, entrepreneurial thinking and international awareness is integrated throughout the program. The goal of the Finance program is to impart knowledge and competence in finance that will prepare students for entry-level and leadership positions in private and public sector organizations. Students seeking careers in real estate, corporate control, treasury functions and investments will find the Finance major well suited for their needs.

Mission and Goals of the Finance Program

The mission of the Finance program is to provide students with a strong undergraduate foundation in the theory and application of finance, building upon a liberal arts and science education. The Finance program is intended to prepare students for graduate study in finance as well as to provide them with the financial concepts and tools necessary for positions in government, business and industry, both nationally and internationally.

The program serves a diverse student population, many of whom are first generation university students. It is responsive to the particular needs of non-traditional students whose life experiences and commitment to learning enrich the overall educational environment.

It provides service courses to students in the School of Business and Management and the university that are appropriate for the business core and for students seeking general knowledge of the application of finance in business.

The Finance program is committed to excellence in teaching. In a discipline that constantly evolves, it is important for the faculty and the curriculum to remain current. As such, the program encourages applied research and business consulting as methods of remaining current and bringing new thought and developing practices to the classroom.

The program recognizes the importance of having faculty with diverse interests and talents. Each faculty member is encouraged to use his or her strengths to contribute to the university, professional community, larger community and discipline.

Objectives of the Finance Program

The objectives of the program are to:

- Provide a quality education to students that will prepare them for leadership positions within the finance profession. Students acquire financial knowledge and skills that can be applied in a variety of environments.
- Help students understand the process of integration and applying core competencies and skills in business or business-related environments and/or situations.
- Allow students to prepare and take the examinations of Chartered Financial Analyst (CFA) and Certified Financial Planner (CFP).
- Provide students with knowledge of the problems and opportunities that confront entities in the specific field of finance.
- Provide students with an education that emphasizes the concepts of financial management, investment problems, capital markets, business ethics and decision making strategies.
- Prepare students to be productive professionals who can make responsible decisions in a changing world.
- Create students who are able to focus on the challenges found in an educational environment that emphasizes high quality teaching and learning.
- Enhance and strengthen students' learning processes through applied research and instructional development while recognizing the contribution of basic research.

Finance Curriculum Outcomes

A graduate of the Finance program should be able to understand:

- Prices reflect value.
- Arbitrage.
- Cash flow drives everything.
- Financial markets tend to be efficient.

Unique Features of the Program

The required curriculum in Finance provides students with a basic foundation in financial management and exposure to the nature and operations of the financial markets. Building upon this foundation, students may expand their knowledge with courses in banking, international finance, portfolio management, intermediate accounting, intermediate economics, calculus and statistics.

Unique Features of a B.S. in Finance at AUS

- Analytical tools to handle a variety of finance and business functions: courses are designed to provide students with an understanding of the relationship between business finance and the economic system in the context of the management decision making process.
- Adoption of technology: the appropriate use of technology, new organizational structures, entrepreneurial thinking and international awareness is integrated throughout the program.
- Integration of courses at AUS: the Finance curriculum is integrated with other business courses and non-business courses (e.g., Mathematics, Statistics, English, Psychology, Economics).
- Critical thinking is developed through an active learning process: the curriculum in Finance helps the students acquire good analytical and communication skills and keep abreast of current economic and political developments.
- The required curriculum in Finance provides students with a basic foundation in finance and an exposure to the nature and operations of the financial markets. Building upon this foundation, students may expand their knowledge by electing courses in banking, international finance, portfolio management and more.
- Research findings are integrated into the curriculum: the School of Business and Management encourages scholarly work because it helps the faculty member update his or her knowledge and is incorporated into the classroom.
- Existence of working partnerships between academe and practice: the program encourages applied research and business consulting as methods of remaining current and bringing new thought and developing practices to the classroom.

Competencies at Time of Graduation

Below is a sample of the skills students will take away with them to utilize in their careers in finance:

- Problem-solving
- Decision-making
- Developing budgets
- Preparing financial reports and projections
- Assessing risk
- Defining problems and designing solutions
- Interpreting accounting and financial data
- Presenting reports and proposals to groups
- Utilizing computer software for analysis and reports

What do finance professionals actually do?

Finance consists of three interrelated areas: (1) financial management, which involves decisions within firms; (2) investment, which focuses on the decisions made by both individual and institutional investors as they choose securities for their investment portfolios; and (3) money and capital markets, which deals with securities markets and financial institutions.

Curriculum Design Philosophy

Finance, as an area of study, is designed to promote an analytical appreciation of the financial system and the financial decision-making process as determinants of the economic wealth of individuals, business firms, governments and countries.

The Finance curriculum concentrates on the broad university requirements. The emphasis of the university requirements mirrors our philosophy, in the School of Business and Management, that the purpose of higher education is for the promotion and education of our students through the dissemination of our accumulated knowledge of natural and social sciences. The emphasis on the common body of knowledge for business students attempts to make future finance professionals understand the concepts of assets' evaluation, investment and raising funds.

Admission and Requirements

Students must meet university general admission requirements and complete the common prerequisite courses listed in the catalog. Students can declare their major in Finance at the end of their sophomore year after they complete the business foundation courses. A grade point average of 2.5 or better is required in the business foundation courses for the student to be considered for this major.

Transfer students may be given a waiver for courses completed in the institution from which they are transferring. A minimum grade of B must be achieved in business courses in order for them to be considered as transfer credits to the

School of Business and Management. General university requirements may be transferred with a grade of C or better.

All B.S. Finance transfer students are required to take at least 30 upper-level credits towards their major requirements. Transfer credits for upper-division business courses are subject to validation by the appropriate School of Business department.

Program for Students Concentrating in Finance

In addition to university and School of Business and Management requirements, the following finance and economics courses are required for Finance majors:

Finance core:
(5 required courses, no substitutions permitted):

- FIN 302 Financial Markets and Institutions
- FIN 303 Investment Analysis
- FIN 402 Futures and Options
- FIN 404 Portfolio Management
- FIN 405 Advanced Financial Management

Finance Electives:
(Choose at least 5 courses from the following list: three courses in finance and two courses in economics)

- FIN 301 Financial Statement Analysis
- FIN 304 Real Estate Finance
- FIN 306 Insurance and Financial Planning
- FIN 394 Special Topics—Finance
- FIN 401 International Finance
- FIN 403 Commercial Banking
- ECO 301 Intermediate Microeconomics
- ECO 302 Intermediate Macroeconomics
- ECO 303 International Economics
- ECO 401 Public Economics
- ECO 409 Introduction to Econometrics
- ECO 480 Senior Seminar in Economics

Students may choose to take other courses as electives upon approval of the Dean. Furthermore, students may take more than five of these listed electives and use them as advised electives. A recommended set of courses is shown below for a representative student's four-year schedule. Electives are marked with an asterisk (*) to indicate that substitutions are possible.

Proposed Sequence of Study
Bachelor of Science in Finance

FIRST YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	COM 101	Academic Writing	3	EPT score 4 or COM 001	URE
	ECO 201	Principles of Microeconomics	3		CRE
	MTH 101	Mathematics for Business I	3		CRE
	BIS 201	Business Information Systems	3		CRE
	XXX	Advised elective	3		CRE
		Total	**15**		
Spring	ACC 201	Fundamentals of Financial Accounting	3	2nd semester (12 credit min.)	CRE
	COM 102	Writing & Reading Across the Curriculum	3	EPT score 5 or COM 101	URE
	MGT 201	Introduction to Management	3		CRE
	ECO 202	Principles of Macroeconomics	3		CRE
	MTH 102	Mathematics for Business II	3	MTH 101	CRE
	XXX	Advised elective	3		CRE
		Total	**15**		

Abbreviations: **URE**: University Requirement; **CRE**: College Requirement; **MR**: Major Requirement; **EPT**: English Placement Test; *: Substitutions are possible

SECOND YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	ACC 202	Fundamentals of Managerial Accounting	3	ACC 201	CRE
	COM 204	Advanced Academic English	3	COM 102	URE
	*ECO 301	Intermediate Microeconomics	3	ECO 201 & 202	MRE
	MIS 201	Fundamentals of MIS	3	BIS 201	CRE
	QAN 201	Introduction to Statistics	3		URE, CRE
		Total	**15**		
Spring	COM 225	Global Business Communication	3	Any COM 200 Level	CRE
	FIN 201	Fundamentals of Financial Management	3	ACC 201 & QAN 201	CRE
	MKT 201	Fundamentals of Marketing	3	ECO 201 & 202	CRE
	QAN 202	Quantitative Analysis for Decision Making	3	QAN 201	CRE
	XXX	Advised elective	3		CRE
		Total	**15**		

THIRD YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	COM 208	Public Speaking	3	COM 102	URE
	*FIN 401	International Finance	3	FIN 201	MR
	FIN 302	Financial Markets & Institutions	3	FIN 201	MR
	FIN 303	Investment Analysis	3	FIN 201	MR
	XXX	Advised elective	3		CRE
		Total	**15**		
Spring	*FIN 304	Real Estate Finance	3	FIN 201	MR
	*FIN 306	Insurance and Financial Planning	3	FIN 201	MR
	LAW 301	Business Law	3		CRE
	XXX	Advised elective	3		CRE
	XXX	Advised elective	3		CRE
		Total	**15**		

FOURTH YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	FIN 402	Futures and Options	3	FIN 303	MR
	*FIN 403	Commercial Banking	3	FIN 302	MR
	XXX	Advised elective	3		CRE
	XXX	Advised elective	3		CRE
	XXX	Advised elective	3		CRE
		Total	**15**		
Spring	FIN 404	Portfolio Management	3	FIN 303 & QAN 202	MR
	FIN 405	Advanced Financial Mgt.	3	FIN 303 & QAN 202	MR
	*ECO 302	Intermediate Macroeconomics	3	ECO 201 & ECO 202	MR
	MGT 406	Business Policy & Strategy	3		CRE
	XXX	Advised elective	3		CRE
		Total	**15**		

Proposed Sequence of Study
Majoring in Finance and Minoring in Accounting

FIRST YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	COM 101	Academic Writing	3	EPT score 4 or COM 001	URE
	ECO 201	Principles of Microeconomics	3		URE
	MTH 101	Mathematics for Business I	3		URE
	BIS 201	Business Information Systems	3		URE
	XXX	Advised elective	3		CRE
		Total	**15**		
Spring	ACC 201	Fundamentals of Financial Accounting	3		CRE
	COM 102	Writing & Reading Across the Curriculum	3	EPT score 5 or COM 101	URE
	MGT 201	Introduction to Management	3	2nd semester (12 credits min.)	CRE
	ECO 202	Principles of Macroeconomics	3		URE
	MTH 102	Mathematics for Business II	3	MTH 101	CRE
		Total	**15**		

SECOND YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	ACC 202	Fundamentals of Managerial Accounting	3	ACC 201	CRE
	COM 204	Advanced Academic English	3	COM 102	URE
	*ECO 301	Intermediate Microeconomics	3	ECO 201 & 202	MR
	MIS 201	Fundamentals of MIS	3	BIS 201	CRE
	QAN 201	Introduction to Statistics	3		URE
		Total	**15**		
Spring	COM 225	Global Business Communication	3	COM 203 or COM 204	CRE
	FIN 201	Fundamentals of Financial Management	3	ACC 201, QAN 201	CRE
	MKT 201	Fundamentals of Marketing	3	ECO 201 & 202	CRE
	QAN 202	Quantitative Analysis for Decision Making	3	QAN 201	CRE
	XXX	Advised elective	3		CRE
		Total	**15**		

THIRD YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	ACC 301	Intermediate Accounting I	3	ACC 202	MR
	COM 208	Public Speaking	3	COM 102	URE
	*FIN 401	International Finance	3	FIN 201	MR
	FIN 302	Financial Markets & Institutions	3	FIN 201	MR
	FIN 303	Investment Analysis	3	FIN 201	MR
		Total	**15**		
Spring	ACC 302	Intermediate Accounting II	3	ACC 301	MR
	*FIN 304	Real Estate Finance	3	FIN 201	MR
	*FIN 301	Financial Statements Analysis	3	ACC 201, FIN 201	MR
	LAW 301	Business Law	3		CRE
	XXX	Advised elective	3		CRE
		Total	**15**		

FOURTH YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	ACC 303	Cost Accounting	3	ACC 202	MR
	FIN 402	Futures & Options	3	FIN 303	MR
	*FIN 403	Commercial Banking	3	FIN 302	MR
	XXX	Advised elective	3		CRE
	XXX	Advised elective	3		CRE
		Total	**15**		
Spring	FIN 404	Portfolio Management	3	FIN 303, QAN 202	MR
	FIN 405	Advanced Financial Management	3	FIN 303, QAN 202	MR
	*ECO 302	Intermediate Macroeconomics	3	ECO 201, ECO 202	MR
	MGT 406	Business Policy & Strategy Capstone	3	Senior standing	CRE
	XXX	Advised elective	3		CRE
		Total	**15**		

Abbreviations: **URE**: University Requirement; **CRE**: College Requirement; **MR**: Major Requirement; **EPT**: English Placement Test; *****: Substitutions are possible

Bachelor of Science in Management Information Systems (B.S.M.I.S.)

Mission of the M.I.S. Program

The Management Information Systems (M.I.S.) program is dedicated to preparing successful graduates for professional business careers emphasizing the application of information technology to business processes and to engaging in service and research which serve the information technology needs of the global society, in general, and the Gulf region, in particular.

Information Systems is the study of computer technologies, human cognition and scientific principles directed to the design, implementation and management of information systems. The discipline includes technical components such as computer programming, system design, telecommunications, database management systems and computer graphics as well as humanistic components such as human information processing, human factors in system design and human-computer interaction. Management Information Systems analyzes the significance of information in problem solving, investigates how to collect information, understands the need to validate information and evaluate information sources, appreciates the importance of sharing information with others, and determines how to utilize information in problem solving and decision making.

The problems solved by information systems graduates come from many disciplines: mathematics, economics, business, engineering, linguistics and psychology, to name a few. As an information systems professional working on a problem in one of those areas, one must be knowledgeable in that discipline as well as in the capabilities and uses of computers. The successful information systems professional must possess considerable communication skills and must be able to learn new ideas quickly and adapt to ever-changing conditions to satisfy the needs of the users.

Why Management Information Systems

In the last three decades we have witnessed immense developments in computers and information technologies. The rate of new technical advances in recent years shows no signs of diminishing. The following are worth mentioning: the implementation of microchip technology, the mass production of microcomputers, the reduction in the cost of manufacturing memories and processors, the development of distributed systems, parallel processors and database systems, the convergence of computing systems and telecommunications with the growth of LANs, WANs, MANs and Internet, and the increasing availability and power of software packages. These technical advances have brought computer-based data processing, word processing, on-line marketing, process monitoring, information resource sharing and managerial decision making to many more organizations than before. Presently, the task of information processing permeates the whole of each organization; the data processing department is ceasing to be its separate autonomous part; more and more managers are turning to information services to assist their decision making; more and more complex application systems, often using databases or knowledge bases, such as computer-integrated manufacturing, group decision support systems, automatic learning and diagnostic systems, are being introduced every day.

The rapid expansion of computer technology and the increasing complexity of information systems generate a need for more sophisticated and effective methods of structuring information for purposes of storage, analysis and retrieval. This requires information systems professionals to be aware of the opportunities and problems resulting from the application of computer technology and capable of understanding both the information needs of managers, administrators and other end-users and the information needs of designing the appropriate computer-based systems. Accordingly, the information analyst and system designer can no longer be regarded as technical experts only; in addition to having a professional knowledge and command of information technology, they must understand the basic needs of the organization in which they operate and of the users of the information systems which they develop.

Goals of the M.I.S. Program

- Provide M.I.S. graduates with a curriculum that prepares them with the technical skills and conceptual knowledge necessary to succeed in an information systems career.
- Continuously improve students' skills and knowledge of emerging information systems approaches and technologies that have been identified and targeted for future development.
- Provide service courses to students in the school and the university that are appropriate for the business core and for students seeking general knowledge of the applications of information systems in business.

- Involve the faculty with the placement of students through contacts with potential employers, serving as references for students and advising students on job-search skills.
- Enhance faculty interaction with information systems professionals to identify conceptual knowledge, technical skills and instructional methods appropriate for information systems careers.
- Encourage faculty to engage in applied research in emerging technologies and approaches and publications of instructional development applied to the M.I.S. curriculum.

Objectives of the M.I.S. Program

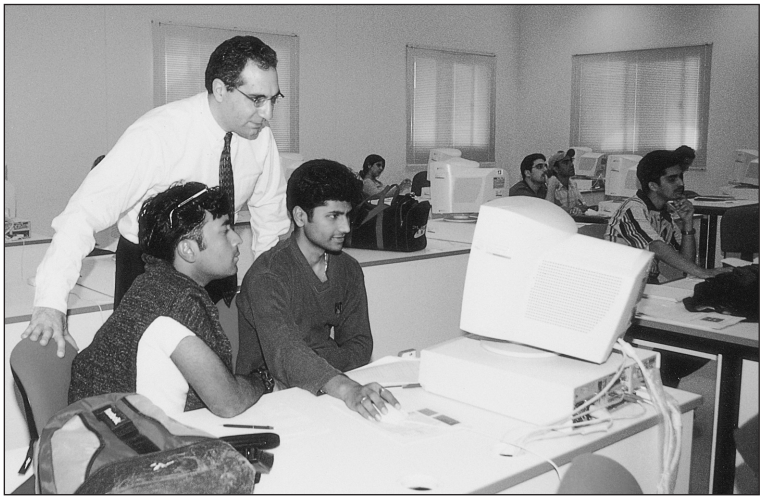
The objectives of the program are to prepare the student to:

- Understand and plan for the use of current and emerging information technologies.
- Develop a broad perspective of the integration of information technology in all functional areas of business.
- Understand how to exploit information technology as a strategic resource.
- Develop technical and managerial skills in management information systems.
- Integrate quality and continuous improvement concepts into information systems management.
- Understand ethical issues related to the use of information technology.

M.I.S. Curriculum Outcomes

A successful graduate of the M.I.S. program should be able to:

- Create an application in a structured programming language to manipulate business data files using structured programming techniques.



- Create windows applications in an object-oriented programming language including the development of user interfaces, use of controls, writing/debugging code and the creation of interactive menus.
- Apply data modeling techniques (such as normalization and ER diagramming) to create a database model.
- Implement a database model in a relational database management system (such as ORACLE) including the creation of tables, establishing referential integrity constraints, loading data, creating views and producing forms and reports using database.
- Design and administer a local area network including the creation of users, installation of software, establishment of security constraints, configuration of print services and configuration of clients.
- Configure a web server and design a web site.
- Select and apply appropriate systems analysis and design techniques to create a system design for a business process including systems development planning, requirements determination and analysis, and data/process modeling.
- Use modern application development products as prototyping tools in the systems development process.
- Develop software applications for solving business problems by completing a development project from initial requirements gathering to implementation.
- Research emerging IS technologies and present recommendations to managers about the impact of those technologies on a business.
- Design and implement web-based, interactive groupware applications to support collaboration and to support access, tracking, sharing and organization of information across time and space.
- Apply telecommunication concepts to create wide-area network designs and communicate those designs to managers in both written and oral form.

Unique Features of the Program

The curriculum is designed to be responsive to the rapidly changing role of information technology in the business environment. Courses cover current topics including: object-oriented analysis, design, programming, client server applications, using

telecommunications for competitive advantage, electronic commerce, data mining and data warehousing, and technical and managerial issues related to the Internet and corporate intranets. Advanced courses are designed for students who have completed the core and will challenge students to critically analyze issues faced by technology managers.

Unique features of a B.S.M.I.S. at AUS:

- Active learning methods that enhance development of critical thinking abilities. The program curriculum places great emphasis on methods and skills of inquiry, analysis, judgment and decision making.
- Courses that better integrate and reinforce general education requirements. The curriculum integrates, by extension and reinforcement in the M.I.S. field, the content and skills learned in basic courses (e.g., English, Psychology, Accounting, Marketing, Economics).
- A conceptual framework that cuts across functional areas. Courses in the M.I.S. curriculum are organized with an integrated conceptual structure common to all aspects of the discipline. This conceptual structure emphasizes the utility of information, together with information production and dissemination given various uses.
- Better development and improvement of students' interpersonal and communication skills. These skills are reflected in the fabric of the curriculum through the use of team projects and written and oral reports.
- Greater integration of research findings into the curriculum. M.I.S. courses include knowledge gained through current research and related implications for the practice in the information technology field.
- A working partnership between academe and practice is encouraged. The goal is to enable a continuous focus on the practical relevance of the educational process as well as a richer and more contemporary flavor to the content of course materials.

What do Information Systems professionals actually do?

- Manage technical information centers
- Evaluate and select software and hardware
- Develop and maintain advanced systems for information storage, retrieval and distribution
- Provide information in response to direct questions from other professionals such as: scientists, executives, administrators, attorneys and medical personnel

Curriculum Design Philosophy

This curriculum design emphasizes the broad university requirements, the common body of knowledge for business students specified by accrediting entities and hands-on training and practice of specialized computer skills and information technologies. The emphasis of the university requirements reflects our philosophy in the School of Business and Management that the purpose of higher education is for the promotion and the education of our students through the dissemination of our accumulated knowledge of natural and social sciences. The emphasis on the common body of knowledge for business students attempts to make future information systems professionals understand the information needs of managers and other end-users, understand the linkages between information processes and other managerial processes and be aware of the ways to achieve overall organizational efficiency through designing effective information systems. The emphasis upon hands-on training and practice reflects our desire that students who complete this degree program must have working knowledge and skills in analyzing, designing, implementing and deploying information systems. These important issues will greatly differentiate the Management Information Systems program from the computer science program and better match the increasing needs of a large number of businesses and public organizations. The rule of thumb used in designing this curriculum is that a course selected must either strengthen students' natural and social science knowledge or improve their working knowledge of information systems design, analysis and implementation as it relates to the field of business.

Admission and Requirements

Students wishing to declare a major in Management Information Systems may do so at the end of their sophomore year after demonstrating a high level of academic achievement in their business foundation courses. Students must apply, in writing, to the Director of the M.I.S. program by no later than the first week of May of their sophomore year. Usually a minimum Grade Point Average of 2.5 is required in the business foundation courses in order to be considered for this major.

For further information regarding admission, please refer to the School of Business and Management section on admission requirements on page 111 of this catalog.

Proposed Sequence of Study

Bachelor of Science in Management Information Systems

FIRST YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	COM 101	Academic Writing	3	EPT score 4 or COM 001	URE
	ECO 201	Principles of Microeconomics	3		URE
	BIS 201	Business Information Systems	3		URE
	MTH 101	Mathematics for Business I	3		URE
	XXX	Advised elective	3		CRE
		Total	**15**		
Spring	ACC 201	Fundamentals of Financial Accounting	3		CRE
	MGT 201	Introduction to Management	3	2nd semester (12 credits min.)	CRE
	ECO 202	Principles of Macroeconomics	3		CRE
	MTH 102	Mathematics for Business II	3	MTH 101	CRE
	XXX	Advised elective	3		CRE
		Total	**15**		

SECOND YEAR (31 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	ACC 202	Fundamentals of Managerial Accounting	3	ACC 201	CRE
	COM 204	Advanced Academic English	3	COM 102	URE
	MIS 201	Fundamentals of MIS	3	BIS 201	CRE
	QAN 201	Introduction to Statistics	4		URE
	XXX	Advised elective	3		CRE
		Total	**16**		
Spring	COM 225	Global Business Communication	3	COM 203 or COM 204	URE
	FIN 201	Fundamentals of Financial Management	3	QAN 201, ACC 201	CRE
	MKT 201	Fundamentals of Marketing	3	ECO 201, ECO 202	CRE
	QAN 202	Quantitative Analysis for Decision Making	3	QAN 201	CRE
	XXX	Advised elective	3		CRE
		Total	**15**		

THIRD YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	MIS 202	Advanced MIS	3	MIS 201	MR
	COM 208	Public Speaking	3	COM 102	URE
	MIS 301	Fundamentals of Database Mgt.	3	MIS 201	MR
	XXX	Advised elective	3		CRE
	XXX	Advised elective	3		CRE
		Total	**15**		
Spring	MGT 301	Organizational Behavior	3	MGT 201	CRE
	LAW 301	Business Law	3		CRE
	MIS 303	Introduction to Systems Analysis	3	MIS 201	CRE
	MIS 302	Advanced Database Mgt.	3	MIS 301	CRE
	XXX	Advised elective	3		CRE
		Total	**15**		

FOURTH YEAR (30 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	MGT 380	Project Management	3	ACC 202, MIS 201, MGT 301	CRE
	MIS 401	Business Data Communications	3	MIS 201, BIS 201	CRE
	MIS 402	Knowledge Management & Expert Systems	3	MIS 201, BIS 201	CRE
	XXX	Advised elective	3		CRE
	XXX	Advised elective	3		CRE
		Total	**15**		
Spring	MGT 406	Business Policy & Strategy – Capstone	3	Senior standing	CRE
	MIS 403	Applied Systems Design	3	MIS 303	CRE
	MIS 404	Internet Business Applications	3	MIS 201	CRE
	XXX	Advised elective	3		CRE
	XXX	Advised elective	3		CRE
		Total	**15**		

Abbreviations: **URE**: University Requirement; **CRE**: College Requirement; **MR**: Major Requirement; **EPT**: English Placement Test

Master of Business Administration (M.B.A.)

The Master of Business Administration program (M.B.A), offered by the School of Business and Management, is a graduate-level degree program designed by the American University of Sharjah faculty working in close cooperation with the American University of Washington, D.C. Applicants are required to hold a baccalaureate degree from an accredited institution. The M.B.A. degree is conferred upon completion of a 30 to 48 credit hour program utilizing an evening schedule of classes. It is designed to prepare students for careers in management leadership in both the private and public sectors. Students will acquire a comprehensive foundation in the fundamentals of business, the global environment in which they will function and the analytical tools for intelligent decision making. Individual participation is emphasized through class discussions, interaction and cooperation with other students in the class.

Transfer credit may be accepted for admission to the M.B.A. program. A maximum of 18 credit hours from within the foundation courses may be transferred. Such a determination will be made on a case-by-case basis by the M.B.A. admissions committee.

Mission of the Program

The AUS M.B.A. program is committed to the idea of helping individuals in the Gulf region to think globally, act locally and integrate knowledge as the major tool of problem solving. The program is built on the premise that up-to-date expertise is what gives knowledge workers a value added capacity in a knowledge based economy.

Why you should apply to the AUS M.B.A. program

Before you embark on your graduate study, it is extremely important for you to study and investigate the institution where you want to study and do your graduate work. There are many institutions in the UAE and the Gulf region that offer M.B.A. programs. However, the quality of the institution directly impacts the value and quality of your degree, NOT all M.B.A. programs are created equally. For example, there are many institutions that are for profit and are public corporations listed on the stock exchange. These types of institutions are mainly interested in making a profit, not necessarily delivering the best quality programs. Other "foreign" institutions hire part-time faculty who would normally not be qualified to teach on their main campus. Therefore, before you attend any graduate programs, you should ask the following questions:

- How many full-time faculty does the school of business employ?
- Is the university affiliated with any other institution? If it is affiliated with another institution, how is that institution ranked?
- How many Ph.D. and other highly qualified faculty do they have on a full-time basis?
- Is the institution for profit (a profit making corporation), or a not for profit educational institution?
- Does the institution have a campus in the UAE?
- What type of support services does the institution provide the students?
- Where are the faculty educated?

The American University of Sharjah is affiliated with the American University in Washington, D.C., one of the most respected and highly ranked American institutions in the United States. The American University of Sharjah has over 160 full-time faculty, and the School of Business and Management has 26 full-time faculty members, most of whom are holders of a Ph.D. from the most reputed universities in the United States. AUS offers its students the highest level of support and services associated with their studies. AUS students have access to computer labs, massive amounts of electronic journals, books and databases, and most importantly the support of the full-time faculty and staff. Unlike other institutions, the only mission of AUS is to provide the best quality American education in the Arab World.

Goals and objectives of the M.B.A. program

- Provide the knowledge, skills and tools to enable the successful student to work effectively with others in a team environment
- Address throughout the curriculum a) that knowledge, systems and quality are the concepts that underlie all aspects of an organization's operation, and b) what quality means and how it can be incorporated into the organization
- Emphasize in every aspect of the curriculum that we are now part of a global economy
- Strengthen the oral and written communication skills of each student
- Provide students with the knowledge to put technology to work through the use of the world wide web, computer-based instruction (CBI), and state-of-the-art integrated software
- Develop in the students the ability to integrate the wide variety of skills and experience they bring into the M.B.A. program

The M.B.A. course structure

The degree is composed of 48 credit hours (16 courses). Eighteen credits (6 courses) comprise the "foundation" courses of the program and thirty credits (10 courses), including two (2) electives, comprise the "core" courses.

The M.B.A. program can be completed in 24 months, including summers, if all the foundation courses are required and 15 months if all the foundation courses are waived. A maximum of three courses can be completed each semester (fourteen-week period) and classes are held in the evening. Each class is offered one night per week for two hours and forty-five minutes.

Participants must attend all classes except in the case of a personal emergency. Students must be prepared to devote significant additional time for class preparation and assignments. Grading is on an A , B, C, F scale. A "B" average, 3.0, is required to graduate. Each student must complete the approved course of study within five years of the date of first registration for graduate study.

Foundation Courses

- MBA 601 Managerial Economics
- MBA 602 Managing People and Organizations
- MBA 603 Accounting Concepts and Applications
- MBA 604 Applied Managerial Statistics
- MBA 605 Financial Management
- MBA 606 Management Information Systems

Core Courses

- MBA 610 Business Research Applications
- MBA 611 Advanced Financial Management
- MBA 612 Leadership and Change
- MBA 613 Accounting for Management
- MBA 614 Marketing Management
- MBA 615 Innovation and Entrepreneurship
- MBA 616 International Electronic Commerce
- MBA 617 Ethics and Legal Issues
- MBA 618 Strategic Management in a Global Environment
- MBA 619 Capstone: A Diagnostic Practicum
- MBA xxx Advised Electives (2)

The minimum passing grade for each course in the M.B.A. program is C. A course can only be repeated twice if the original grade is below a C.

Waiver policy

Students may qualify to waive up to 18 credits (6 courses) from the foundation courses. As a general rule, a course may be waived if the student has completed comparable course work at the undergraduate level.

Waiver Rules:

Students may waive foundation courses: (1) if the courses have been taken in an approved business program, (2) if the courses were taken within three years from the time of admission to the AUS program, and (3) if the minimum grades were "B".

M.B.A. curriculum outcomes

A graduate of the M.B.A. program shall:

- Be able to develop a working environment where teamwork and team building are an integral part of the organization.
- Have a thorough grounding in the definition of quality and how to apply this concept to his/her organization.
- Be able to implement his/her communication skills in a way that enhances and presents effectively and convincingly his/her point of view.
- Be technically proficient in using state-of-the-art hardware and software for decision support and expert systems.
- Have developed diagnostic skills and the ability to apply concepts and theories to concrete, real life situations.

Unique Features of the M.B.A.

- A delivery format that will allow the student to earn a master's degree without interrupting his/her career.
- The student will develop an understanding of the full range of business disciplines, enhancing the skills required for career advancement.
- Use of sophisticated new business tools in a state-of-the-art environment.
- Our M.B.A. website provides easy access to assignments and professors from the comfort of home. This will accommodate all students and particularly those attending from other Emirates or countries.
- Participants will benefit from the extensive use of the Internet, interactive learning and project work to assist with the comprehension of concepts.

Admission to the M.B.A.

Admission to the M.B.A. Program is on a case-by-case basis. Applicants must show proof of their ability to do collegiate level work. An undergraduate degree from either a U.S. or U.K. accredited university or college with a grade point average of 3.0 or above would be an indicator of such ability. Under all other circumstances a standardized examination, such as the GMAT and/or the TOEFL, may be required and may be administered locally.

The Executive Master of Business Administration (E.M.B.A.)

For the professional manager today a credible E.M.B.A. is more than an academic degree. It is evidence of specialized knowledge, a sign of recognition by the profession and an indication of commitment to continued learning. The E.M.B.A. today is a gateway to corporate leadership.

Managers without an M.B.A. often find themselves on the defensive today. They enroll in increasing numbers in the many M.B.A. program options available to them. Needless to say, such options vary in philosophy, objectives, styles, curricula and quality.

The AUS E.M.B.A. has been uniquely designed by the American University of Sharjah faculty working in close cooperation with the American University of Washington, D.C. The courses are taught mainly by full-time faculty members of the AUS School of Business and Management.

The AUS E.M.B.A. is committed to the idea of helping managers in the Gulf region to think globally, act locally and integrate knowledge as the major tool of managerial problem-solving.

The AUS E.M.B.A. is built on the premise that up-to-date expertise is what gives knowledge-workers a value added capacity in a knowledge-based economy. It addresses itself to organizations and individuals convinced that intellectual capital is the real basis for competitiveness today.

The program uses instructional technology and is highly interactive in nature. It provides participants with a rigorous, though relaxed, learning environment and a chance to team up and build long-lasting alliances with colleagues.

The fundamental force driving today's business is the rapidly accelerating rate of technological changes. Many corporations, institutions, even governments, have failed in this rapidly evolving business environment. How quickly one recognizes change and reacts to the new market forces will define who succeeds or fails in modern business.

Why the "EXECUTIVE" in E.M.B.A.?

Several key facts in the design of this E.M.B.A. make it the appropriate choice for working executives:

- Career, family and a multitude of other factors are vying for the executive's time. The E.M.B.A. program is demanding, but the E.M.B.A. takes no more than 15 to 24 months to complete utilizing a schedule of alternate weekends and quarterly breaks that allows ample time for work, family and recreation.
- Tomorrow's leaders will need to access and use both information and technology. Our E.M.B.A. enables the executive to use technology not only to access current information but also to analyze that information in order to make sound business decisions.
- Business is constantly changing. Traditional business programs are not designed to cope with this new environment. We have designed our E.M.B.A. to ensure that the experience of our participants, the expertise of our faculty and the resources of our affiliate universities are fully utilized. The concepts learned and cases studied relate to the current business environment.
- Most adults learn best in an interactive, experiential environment with a variety of teaching methodologies. Our primary objective is to guarantee the success of each participant. We utilize every available resource to ensure that we consistently meet that objective. The extensive use of case studies, video, Internet, interactive learning, computer-based learning, project work and practical application will ensure appropriate application of principles and solidify comprehension of concepts.

Program Delivery

The E.M.B.A. program at AUS utilizes both traditional and innovative methods of teaching and participation. International learning resources will be tapped in a manner that will maximize their applicability to the local management community. Access to assignments and professors by e-mail will accommodate all students and particularly those attending from other Emirates or countries.

Participants in the program are required to attend the classes at AUS but will also utilize computer-based instruction (CBI) provided by AUS to supplement the classroom lectures. The participants will utilize the Internet to collaborate with their classmates and faculty. In some cases, videotapes will be available to supplement the lectures.

Since each course taught at the E.M.B.A. level requires significant use of CBI, Internet and video technologies, all students are required to have access to a P.C. and the Internet.

Program Design

The degree is composed of 48 credit hours (16 courses). Eighteen credits (6 courses) comprise the "foundation" courses of the program and thirty credits (10 courses) form the "core" courses.

The E.M.B.A. program can be completed in 24 months if the foundation courses are required and in 15 months if the foundation courses are waived. Two courses are completed each quarter (ten-week period) and classes are held every other weekend. Each year contains four quarters, usually with a four week break between each quarter.

The participants selected for the E.M.B.A. program must have significant business experience. Therefore, the courses are taught in such a manner as to draw upon and extend the experience of the participants as well as the expertise of the faculty. The cohort approach ensures that concepts are systematically delivered thereby maximizing the value of in class time.

The courses utilize the case method approach. In this manner, the participants not only acquire needed business skills, but also apply them through the extensive use of simulated business cases.

Foundation Courses

The foundation courses are designed to provide the participants, who do not have a formal business education, with the basic tools and concepts that will be utilized in the core courses. Participants may waive out of the foundation courses if they have completed a degree in business from an accredited institution during the past five years, and/or pass a comprehensive examination administered by the School of Business and Management.

The foundation courses are:

- Economic Analysis in an Interdependent Environment
- Theories of Management and Organizational Behavior
- Financial Management I (Accounting)
- Information Systems Strategy
- Financial Management II (Finance)
- Marketing Management

Core Courses

The core courses represent the advanced business courses that the participants will need to successfully complete the E.M.B.A. These courses also utilize case studies, group projects and a hands on participatory approach to enhance the learning process. For example, executives will not only learn the latest theories and methods of E-Commerce, but must also demonstrate their understanding of the technology by setting up an on-line store accessible via the World Wide Web.

The core courses are:

- Analytical Methods
- Corporate Finance
- Management in the International Environment
- Investment Analysis
- Advanced Systems Strategy and Implementation
- Entrepreneurship
- E-Commerce
- Corporate Communication Strategy
- Strategic Management
- Capstone: A Diagnostic Practicum

Admission to the E.M.B.A.

The AUS E.M.B.A. is designed for experienced managers and admission is highly competitive. Each cohort in the program is made up of 15-25 members, representing various organizations.

The admission review takes into consideration academic and employment information, giving special attention to professional accomplishments and potential for growth within an organization. Most participants have earned Bachelor's degrees. Some hold advanced degrees in other fields. All have demonstrated an ability to sustain intensive, graduate-level work.

To be eligible for admission, an applicant must satisfy the following requirements:

- Hold a Bachelor's degree from an AUS recognized college or university
- Obtain a TOEFL score of 550 or above
- Demonstrate appropriate management experience

Applicants must submit the following documents:

- A resume
- Two letters of recommendation
- Passport photocopy
- Two passport size photos
- Copy of degree plus transcript of grades
- TOEFL score, if available
- Application fee

Processing of applications follows several steps including verification of academic credentials and work experience. Important considerations in the evaluation of applicants include: level of management experience, maturity, motivation and commitment to completing the program. The E.M.B.A. selection committee will make the final determination of applicants.

Applicants who are notified of their admission to the program will be required to pay a 9,000 Dirhams non-refundable deposit to secure a seat in the program. This deposit will be applied to the total cost of the first three quarters of the program. If the deposit is not received within two weeks of acceptance, the position may be passed to the next successful candidate.

For admission or other information, contact:

Continuing Education Center
American University of Sharjah
P.O. Box 26666
Sharjah, United Arab Emirates
Tel: 00971 (6) 5055023
Fax: 00971 (6) 5055020
E-mail: edu_center@aus.ac.ae

School of Engineering

Dean
Donald McDonald

Associate Dean
Louis J. Everett

The School of Engineering of the American University of Sharjah blends the best North American educational methods with the best practices used by the finest institutions in Europe and the Middle East. The engineering program at AUS is innovative. Conceived to meet the needs of the region's future, the AUS program is also designed to satisfy the engineering accreditation requirements currently in force in the United States. The program emphasizes learning the effective use of technology, information resources and communication methods. The program aims to instill in its graduates leadership qualities anchored in moral and ethical principles.

The AUS engineering graduate will be well equipped to face the future. An engineering degree gives its holder access to a learned profession with opportunity for practice in industry, government, business or consulting. Many do not realize, however, that an engineering education can also become the foundation for other career objectives, including graduate study to prepare for a career in research, development or teaching. Finally, an engineering education keeps many other avenues open such as law, business, medicine and public service.

Graduates of the School of Engineering at the American University of Sharjah will be prepared to achieve their personal and professional aspirations. They also will be well qualified to continue their studies and professional education toward a master's or doctoral degree in their chosen fields.

It is apparent that future graduates will work in an international and very competitive environment. Graduates therefore must achieve English fluency even if they intend to spend their careers in their native lands. English fluency is especially critical as more and more multinational corporations adopt English as their corporate language. Hence, AUS emphasizes the use of English in daily practice. Not only are all classes conducted in English all interactions between staff and students in engineering are conducted in the English language, primarily to enhance the international communication skills of our graduates.

The School of Engineering offers programs in chemical engineering, civil engineering, computer engineering, electrical and electronic engineering and mechanical engineering. It is the aim of the engineering faculty to offer an educational experience that is equivalent to those offered by the best state and private universities in the United States and Europe.

Engineering is an excellent choice for young men and women who aspire to well-paid careers in which they can be empowered to make a contribution to society and humankind in general. Those who enter engineering today can look forward to rewarding careers which offer personal fulfillment, service to humanity and economic prosperity.

Faculty

The School of Engineering faculty members are distinguished experts in their fields. These scholars and teachers are academic and professional practitioners. They provide an educational environment in which students can mature professionally and personally while preparing to live and work in a technologically rich global community.

Professor

Azm Al Homoud (Civil Engineering)
Abdulrahim El-Keib (Electrical Engineering)
Imadeldin Mahgoub (Computer Engineering)

Associate Professor

Yousef Al Assaf (Electrical Engineering)
Hasan Al Nashash (Electrical Engineering)
Louis J. Everett (Mechanical Engineering)
Mohammad Jarrah (Mechanical Engineering)
Joseph Richardson, (Civil Engineering)
David N. Sawyer (Chemical Engineering)
Sami W. Tabsh (Civil Engineering)

Assistant Professor

Akmal S. Abdelfateh (Civil Engineering)
Rached Dhaouadi (Electrical Engineering)
Hany El-Kadi (Mechanical Engineering)
Ahmad Hamad (Chemical Engineering)
Hamdy A. Kandil (Mechanical Engineering)
Marwan Khraisheh (Mechanical Engineering)
Nasser N. Qaddoumi (Electrical Engineering)

Admission and Requirements

Formal admission to a major in all the programs of the School of Engineering requires a cumulative grade point average (GPA) of 2.0.

University Graduation Requirements

In order to qualify for graduation, all engineering students must complete a minimum of 140 credit hours with a cumulative GPA of 2.0 or better, including:

- Prescribed courses that ensure the satisfaction of university requirements
- Major requirements that include courses in mathematics, sciences, engineering topics and design that ensure preparation for professional practice
- Summer Practicum (one summer, after either the second or third year, working in a professional environment)

Engineering students must achieve a grade of C- or better in every engineering course in the major.

Bachelor of Science in Engineering

The School of Engineering offers a B.S. degree in each of the following:

- Chemical Engineering (B.S.Ch.E.)
- Civil Engineering (B.S.C.E.)
- Computer Engineering (B.S.Co.E.)
- Electrical and Electronic Engineering (B.S.E.E.)
- Mechanical Engineering (B.S.M.E.)

To obtain a B.S. in engineering, a student must complete 140 credit hours. The program is designed for completion in four years including one summer session (6-weeks) of study. Students are also required to complete one summer internship. Students whose preparation requires the completion of preparatory courses in mathematics, chemistry, English and physics will require up to one additional year to complete the engineering program. Even without preparatory courses, many students take additional time to complete their programs.

The B.S. requirements are divided into four categories: university graduation requirements, college requirements, program specialization courses and elective courses that provide depth in a subspecialty in a chosen field. The university requirements include foundation courses in mathematics, science, the humanities, social sciences, Arabic and English language and literature. By the end of the third year, most compulsory requirements should typically be fulfilled. Students are also required to complete a major design project during the final year. Practical training in an engineering environment is compulsory for one summer. This practicum or internship strengthens the student's preparation for engineering practice.

The School of Engineering is committed to a program of total quality management. Students must master basic concepts to effectively develop their engineering foundation. Therefore, at the end of the second year of study, students complete a comprehensive diagnostic examination. This exam measures learning outcomes in foundation courses, including mathematics, sciences, engineering sciences and statistics. The results of the examination are used to counsel individual students; the data are also needed for the continuous enhancement of the curriculum, thus helping to ensure maximum learning effectiveness in foundation courses. The examination is given approximately two weeks prior to the end of the second year. Students are not admitted to third year courses until they have completed this examination. A similar examination, used for assessment purposes, is conducted before graduation.

Students may not enroll in any of the engineering foundation courses unless they have been fully admitted to the School of Engineering.

The School of Engineering uses the credit hour system. One credit hour is commonly equivalent to either a one-hour lecture or three hours of laboratory work per week. The three-credit hour foundation courses in the engineering sciences commonly meet for two hours of formal lecture and three hours of active learning during each week. The academic year is divided into two semesters and a short summer semester.

Bachelor of Science in Chemical Engineering (B.S.Ch.E.)

Chemical engineers have many different responsibilities including development, design supervision, production or sales. They may manage the development of new technologies and products or strive to develop safe processes that yield desired results economically. Chemical engineers also direct the design, construction and operation of new plants, ranging from pilot plants to full scale complex chemical facilities.

Chemical engineers today are making unparalleled contributions in chemical processing, petroleum refining, pollution control and

abatement, materials processing, bio-chemical and bio-medical engineering, computer automation, process control and modeling, food processing, systems engineering and manufacturing. To teach students aspiring to enter this field, the American University of Sharjah has designed a chemical engineering program that meets the challenges of the twenty-first century.

The Division of Chemical, Thermal and Mechanical Engineering offers a general four-year program leading to a Bachelor of Science in Chemical Engineering (B.S.Ch.E.) degree. This degree prepares graduates to work in all areas of the chemical industry. Specifically, it is designed to help students develop a basic knowledge in science, in engineering and in the fundamentals and practical knowledge of thermodynamics, fluid flow, heat transfer, mass transfer, reaction engineering, unit operations, process control, process simulation, plant design, cost estimation and engineering economics. The first year provides the necessary background in physics, chemistry, engineering and mathematics. The second year of study is devoted to the foundation of the student's major field of engineering. The third and fourth years are devoted to enabling the student to achieve mastery and competence in the profession of chemical engineering.

The B.S.Ch.E. requires four years of university studies. The program is intended to prepare its graduates for world-wide practice. Therefore, the program is designed to satisfy the general university requirements, fulfill the program criteria adopted by the Accreditation Board for Engineering and Technology (ABET) of the United States and also meet the needs of the engineering profession in the United Arab Emirates and the region.

University Graduation Requirements for B.S.Ch.E.

A total of 140 credit hours, including the following courses:

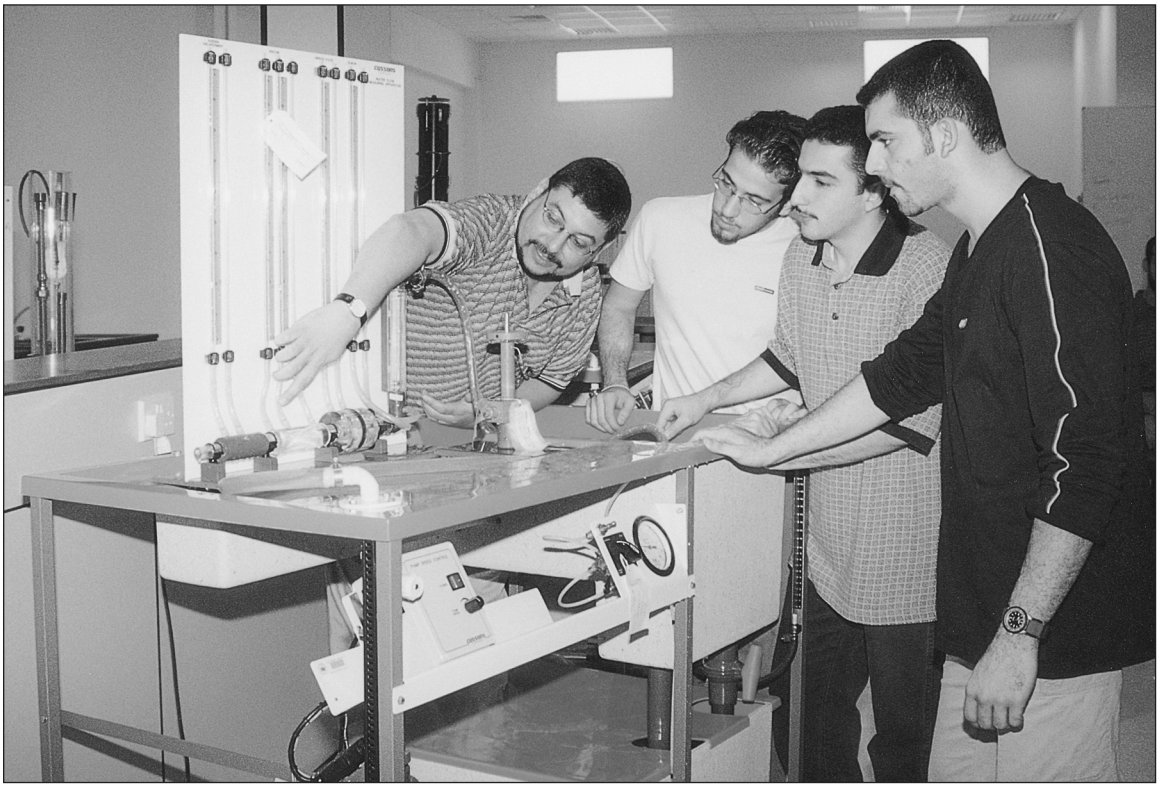
University Requirements

- ARA XXX Arabic Language
- CHM 101 General Chemistry I
- PHY 101 General Physics I
- COM 208 Public Speaking
- COM XXX English Language (four courses)
- H&SS XXX Humanities and Social Sciences (four courses)
- MTH 103 Calculus I
- Statistics*
- Computer Literacy*

** These university required competencies may be satisfied through designated courses in engineering as well as through extensive use of computer resources throughout the curriculum.*

Major Requirements

- CHE 204 Chemical Engineering Thermodynamics I
- CHE 205 Principles of Chemical Engineering I
- CHE 206 Principles of Chemical Engineering II
- CHE 207 Fluid Flow
- CHE 210 Introduction to Chemical Engineering
- CHE 301 Heat Transfer
- CHE 305 Chemical Engineering Thermodynamics II
- CHE 321 Chemical Reaction Engineering
- CHE 324 Process Design I
- CHE 325 Separation Processes I
- CHE 325L Separation Processes I
- CHE 326 Separation Processes II
- CHE 326L Separation Processes II
- CHE 332 Cost Estimation and Economics
- CHE 413 Separation Processes III
- CHE 413L Separation Processes III
- CHE 421 Process Control
- CHE 430 Computer Methods in Chemical Engineering
- CHE 432 Process Design II
- CHE 433 Instrumental Analysis
- CHE 498 Design Project I
- CHE 499 Design Project II
- CHE XXX Technical Elective I
- CHE XXX Technical Elective II
- CHM 102N General Chemistry II
- CHM 215 Organic Chemistry I
- CHM 216 Organic Chemistry II
- CHM 216L Organic Chemistry II
- CHM 331 Physical Chemistry
- CHM 335 Physical Chemistry
- MTH 104 Calculus II
- MTH 203 Calculus III
- MTH 205 Differential Equations
- NGN 225 Electrical Circuits and Devices
- NGN 110 Introduction to Engineering I
- NGN 111 Introduction to Engineering II
- NGN 211 Introduction to Engineering III
- NGN 231 Material Science



Proposed Sequence of Study

B.S. in Chemical Engineering

FIRST YEAR (36 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	CHM 101	General Chemistry I	4		MR/URE
	PHY101	General Physics I	4		MR/URE
	COM 101	Academic Writing	3	EPT score 4 or COM 001	URE
	MTH 103	Calculus I	4		MR/URE
	NGN 110	Introduction to Engineering I	2		MR/URE
		Total	**17**		
Spring	CHM 102N	General Chemistry II	4		MR
	COM 102	Writing and Reading Across the Curriculum	3	EPT score 5 or COM 101	URE
	MTH 104	Calculus II	4		MR/URE
	NGN 111	Introduction to Engineering II	2	NGN 110	MR/ URE
	NGN 231	Material Science	3	CHM 101	MR
	ARA XXX	Arabic Language	3	COM 102	URE
		Total	**19**		

SECOND YEAR (40 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	CHE 205	Principles of Chemical Engineering I	2	CHM 102	MR
	COM XXX	Communications III	3	COM 102	URE
	MTH 203	Calculus III	4		MR
	CHE 210	Introduction to Chemical Engineering	2	NGN 111	MR
	CHM 215	Organic Chemistry I	3		MR
	HUM XXX	Humanities elective	3	COM 102	URE/ELC
		Total	**17**		
Spring	CHE 206	Principles of Chemical Engineering II	2	CHE 205	MR
	CHE 204	Chemical Engineering Thermodynamics I	3	PHY 101	MR
	CHM 216	Organic Chemistry II	3		MR
	CHM 216L	Organic Chemistry lab.	1		MR
	COM XXX	Communication IV	3	COM 102	URE
	MTH 205	Deferential Equations	3		MR
	NGN 211	Introduction to Engineering III	2	CHE 210	MR/URE
		Total	**17**		
Summer	CHE 207	Fluid Flow	3	PHY 101, MTH 104	MR
	HUM XXX	Humanities elective	3	COM 102	URE/ELC
		Total	**6**		

THIRD YEAR (34 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	CHE 301	Heat Transfer	3	CHE 204, CHE 207 or NGN 241	MR
	CHE 325	Separation Process I	2	CHE 206, CHE 207	MR
	CHE 325L	Separation Process I lab.	1	Co: CHE 325	MR
	CHM 331	Physical Chemistry	3		MR
	CHM 335	Physical Chemistry lab.	2		MR
	CHE 305	Chemical Engineering Thermodynamics II	3	CHE 204, CHE 206	MR
	COM 208	Public Speaking	3	COM 102	URE
		Total	**17**		
Spring	CHE 306	Chemical Processes	2	CHM 215 or CHM 222, CHE 206	MR
	CHE 321	Chemical Reaction Engineering	3	CHM 331, CHE 305 and Co: CHM 335	MR
	CHE 326	Separation Process II	3	CHE 206, CHE 301, CHE 305	MR
	CHE 326 L	Separation Process II lab.	1	Co: CHE 326	MR
	CHE 332	Cost Estimation and Economics	3	Junior standing	MR
	CHE 324	Process Design I	2	CHE 206	MR
	XXX	elective	3		URE/ELC
		Total	**17**		

FOURTH YEAR (31 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	CHE 421	Process Control	3	MTH 205, CHE 321, CHE 324	MR
	CHE 413	Separation Processes III	3	CHE 326, CHM 331	MR
	CHE 413L	Separation Processes III lab.	1	Co: CHE 413	MR
	CHE 432	Process Design II	2	CHE 325, CHE 326	MR
	CHM 498	Design Project I	2	CHE 324, CHE 325, CHE 326, CHE 332 and senior standing or consent of instructor	MR
	CHE XXX	Technical elective I	3		MR/ELC
		elective	3		URE/ELC
		Total	**17**		
Spring	NGN 225	Electrical Circuits and Devices	3	PHY 102	MR
	CHE 433	Instrumental Analysis	3	CHM 215 or CHM 222	MR
	CHE 499	Design Project II	2	CHE 324, CHE 325, CHE 326, CHE 332 and senior standing or consent of instructor	MR
	CHE XXX	Technical elective II	3		MR
	CHE 430	Computer Methods in Chemical Engineering	2	Senior standing	MR
		Total	**13**		

Abbreviations: **URE**: University Requirement; **CRE**: College Requirement; **MR**: Major Requirement; **EPT**: English Placement Test

Bachelor of Science in Computer Engineering (B.S.Co.E.)

The Division of Electrical, Electronic and Computer Systems Engineering offers a four-year Bachelor of Science program in Computer Engineering (B.S.Co.E.). The objective of this program is to prepare a student to find employment in all sectors of society. This particular field of engineering is among the fastest growing of all career fields today. It is expected that computer engineering will play an important role in the future growth of the UAE, as many of the twenty-first century products and services will be based on intelligent systems developed by computer and software engineers. Most modern products make use of such embedded, on-board intelligent subsystems.

The AUS computer engineering faculty have designed this program to help students develop the necessary skills and competence needed to design and integrate computer components and software systems. Elective courses allow students to develop further specialization in the following areas: computer design, data communication and networks and computer based control.

The B.S.Co.E. degree is a professionally-oriented program requiring four years of university studies. The 140 credit hours required for the degree include university and general education requirements, computer engineering design and related subjects. The computer engineering program is designed to satisfy all applicable criteria adopted by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET) of the United States while, of equal importance, meeting the needs of the engineering community in the United Arab Emirates and the region.

University Graduation Requirements for B.S.Co.E.

A total of 140 credit hours, including:

University Requirements

- ARA XXX Arabic Language
- CHM 101 General Chemistry I
- COM 208 Public Speaking
- COM XXX English Language (four courses)
- HUM XXX Humanities (two courses)
- SS XXX Social Sciences (two courses)
- MTH 103 Calculus I
- PHY 101 General Physics I
- Statistics*
- Computer Literacy *

**These university required competencies may be satisfied through designated courses in engineering as well as through extensive use of computer resources throughout the curriculum.*

Major Requirements

- MTH 104 Calculus II
- MTH 205 Differential Equations
- MTH 213 Discrete Mathematics
- MTH 221 Linear Algebra
- PHY 102 General Physics II
- NGN 110 Introduction to Engineering I
- NGN 111 Introduction to Engineering II
- NGN 211 Introduction to Engineering III
- COE 210 Introduction to Computer Engineering
- COE 221 Digital Systems
- COE 221L Digital Systems Lab
- COE 222 Computational Methods in Electrical and Computer Engineering
- COE 331 Microprocessors and Computer Systems
- COE 331L Microprocessors and Computer Systems Lab
- COE 371 Computer Networks
- COE 371L Computer Networks Lab
- COE 381 Operating Systems
- COE 411 Computer Architecture and Organization
- COE 430 Algorithms and Data Structures
- COE 498 Design Project I
- COE 499 Design Project II
- ELE 211 Electric Circuits I
- ELE 212 Electric Circuits II
- ELE 212L Electric Circuits Lab
- ELE 241 Electronics I
- ELE 241 Electronics I Lab
- ELE 311 Engineering Electromagnetics
- ELE 321 Signals and Systems
- ELE 332 Measurements and Instrumentation
- ELE 332 Measurements and Instrumentation Lab
- ELE 341 Electronics II
- ELE 341 Electronics II Lab
- ELE 353 Control Systems I
- ELE 353L Control Systems Lab
- ELE 361 Communications I
- ELE 361L Communications I Lab
- Summer Practicum

Elective Courses

Students must take three elective courses and a laboratory from the following list of subjects:

- COE 421 Switching Circuits

- COE 422 Database Engineering
- COE 423 Artificial Neural Systems
- COE 424 Design of Digital Computers
- COE 425 Modern Computer Organization
- COE 426 Selected Topics in Computer Engineering
- COE 429 Computer Graphics
- COE 431 Computer Applications in Industry
- COE 444 Digital Signal Processing
- COE 455 Digital Image Processing
- COE 456L Computer Systems Applications Lab

Proposed Sequence of Study

B.S. in Computer Engineering

FIRST YEAR (33 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	COM XXX	Communication I	3	EPT score 4 or COM 001	URE
	MTH 103	Calculus I	4		URE
	NGN 110	Introduction to Engineering I	2		MR/URE
	HUM XXX	Humanities elective	3	COM 102	URE
	PHY 101	General Physics I	4		URE
		Total	**16**		
Spring	COM XXX	Communication II	3	EPT score 5 or COM 101	URE
	MTH 104	Calculus II	4		MR
	PHY 102	General Physics II	4		MR
	CHM 101	General Chemistry I	4		URE
	NGN 111	Introduction to Engineering II	2	NGN 110	MR/URE
		Total	**17**		

SECOND YEAR (40 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	COE 221	Digital Systems	3		URE
	ELE 211	Electrical Circuits I	3	PHY 102	MR
	COM XXX	Communication III	3	COM 102	URE
	MTH 205	Differential Equations	3		MR
	ARA XXX	Arabic Language	3		URE
	COE 210	Introduction to Computer Engineering	2	NGN 111	MR/URE
		Total	**17**		
Spring	COE 221L	Digital Systems lab.	1	Co: COE 221	MR
	COE 222	Computational Methods in Electrical & Comp. Engineering	4	MTH 205	MR/URE
	ELE 212	Electrical Circuits II	3	ELE 211	MR
	ELE 212L	Electrical Circuits lab.	1	ELE 211, Co: ELE 212	MR
	ELE 241	Electronics I	3	ELE 211	MR
	MTH 221	Linear Algebra	3		MR
	NGN 211	Introduction to Engineering III	2	COE 210	URE
		Total	**17**		
Summer	COE 331	Microprocessors and Computer Systems	3	COE 221	MR
		elective	3		URE
		Total	**6**		

THIRD YEAR (34 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	ELE 311	Engineering Electromagnetics	3	MTH 205 and PHY 102	MR
	ELE 321	Signals and Systems	3	ELE 212 and MTH 221	MR
	ELE 341	Electronics II	3	ELE 241	MR
	HUM XXX	Humanities elective	3	COM 102	URE
	COE 331L	Microprocessors and Computer Systems lab.	1	Co: COE 331	MR
	ELE 241L	Electronics I lab.	1	ELE 241	MR
	ELE 353	Control Systems I	3	PHY 102 and MTH 205	MR
		Total	**17**		
Spring	COE 381	Operating Systems	3	Co: COE 331	MR
	ELE 361	Communications I	3	ELE 311, ELE 321	MR
	SS XXX	Social Science elective	3		URE
	ELE 332	Measurements and Instrumentation	3	ELE 212, ELE 241	MR
	MTH 213	Discrete Mathematics	3		MR
	ELE 341L	Electronics II lab.	1	ELE 341	MR
	ELE 353L	Control Systems I lab.	1	ELE 353	MR
		Total	**17**		

FOURTH YEAR (33 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	COE XXX	COE elective	3		MR
	COE 411	Computer Architecture and Organization	3	COE 331	MR
	COE 498	Design Project I	2	Senior standing	MR
	COM XXX	Communication IV	3	COM 102	URE
	ELE 332L	Measurements and Instrumentation lab.	1	ELE 332	MR
	ELE 361L	Communications lab.	1	ELE 311, ELE 321	MR
	COE 371	Computer Networks	3	ELE 221, ELE 361	MR
		Total	**16**		
Spring	COE XXX	COE elective	3		MR
	COE XXX	COE elective	3		MR
	COE 430	Algorithms and Data Structures	3	COE 222	MR
	COE 499	Design Project II	3	COE 498	MR
	COM 208	Public Speaking	3	COM 102	URE
	COE 371L	Computer Networks lab.	1	COE 371	MR
	COE 456L	Computer Systems Applications lab.	1	COE 331 and COE 351	MR
		Total	**17**		

Note: XXX represents an elective course that can be taken in any discipline. If an elective course has a prefix (e.g., ARA XXX), the course must be taken from the particular discipline specified.

Abbreviations: **MR**: Major Requirement; **URE**: University Requirement; **EPT**: English Placement Test

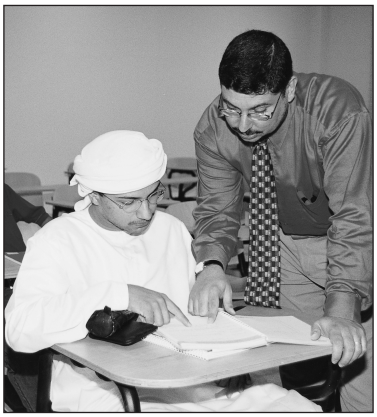
Bachelor of Science in Civil Engineering (B.S.C.E.)

Society has experienced enormous social and technological changes which offer civil engineers new challenges and opportunities. Civil engineers are involved in planning, design, construction and management activities of systems involving the natural and man-made environment. Civil engineers work on the construction of industrial facilities, public works and infrastructure systems and human environment protection. Examples include: buildings, highways, offshore structures, airports, bridges, reservoirs, tunnels and hazardous waste disposal plants.

Civil engineers also seek solutions to reduce air, water and ground pollution; to improve congested transportation systems; and to reduce the consequences of natural hazards such as storms, floods, wind and earthquakes. Nowadays, civil engineering plays an important role in avoiding environmental problems within the context of sustainable development.

The B.S. in Civil Engineering (B.S.C.E.) requires four years of university studies. The 140 credit hours required for the degree include prescribed courses that ensure the satisfaction of university foundation and general education requirements, as well as major requirements. The B.S.C.E. is designed to satisfy all applicable criteria promulgated by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology. Equally important, the program meets the needs of the engineering community in the United Arab Emirates and the region.

The Division of Civil, Environmental and Urban Systems



Engineering administers a four-year program leading to the Bachelor of Science degree in Civil Engineering (B.S.C.E.). The objective of the program is to provide the students with a broad background in both the theory and practice of the profession. The program is supported by modern laboratories for teaching and research. The program is based on an integration of science and technological knowledge with management and leadership capabilities at the detailed component level and at the system level. It provides the future leaders of the profession with skills and foundations for life-long learning and growth.

Courses in the civil engineering program include those in basic science, engineering sciences, engineering analysis, essentials of structural analysis, mechanics, computer-aided numerical methods, design of concrete and steel structures, engineering geology and soil mechanics. The program also includes courses in foundation engineering, subsurface exploration, environmental geotechnology and geotechnical engineering design. Especially important to this region, the program includes water resources engineering, surface and groundwater hydrology and hydraulics, irrigation and drainage engineering, sanitary engineering, wastewater treatment, environmental protection and pollution control and hazardous waste engineering. Last but not least, students can specialize in transportation and traffic engineering, surveying and geometronics, urban systems engineering, and testing and quality control of civil engineering construction materials. Students may also specialize in construction of civil engineering systems, quantitative engineering management, operations research and project estimating, planning, management and control. Computer skills are taught early in the program of study and are used frequently in subsequent courses.

A civil engineering degree opens up many attractive opportunities with public agencies, private industry, consulting firms or contracting firms.

University Graduation Requirements for B.S.C.E.

A total of 140 credit hours, including:

University Requirements

- ARA XXX Arabic Language
- CHM 101 General Chemistry I
- COM 208 Public Speaking
- COM XXX English Language Communication Skills (four courses)
- H&SS XXX Humanities and Social Sciences (four courses)
- MTH 103 Calculus I
- Statistics*
- Computer Literacy*
- PHY 101 General Physics I

**These university required competencies may be satisfied through designated courses in engineering as well as through extensive use of computer resources throughout the curriculum.*

Major Requirements

- CVE 201 Civil Engineering Lab I
- CVE 210 Introduction to Civil Engineering
- CVE 221 Materials of Construction and Quality Control
- CVE 231 Engineering/Environmental Geology
- CVE 241 Surveying and Geomatics
- CVE 301 Theory of Structures
- CVE 302 Civil Engineering Lab II
- CVE 303 Civil Engineering Lab III
- CVE 311 Structural Design
- CVE 321Numerical Methods and Computer Applications in Civil Engineering
- CVE 331 Geotechnical Engineering Principles
- CVE 333 Geotechnical Engineering Design
- CVE 341 Hydraulic Engineering
- CVE 351 Water and Wastewater Treatment
- CVE 361 Transportation Engineering
- CVE 401 Civil Engineering Lab IV
- CVE 464 Building Construction
- CVE 467 Project Estimating, Planning and Control
- CVE 498 Civil Engineering Design Project I
- CVE 499 Civil Engineering Design Project II
- NGN 110 Introduction to Engineering I
- NGN 111 Introduction to Engineering II
- NGN 211 Introduction to Engineering III
- NGN 221 Statics
- NGN 222 Dynamics
- NGN 223 Mechanics of Materials
- NGN 231 Materials Science
- NGN 241 Fluid Mechanics
- MTH 104 Calculus II
- MTH 203 Calculus III
- MTH 205 Differential Equations
- PHY 102 General Physics II

Every civil engineering student must complete one of the following two science courses noted by "*":

- CHM 102 General Chemistry II*
- BIO XXX Biology*

Electives

Students must complete 3 elective courses (9 credit hours) in civil engineering, general engineering and basic science courses. These courses are listed here under five major civil engineering specializations, namely: Structures, Geotechnical, Water, Environmental, Project Management and Highway Engineering.

Structural Engineering

- CVE 411 Structural Concrete Design
- CVE 412 Finite Element Method
- CVE 431 Selected Topics in Mechanics and Design of Concrete Structures
- CVE 434 Structural Steel Design
- CVE 437 Advanced Concrete Technology

Geotechnical Engineering

- CVE 441 Advanced Soil Mechanics
- CVE 442 Advanced Foundation Engineering
- CVE 445 Environmental Geotechnology
- CVE 446 Geotechnical Dam Engineering

Water Engineering

- CVE 447 Irrigation and Drainage Engineering
- CVE 448 Port and Harbor Engineering
- CVE 452 Selected Topics in Water Engineering
- CVE 466 Engineering Hydrology

Environmental Engineering

- CHM 222 Inorganic Chemistry
- CVE 450 Environmental Pollution Engineering and Control
- CVE 453 Selected Topics in Environmental Engineering
- CVE 455 Environmental Impact Assessment, Protection and Public Health

Project Management

- CVE 463 Construction Management
- CVE 468 Systems Construction Management, Scheduling and Control
- NGN 461 Management for Engineers
- NGN 462 Engineering Project Management
- NGN 463 Quantitative Engineering Management I
- NGN 464 Engineering Economics
- NGN 465 Quality Control for Production Systems
- NGN 466 Quantitative Engineering Management II

Highway Engineering

- CVE 456 Traffic Engineering
- CVE 457 Selected Topics in Transportation and Surveying Engineering
- CVE 458 Pavement Design
- CVE 459 Engineering Urban Systems Planning

Proposed Sequence of Study

B.S. in Civil Engineering

FIRST YEAR (34 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	CHM 101	General Chemistry I	4		MR/URE
	COM 101	Academic Writing	3	EPT score 4 or COM 001	URE
	MTH 103	Calculus I	4		MR/URE
	NGN 110	Introduction to Engineering I	2		MR/URE
	PHY 101	General Physics I	4		MR/URE
		Total	**17**		
Spring	CHM 102N or BIO XXX	General Chemistry II or Biology X	4		MR/URE
	COM 102	Writing and Reading Across the Curriculum	3	EPT score 5 or COM 101	URE
	MTH 104	Calculus II	4		MR/URE
	NGN 111	Introduction to Engineering II	2	NGN 110	MR/URE
	PHY 102	General Physics II	4		MR/URE
		Total	**17**		

SECOND YEAR (42 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	COM XXX	Communication III	3	COM 102	URE
	MTH 203	Calculus III	4		MR/URE
	NGN 221	Statics	3	PHY 101	MR
	CVE 231	Engineering/Environmental Geology	3	Sophomore standing	MR
	CVE 210	Introduction to Civil Engineering	2	NGN 111	MR/URE
	CVE 241	Surveying and Geomatics	3	MTH 104	MR
		Total	**18**		
Spring	COM XXX	Communication IV	3	COM 102	URE
	NGN 211	Introduction to Engineering III	2	CVE 210	MR/URE
	H & SS XXX	Humanities and Social Sciences elective	3	COM 102	URE
	MTH 205	Differential Equations	3		MR/URE
	NGN 223	Mechanics of Materials	3	NGN 221	MR
	NGN 231	Material Science	3	CHM 101	MR
	CVE 201	Civil Engineering lab. I	1	Sophomore standing	MR
		Total	**18**		
Summer	NGN 222	Dynamics	3	NGN 221	MR
	NGN 241	Fluid Mechanics	3	MTH 104, NGN 221	MR
		Total	**6**		

THIRD YEAR (36 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	CVE 321	Numerical Meth. and Comp. Appl. in CVE	3	MTH 205, or consent of inst.	MR
	CVE 221	Materials of Construction and Quality Control	3	NGN 231	MR
	CVE 331	Introduction to Geotechnical Engineering	3	NGN 223, CVE 231	MR
	CVE 301	Theory of Structures	3	NGN 223	MR
	CVE 341	Hydraulic Engineering	3	NGN 241	MR
	CVE 302	Civil Engineering lab. II	1	CVE 221	MR
	CVE 303	Civil Engineering lab. III	1	Co: CVE 331	
		Total	**17**		
Spring	ARA XXX	Arabic Language	3	COM 102	URE
	CVE 351	Water and Wastewater Treatment	3	CVE 341	MR
	CVE 333	Geotechnical Eng. Design	3	CVE 331	MR
	CVE 361	Transportation Engineering	1	CVE 241, Co: CVE 331	MR
	CVE 401	Civil Engineering lab. IV	3	Co: CVE 351	MR
	CVE 311	Structural Design	3	Co: CVE 301	MR
	H & SS XXX	Humanities and Social Sciences elective	3	COM 102	URE
		Total	**19**		

FOURTH YEAR (28 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	COM 208	Public Speaking	3	COM 102	URE
	CVE/NGN	CVE/NGN elective	3		MR
	CVE 464	Building Construction	3	CVE 221, CVE 301, Co: CVE 333	MR
	CVE 467	Project Estimating Planning and Control	3	Senior standing	MR
	CVE 498	Civil Engineering Design Project I	1	Senior standing	MR
	XXX	elective	3		URE
		Total	**16**		
Spring	CVE/NGN	CVE/NGN elective	3		MR
	CVE/NGN	CVE/NGN elective	3		MR
	CVE 499	Civil Engineering Design Project II	3	Senior standing	MR
	XXX	elective	3		URE
		Total	**12**		

Abbreviations: **MR**: Major Requirement, **URE**: University Requirement, **H & SS**: an elective course from Humanities and Social Sciences, **EPT**: English Placement Test

Bachelor of Science in Electrical and Electronic Engineering (B.S.E.E.)

The Division of Electrical, Electronic and Computer Systems Engineering offers a four-year Bachelor of Science program in Electrical and Electronic Engineering (B.S.E.E.). The objective of this program is to prepare students for a successful future in the engineering profession and to find employment in all sectors of society. The graduate engineers will be concerned with the generation, distribution and usage of electrical power and machines. Modern digital communication systems also provide many employment opportunities. Instrumentation and control play a major role in supporting local and world industry. Advances in medical electronic instrumentation have contributed to the welfare of mankind. It is difficult to find a sector of the economy and society where the work of electrical and electronic engineers is not relevant.

The electrical and electronic engineering program is built on foundation subjects in science, mathematics and general education. Core courses cover essential subjects that give a solid background in electrical and electronic engineering. Laboratory classes provide a practical learning environment in which a student links theory with application. A student then chooses a field of specialization through a choice of electives, which include communications, instrumentation and control, medical electronics and electric power engineering.

The B.S.E.E. degree in Electrical and Electronic Engineering may be completed in four years. However, as in the case of other engineering degrees, most students complete their studies in about five years. The 140 credit hour program includes general university, major and elective requirements. The degree is designed to satisfy all applicable criteria adopted by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET) of the United States. Of equal importance, it also meets the needs of the engineering community in the United Arab Emirates and the region.

University Graduation Requirements for B.S.E.E.

A total of 140 credit hours, including:

University Requirements

- ARA XXX Arabic Language
- CHM 101 General Chemistry I
- COM 208 Public Speaking
- COM XXX English Language (four courses)
- HUM XXX Humanities (two courses)
- SS XXX Social Sciences (two courses)
- MTH 103 Calculus I
- Statistics*
- Computer Literacy*
- PHY 101 General Physics I

**These university required competencies may be satisfied through designated courses in engineering as well as through extensive use of computer resources throughout the curriculum.*

Major Requirements

- ELE 210 Introduction to Electrical and Electronic Engineering
- ELE 211 Electric Circuits I
- ELE 212 Electric Circuits II
- ELE 212L Electric Circuits Lab
- ELE 241 Electronics I
- ELE 241L Electronics I Lab
- ELE 311 Engineering Electromagnetics
- ELE 321 Signals and Systems
- ELE 332 Measurements and Instrumentation
- ELE 332L Measurements and Instrumentation Lab
- ELE 341 Electronics II
- ELE 341L Electronics II Lab
- ELE 351 Electric Power Engineering

- ELE 351L Electric Machines and Power Systems
- ELE 353 Control Systems I
- ELE 353L Control Systems I Lab
- ELE 361 Communications I
- ELE 361L Communications I Lab
- ELE 371 Power Systems I
- ELE 498 Design Project I
- ELE 499 Design Project II
- COE 221 Digital Systems
- COE 221L Digital Systems Lab
- COE 222 Computational Methods in Electrical and Computer Engineering
- COE 331 Microprocessors and Computer Systems
- COE 331L Microprocessors and Computer Systems Lab
- COE 444 Digital Signal Processing
- MTH 104 Calculus II
- MTH 205 Differential Equations
- MTH 221 Linear Algebra
- MTH 213 Discrete Mathematics
- NGN 110 Introduction to Engineering I
- NGN 111 Introduction to Engineering II
- NGN 211 Introduction to Engineering III
- NGN 224 Statics and Dynamics
- PHY 102 General Physics II
- Summer Practicum

Elective Courses

Students must complete 3 elective courses and a laboratory in one of the following major areas:

Communications

- ELE 451 Communication II
- ELE 452 Digital Communications
- ELE 453 Microwave Engineering
- ELE 454 Antennas and Propagation
- COE 455 Digital Image Processing
- ELE 446 Selected Topics in Communication Engineering
- ELE 457 Satellite Communications
- ELE 458L Communications Systems Lab

Instrumentation and Control

- ELE 444 Control Systems II
- ELE 471 Digital Control Systems
- ELE 472 Nonlinear Control
- ELE 473 Industrial Instrumentation and Control
- ELE 474 Selected Topics in Control Systems
- ELE 475 Distributed Control Systems
- ELE 443 Power Electronics and Drives
- ELE 476L Instrumentation and Control Systems Lab

Medical Electronics

- ELE 432 Medical Instrumentation I
- ELE 433 Medical Instrumentation II
- ELE 434 Medical Imaging
- ELE 435 Medical Signal and Image Processing
- ELE 425 Optoelectronics
- ELE 436 Biomedical Materials
- ELE 438 Selected Topics in Medical Electronics
- ELE 439L Medical Electronics Systems Lab

Electric Power Engineering

- ELE 480 Electric Power Systems II
- ELE 482 Electric Power Distribution Systems
- ELE 485 Power Electronics
- ELE 486 Power Electronics and Drives
- ELE 487 Power Quality and Harmonics
- ELE 488 Power Engineering Lab
- ELE 489 Selected Topics in Power Engineering

Proposed Sequence of Study

B.S. in Electrical and Electronics Engineering

FIRST YEAR (33 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	HUM XXX	Humanities elective	3	COM 102	URE
	COM XXX	Communication I	3	EPT score 4 or COM 001	URE
	MTH 103	Calculus I	4		URE
	NGN 110	Introduction to Engineering I	2		MR/URE
	PHY 101	General Physics I	4		URE
		Total	**16**		
Spring	COM XXX	Communication II	3	EPT Score 5 or COM 101	URE
	NGN 111	Introduction to Engineering II	2	NGN 110	MR/URE
	MTH 104	Calculus II	4		MR
	PHY 102	General Physics II	4		MR
	CHM 101	General Chemistry I	4		URE
		Total	**17**		

SECOND YEAR (40 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	COE 221	Digital Systems	3		MR
	ELE 210	Introduction to Electrical and Electronic Engineering	2	NGN 111	MR/URE
	COM XXX	Communication III	3		URE
	NGN 224	Statics and Dynamics	3	MTH 104, PHY 101	MR
	ELE 211	Electric Circuits I	3	PHY 102	MR
	MTH 205	Differential Equations	3		MR
		Total	**17**		
Spring	NGN 211	Introduction to Engineering III	2	ELE 210	MR/URE
	COE 222	Computational Methods in Electrical and Computer Engineering	4	MTH 205	MR/URE
	ELE 212	Electric Circuits II	3	ELE 211	MR
	ELE 212L	Electric Circuits lab.	1	ELE 211, Co: ELE 212	MR
	ELE 241	Electronics I	3	ELE 211	MR
	COE 221L	Digital Systems lab.	1	Co: COE 221	MR
	MTH 221	Linear Algebra	3		MR
		Total	**17**		
Summer	COE 331	Microprocessors and Computer Systems	3	COE 221	MR
	XXX	elective	3		URE
		Total	**6**		

THIRD YEAR (34 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	ELE 331	Engineering Electromagnetics	3	ELE 211 or NGN 225	MR
	ELE 321	Signals and Systems	3	ELE 212, MTH 221	MR
	COE 331L	Microprocessors and Computer Systems lab.	1	Co: COE 331	MR
	ELE 341	Electronics II	3	ELE 241	MR
	ELE 241L	Electronics I lab.	1	ELE 241	MR
	ELE 353	Control Systems I	3	PHY 102, MTH 205	MR
	HUM XXX	Humanities elective	3	COM 102	URE
		Total	**17**		
Spring	ELE 351	Electric Power Engineering	3	ELE 211 or NGN 225	MR
	ELE 332	Measurements and Instrumentation	3	ELE 212, ELE 241	MR
	MTH 213	Discrete Mathematics	3		MR
	ELE 353L	Control Systems I lab.	1	ELE 353	MR
	ELE 341L	Electronics II lab.	1	ELE 341	MR
	ELE 361	Communications I	3	ELE 311, ELE 321	MR
	XXX	elective	3		URE
		Total	**17**		

FOURTH YEAR (28 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	ARA XXX	Arabic Language	3	COM 102	URE
	ELE 371	Power Systems I	3	ELE 351, Co: MTH 221	MR
	ELE 351L	Electric Machines and Power Systems lab.	1	ELE 351, Co: ELE 371	MR
	ELE 332L	Measurements and Instrumentation lab.	1	ELE 332	MR
	ELE 361L	Communications lab.	1	ELE 361	MR
	ELE XXX	ELE elective	3		MR
	ELE 498	Design Project I	2	Senior standing	MR
	COM XXX	Communication IV	3		URE
		Total	**17**		
Spring	COM 208	Public Speaking	3	COM 102	URE
	ELE XXX	ELE elective	3		MR
	ELE XXX	ELE elective	3		MR
	ELE XXXL	ELE elective lab.	1		MR
	COE 444	Digital Signal Processing	3	ELE 321	MR
	ELE 499	Design Project II	3	ELE 498	MR
		Total	**16**		

Abbreviations: **MR**: Major Requirement; **URE**: University Requirement; **EPT**: English Placement Test

Bachelor of Science in Mechanical Engineering (B.S.M.E.)

Modern society relies extensively on the good efforts and innovations that mechanical engineers provide. Mechanical engineers plan, design, construct, manufacture, operate, control, test and maintain all kinds of machines and mechanical appliances. Whether it is an automobile, an air conditioner, a jet engine, a power station, a space craft, a desalination plant, a robot or a steel mill, it has probably been conceived, designed and tested by mechanical engineers.

The Division of Chemical, Thermal and Mechanical Engineering offers a 4-year program leading to the Bachelor of Science Degree in Mechanical Engineering (B.S.M.E.).

Coursework in the mechanical engineering program includes topics in applied mechanics, fluid mechanics, thermal sciences, engineering materials, manufacturing processes, mechatronics and energy.

The B.S.M.E. degree is a professional program requiring four years of university studies. The 140 credit hours required for the degree include university foundation and general education requirements, courses in mechanical engineering and related subjects, technical elective courses and a summer practicum. The B.S. in Mechanical Engineering is designed to prepare those who seek careers as mechanical engineers. Thus, the mechanical engineering program is designed to satisfy all applicable criteria adopted by the Accreditation Board for Engineering and Technology (ABET) of the United States while, of equal importance, also meeting the needs of the engineering community in the United Arab Emirates and the region.

University Graduation Requirements for B.S.M.E.

A total of 140 credit hours, including the following:

University Requirements

- ARA XXX Arabic Language
- CHM 101 General Chemistry I
- COM 208 Public Speaking
- ENG XXX English Language (four courses)
- H&SS XXX Humanities and Social Sciences (four courses)
- MTH 103 Calculus I
- PHY 101 General Physics I
- Statistics*
- Computer Literacy*

**These university required competencies may be satisfied through designated courses in engineering as well as through extensive use of computer resources throughout the curriculum.*

Major Requirements

- MCE 210 Introduction to Mechanical Engineering
- MCE 231 Manufacturing Techniques
- MCE 241 Thermodynamics
- MCE 311 Engineering Measurements
- MCE 312 Control Systems
- MCE 312L Engineering Measurements and Control Lab
- MCE 316 Theory of Machines and Mechanisms
- MCE 321 Mechanical Design I
- MCE 322 Mechanical Design II
- MCE 335 Computational Techniques
- MCE 344 Heat Transfer I
- MCE 423 Mechanical Vibrations
- MCE 445 Energy Systems
- MCE 447 Internal Combustion Engines
- MCE 498 Design Project I
- MCE 499 Design Project II
- CHM 102N General Chemistry II
- ELE 351 Electric Power Engineering
- MTH 104 Calculus II
- MTH 203 Calculus III
- MTH 205 Differential Equations
- NGN 110 Introduction to Engineering I
- NGN 111 Introduction to Engineering II
- NGN 211 Introduction to Engineering III
- NGN 221 Statics
- NGN 222 Dynamics
- NGN 223 Mechanics of Materials
- NGN 225 Electric Circuits and Devices
- NGN 231 Materials Science
- NGN 241 Fluid Mechanics
- PHY 102 General Physics II

Elective Courses

Students must complete three elective courses in the School of Engineering from the following recognized areas in mechanical engineering: mechatronics, manufacturing and control; design, mechanics and materials; thermosciences or engineering management.

Technical Electives

Mechatronics, Manufacturing and Control

- MCE 418 Modeling and Control of Engineering Systems
- MCE 439 CIM in Industrial Systems
- MCE 464 Introduction to Robotics
- ELE 444 Control Systems II
- ELE 471 Digital Control Systems
- ELE 472 Nonlinear Control
- NGN 465 Quality Control for Production Systems
- MCE 495 Selected Topics in Mechanical Engineering
- MCE 496 Independent Study

Design, Mechanics and Materials

- MCE 435 Analytical Design I
- MCE 436 Analytical Design II
- MCE 473 Applied Finite Elements Analysis
- MCE 476 Design Optimization
- MCE 477 Composite Materials
- CVE 439 Advanced Mechanics of Materials
- MCE 495 Selected Topics in Mechanical Engineering
- MCE 496 Independent Study

Thermosciences

- MCE 446 Refrigeration and Air Conditioning
- MCE 448 Heat Transfer II
- MCE 449 Renewable Energy Systems
- MCE 473 Applied Finite Elements Analysis
- MCE 491 Fluid Power
- MCE 492 Advanced Fluid Mechanics
- MCE 493 Turbomachines
- MCE 495 Selected Topics in Mechanical Engineering
- MCE 496 Independent Study

Engineering Management

- NGN 461 Management for Engineers
- NGN 462 Engineering Project Management
- NGN 463 Quantitative Engineering Management I
- NGN 464 Engineering Economics
- NGN 465 Quality Control for Production Systems
- NGN 466 Quantitative Engineering Management II
- MCE 496 Independent Study

Proposed Sequence of Study

B.S. in Mechanical Engineering

FIRST YEAR (34 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	CHM 101	General Chemistry I	4		MR/URE
	COM 101	Academic Writing	3	EPT score 4 or COM 001	URE
	MTH 103	Calculus I	4		MR/URE
	NGN 110	Introduction to Engineering I	2		MR/URE
	PHY 101	General Physics I	4		MR/URE
		Total	**17**		
Spring	COM 102	Writing and Reading Across the Curriculum	3	EPT score 5 or COM 101	URE
	MTH 104	Calculus II	4		MR/URE
	NGN 111	Introduction to Engineering II	2	NGN 110	MR/URE
	PHY 102	General Physics II	4		MR
	CHM 102N	General Chemistry II	4		MR
		Total	**17**		

SECOND YEAR (41 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	NGN 225	Electrical and Electronic Circuits	3	PHY 102	MR
	MTH 203	Calculus III	4		MR
	MCE 210	Introduction to Mechanical Engineering	2	NGN 111	MR
	NGN 221	Statics	3	PHY 101	MR
	NGN 231	Material Science	3	CHM 101	MR
	HUM XXX	Humanities elective	3	COM 102	URE
		Total	**18**		
Spring	NGN 211	Introduction to Engineering III	2	MCE 210	MR/URE
	MTH 205	Differential Equations	3		MR
	NGN 222	Dynamics	3	NGN 221	MR
	MCE 231	Manufacturing Techniques	3	CHM 101	MR
	SS XXX	Social Science elective	3	COM 102	URE
	COM XXX	Communication III	3		URE
		Total	**17**		
Summer	NGN 223	Mechanics of Materials	3	NGN 221	MR
	MCE 241	Thermodynamics	3	MTH 104, NGN 221	MR
		Total	**6**		

THIRD YEAR (31 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	COM XXX	Communication IV	3	COM 102	URE
	MCE 311	Engineering Measurements	3	NGN 225	MR
	MCE 321	Mechanical Design I	3	NGN 223	MR
	MCE 335	Computational Techniques	3	MTH 205	MR
	NGN 241	Fluid Mechanics	3	MTH 104, NGN 221	MR
		Total	**15**		
Spring	MCE 316	Theory of Machines and Mechanisms	3	NGN 222	MR
	MCE 322	Mechanical Design II	3	MCE 321	MR
	MCE 344	Heat Transfer I	3	NGN 241, MCE 241	MR
	MCE 312	Control Systems	3	NGN 222	MR
	MCE 312L	Engineering Measurements and Control lab.	1	Co: MCE 311, Co: MCE 312	MR
	HUM XXX	Humanities elective	3	COM 102	URE
		Total	**16**		

FOURTH YEAR (34 credit hours)					
Term	**Course #**	**Title**	**Credit Hours**	**Prerequisite**	**Fulfills**
Fall	MCE 423	Mechanical Vibrations	3	MTH 205, NGN 222	MR
	MCE 445	Energy Systems	3	MCE 344	MR
	MCE 498	Design Project I	2		MR
	COM 208	Public Speaking	3	COM 102	URE
	ELE 351	Electric Machines	3	ELE 211 or NGN 225	MR
		elective	3		MR/ELC
		Total	**17**		
Spring	MCE447	Internal Combustion Engines	3	MCE 241	MR
	MCE 499	Design Project II	2	MCE 498	MR/ELC
	ARA XXX	Arabic Language	3	COM 102	URE
	XXX	elective	3		MR
	XXX	elective	3		MR
	XXX	elective	3		MR/ELC
		Total	**17**		

Abbreviations: **MR**: Major Requirement; **URE**: University Requirement; **ELC**: Elective (from the list of approved technical electives in Mechanical Engineering); **EPT**: English Placement Test

Continuing Education Center

Director
Ron Mohr

The Continuing Education Center (CEC) at the American University of Sharjah offers quality educational and professional development programs to meet the ongoing needs of businesses and organizations in the Emirates. CEC fulfills this mandate by accessing the facilities and resources of AUS and its affiliates as well as utilizing a select group of local and international consultants.

Customized Training

Organizations require a flexible, highly skilled workforce and management capable of meeting the challenges of today's dynamic and competitive business environment. The CEC is uniquely qualified to help organizations in the UAE and surrounding region train and update the skills of their workforces through a variety of training programs.

The CEC is distinctive in its ability to deliver the right combination of experienced personnel, excellent facilities and the latest technology. Our administrative team includes professionals with years of experience in developing and delivering continuing education and development programs in the UAE and in North America. This is relevant and timely expertise that is available throughout the year.

Our programs provide a fertile environment for the exchange of ideas and valuable opportunities for middle and senior level executives to learn from each other. Aside from the direct benefit from the discussions and networking which result from both the formal and informal aspects of each program, the CEC programs provide participants with training that is immediately relevant to their work and their organization. Therefore, everything new they learn can be implemented and practiced in a timely manner.

To be effective, the unique needs and goals of an organization must be considered and incorporated into the design and delivery of training. Placing employees into "off the shelf" programs is always easier and sometimes cheaper in the short run but this approach usually provides very little benefit to the organization unless it is tied to a training plan. The experts at the CEC will work closely with the management of organizations to ensure that the objectives, materials and delivery move that organization toward meeting its objectives. When the skills learned in the classroom are related to the workplace, participants will experience better retention of the new skills and the employer sees direct improvement in the workplace.

The CEC can assist organizations in many ways. By working in partnership with key management staff, it can:

- Assess internal and external needs
- Set training objectives
- Develop a training plan for individuals or the organization
- Develop customized courses and materials to achieve your organizational goals
- Provide certification or develop internal certification programs

In addition to the programs listed below, the diverse nature of the faculty expertise at AUS allows CEC to develop and deliver programs in a range of business, management, engineering, design, arts, science and many other disciplines.

During the first eighteen months of CEC operation, we have worked with local government organizations and businesses to develop programs in Management Development, Leadership, Team Building, Communication, Projects Management, Executive English, Real Estate Investment, English Language Development, Time Management, Computer Upgrading for Engineers, Exposition Management and others.

Customized Certificate Programs

There is no quick fix to most organizational development issues. Workshops and seminars that are not part of a comprehensive long-term plan to build skills are proven to be ineffective as a means of introducing lasting change in an organization. After a careful review and assessment of an organization's professional development needs, CEC can develop a flexible modular program that will culminate in a certificate.

Generally, such a certificate program will provide a combination of intense learning that is directly applicable to the workplace with a modular approach to building skills. This allows individuals to access different aspects of a discipline while building more comprehensive skills. Each module will stand alone as a unit and participants will be required to attend all sessions and meet specific objectives before being given credit for the module. By successfully completing a specified number of these independent modules, individuals will be granted an AUS Continuing Education Center certificate or diploma.

Diploma in Translation and Interpreting

Although the focus of CEC activity is to work directly with organizations to develop managers and professional staff, we will be developing certification and diploma programs to meet specific needs of working professionals. The Diploma in Translation and Interpreting is the first program of this nature to be offered on a regular basis as an evening program.

The vital role that English continues to play in international communications and the growing impact of the Arab World on global affairs, are creating a demand for highly qualified translators and interpreters. The ninety-hour program is delivered by the faculty of the Department of English at the American University of Sharjah and is designed to respond to this crucial element in inter-cultural communication. The program is administered by the Continuing Education Center.

The Diploma in Translation and Interpreting addresses the need for upgrading those professionals that are already working as translators and interpreters in the region. It is assumed that these working professionals are familiar with text conventions in translating English and Arabic, therefore, classes will cover general principles related to the practical translation into and out of English and Arabic across a range of text types and in a variety of specialized fields (eg., legal, political, commercial, scientific).

A Bachelor of Arts or Bachelor of Science degree from an accredited university is required and a competency test in Arabic and English may be required for entry into the Diploma program.

Diploma Requirements

Participants will be awarded a certificate of achievement from the university after completing each eighteen-hour course in recognition of their continuing professional development in the translation field. All five sessions (90 hours) in the Diploma must be completed successfully with a minimum grade of 65% to attain the Diploma in Translation and Interpreting.

Course Delivery

In recognition of the schedule of working professionals, these courses will be delivered in a part time evening format. From time to time, or at the request of an organization or groups of students, the program may be offered in a more intensive format.

For further information regarding the CEC and the certificate and diploma programs, please contact the following numbers:

Tel: 971-06 505 5023
Fax: 971-06 505 5020
E-mail: edu_center@aus.ac.ae

College of Arts and Sciences

ARA Arabic

Arabic Language

Most Arabic Language courses meet the university requirement of three credits of Arabic. When in doubt, confirmation should be sought from the CAS Dean's office.

ARA 103 Composition for Native Speakers of Arabic (3-0-3). A practical language-based course that 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. An additional element will be a historical look at styles of composition in Arabic.

ARA 104 Arabic as a Second Language I (3-0-3). Introduces students to the script of modern written Arabic and develops their confidence and knowledge in the four skill areas. The materials are designed using a modern approach to foreign language teaching. *(Formely ARA 100).*

ARA 200 Arabic as a Second Language II (3-0-3). An extension of ARA 100 this course is designed to develop further the student's knowledge and proficiency in Modern Arabic. As with the previous course this one will also be video-driven. *Prerequisite: equivalent of approximately 60 – 70 classroom hours of Arabic.*

ARA 300 Arabic as a Second Language III (3-0-3). This course builds on the earlier Arabic courses using more advanced materials. Video materials will be used as the main focus for this course which builds on grammatical structures and conversational skills practiced in earlier courses. *Prerequisite: equivalent of approximately 125-150 classroom hours of Arabic.*

ARA 308 Introduction to Stylistics and Metrics (3-0-3). This course falls into two major parts: stylistics (balaghah) and metrics ('arud). In stylistics, a brief theoretical survey of the major components of the field is followed by extensive textual analysis. In metrics, the basic principles of the taf'ilat and their variations are introduced and applied to selected examples.

ARA 408 The Arabic Language and Modern Linguistics (3-0-3). This course will focus on the application of modern linguistic theory to the study of medieval and modern Arabic. By introducing the student to modern linguistic terminology and theory, it will assess the importance of modern linguistics in furthering our understanding of traditional Arab grammatical theory.

Arabic Literature

Most Arabic Literature courses meet the university requirement of three credits of Arabic. When in doubt, confirmation should be sought from the CAS Dean's office.

ARA 101 and 102 Readings in Arabic Heritage (3-0-3). These two courses survey selections from writings in Arabic prose, literature and poetry which reflect the intellectual, literary and cultural development of the Arabs from pre-Islamic times up to the present day.

ARA 201 Arabic Literature in Translation (for non-native speakers only) (3-0-3). This course is a detailed study of genre and theme in Arabic literature, with special emphasis on the modern period. It focuses on literature as a vital reflection of Arab culture and society.

ARA 202 Arab-Islamic History and the History of Arabic Literature (3-0-3). This is a very intensive and wide-ranging survey course designed to illustrate the essential facts of Arab history. It focuses on the landmarks of Arabic literature from pre-Islamic to modern times, and provides glimpses of the literary fruits borne within that milieu. The course will also deal with the fundamental facts of Arab history.

ARA 203 Pre-Islamic Poetry (3-0-3). Examines relevant aspects of pre-Islamic Arabian life and history, and deals with the main issues and trends related to pre-Islamic poetry using major primary sources. A direct textual approach is adopted based on a close critical analysis of selected poems.

ARA 204 Early Islamic and Umayyad Poetry (3-0-3). Surveys Arabic poetry from the advent of Islam to the end of the Umayyad era. Ideological, cultural, economic, social and political factors affecting poetry in both phases of this period are studied. The course highlights the revival of poetry under the Umayyads, the restoration of pre-Islamic poetic traditions, and the major poetic trends and features that testify to the contemporaneous nature of this poetry. The foundation of this course is a critical analysis of selected poems.

ARA 205 Poetry in the Abbasid Age (3-0-3). Covers the whole period from the fall of the Umayyads to the fall of Baghdad, and the entire territory from Transoxania to Al Andalus. The contemporaneous nature of Abbasid poetry, in its artistic techniques and in its response to the changing social and cultural life, represents a genuine break with the Arab poetic code which pervaded pre-Islamic and Umayyad poetry. Major trends and issues of this new poetry are surveyed, with a special emphasis on at least four major poets: Abu Nuwwas, Abu Tammam, Al Mutanabbi and Al Macarri.

ARA 206 Modern Arabic Prose (3-0-3). Surveys the renaissance of Arabic prose from the nineteenth century to the present. The general burden of the course is the study of the modern Arabic novel, short story, play and autobiography. Special attention is paid to the factors leading to the rise of these fundamentally Western literary forms in the Arab world as a result of the 'Nahda', and to elements of fiction and drama in 'parallel' forms in classical Arabic literature. The focus of the course is the study of the established works of Naguib Mahfouz and Tawfiq Al Hakim.

ARA 207 Arabic Drama (3-0-3). Looks at the emergence of Arabic drama in the nineteenth century until the present day and assesses prototype drama forms of the medieval period. Through a study of selected plays by prominent authors, a picture will emerge of the influence of Arabic drama on Arabic literature. Attention will be given to the effect created by the use of colloquial dialogues in play scripts. A selection of video recordings will also accompany this course.

ARA 301 Classical Arabic Prose until the end of the Third Century A.H. (3-0-3). Through critical textual analysis, this course tracks the evolution and development of classical Arabic prose from pre-Islamic times until the late second century A.H. after the death of Al Jahiz. Major trends, styles and forms are examined from a complex perspective, combining the evolutionary chronological approach with the artistic and analytical. It assesses the significance of the oratory tradition in early Islam, and also looks at the early development of the epistolary genre which was to become the main focus of Arabic prose literature. It also looks at the influence of the Qur'an and Hadith on the development of Arabic prose.

ARA 304 Modern Arabic Poetry (3-0-3). Surveys the renaissance of Arabic poetry from the nineteenth century to the present, principally through the stimulating first exposure to the West and the rise of Neo-Classicism by Al Barudi, Shawqi and others. It also investigates the steady and progressive exposure to the territory and soul of the West, which produced successive and contemporaneous waves of imitation,

assimilation, 'apostasy' and rejection.

ARA 305 Literature of the Arabian Gulf (3-0-3). Through selected texts, this course examines the contribution of literary figures in the Arabian Gulf, especially those of the United Arab Emirates, to Arabic literature in general.

ARA 312 Modern Arabic Literature: Prose and Poetry (3-0-3). This course surveys the renaissance (Nahda) of Arabic literature from the early twentieth century to the present day. Modern literary trends such as romanticism, realism and existentialism will be illustrated through the study of selected works: novels, short stories , drama and poetry (free verse) by prominent writers.

ARA 401 Literary Criticism from the Arab Perspective (3-0-3). This course is a survey of the history of Arab literary theories and of Arab literary criticism in classical times. The authoritative work by Ihsan Abbas (Tarikh Al Naqd Al Adabi 'ind Al Arab) provides the ideal framework for the course.

ARA 402 Qur'anic Studies (3-0-3). An introduction to the major Qur'an related issues such as the collection of the Qur'anic suras, Qur'anic imagery and the various trends in Qur'anic studies and interpretations and exegesis. It will also examine the important contribution made by the rationalist Mu'tazila to Muslim exegesis.

ARA 403 Sufi Literature (3-0-3). The purpose of this course is to familiarize students with Sufi literature and Sufi traditions and doctrines.

BIO Biology

BIO 101 General Biology I (3-3-4). Topics dealt with are the chemistry of life, the structure and function of cells, fundamentals of genetics and the history of life. The laboratory portion illustrates and reinforces the lecture material.

BIO 102 General Biology II (3-3-4). Topics dealt with are evolution, plants: form and function; animals: form, function and ecology. The laboratory portion illustrates and reinforces the lecture material. *Prerequisite: BIO 101.*

BIO 103 Introduction to Life Sciences (3-0-3). Surveys biological concepts. It presents essential general information about microbes, plants and animals. It also explains fundamental laws governing the biological world. Main topics include: evolution, metabolism, genetics, diversity of life and ecosystems. *Not open to Science or Engineering students.*

BIO 251 Environmental Biology (3-0-3). Utilizes scientific principles to examine environmental issues related to increasing world population and diminishing resources (clean air, water, energy and food). Other topics include ecosystems: How they work and how they can be sustained, pollution, hazardous waste, environmental economics and politics, global warming and ozone loss. *Prerequisite: BIO 102.*

BIO 331 General Microbiology (3-3-4). This course deals with the structure, life cycles, metabolism and roles of microorganisms. The laboratory component emphasizes microscopy and culture techniques. *Prerequisite: BIO 102.*

BIO 361 Biodiversity (3-0-3). Topics covered include principles of genetics, genetic and development bases of evolutionary change, patterns of evolution and the impact of environmental factors and human activity on biodiversity. *Prerequisite: BIO 251.*

BIO 421 Marine Biology (3-0-3). This course focuses on interactions between biological, chemical and physical processes in the marine environment. Specific topics will include the marine food web, geochemical cycling, ocean circulation and the role of ocean systems in global climate. *Prerequisite: BIO 251.*

CHM Chemistry

CHM 101 General Chemistry I (3-3-4). Covers the fundamental chemical principles, concepts and laws. Topics include: 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, the solid state and crystallography, the liquid state and phase diagrams. Laboratory experiments illustrate principles discussed in the course.

CHM 102 General Chemistry II (3-3-4). Properties of solutions including colligative and chemical properties. Acid-base and complex ion equilibria, laws of thermodynamics, enthalpy and free energy, electrochemistry, nuclear chemistry, representative elements, transition metals and coordination compounds. Laboratory includes experiments illustrating principles discussed in the course. *Prerequisite: CHM 101.*

CHM 103 Chemistry and Everyday Life (3-0-3). This course introduces the student to the extraordinary chemistry of ordinary things, the magic of chemistry and the building blocks of chemistry. Topics include: chemistry of the nucleus and the atomic bomb, 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). The main topics are air and energy, toxic substances, water and waste treatment. Special attention is paid to the ozone layer, ground level pollution, air and marine pollution, heavy metals in soil, global warming and environmental impact of energy production. Learning activities include: projects, Web searches, laboratory experiments and field trips. *Not open to Science or Engineering students.*

CHM 215 Organic Chemistry I (3-0-3). A survey of reactions of aliphatic and aromatic compounds including modern concepts of bonding, mechanisms, conformational analysis and stereochemistry. Alkanes and cycloalkanes, alkenes, alkynes, biologically active acetylenic compounds. Electrophilic and nucleophilic reactions, resonance, alkyl halides, SN1, SN2, E1 and E2 mechanisms. *Prerequisite: CHM 102.*

CHM 215L Organic Chemistry Laboratory I (0-4-1). Organic laboratory that includes experiments on purification, separation and identification techniques. It also includes synthesis of various organic compounds. *Prerequisite: CHM 215.*

CHM 216 Organic Chemistry II (3-0-3). Modern spectroscopic techniques for structure determination. Chemistry of oxygen and nitrogen compounds. The chemistry of alcohols, ethers, carbonyl compounds and amines with special attention to mechanistic aspects. *Prerequisite: CHM 215 or CHM 221.*

CHM 216L Organic Chemistry Laboratory II (0-4-1). An advanced organic laboratory with experiments related to the theoretical principles and synthetic methods of modern organic chemistry. *Prerequisite: CHM 216.*

CHM 222 Inorganic Chemistry (3-0-3). Introduces the fundamental concepts of solid-state, coordination, and organometallic chemistry. Topics emphasized include: atomic structure, molecular structure, symmetry and molecular orbital theory, bioinorganic compounds and their effect on the environment. *Prerequisite: CHM 102.*

CHM 225 Inorganic Chemistry Laboratory (1-3-2). Introduces the basic synthetic and characterization methods in inorganic chemistry. *Co-requisite: CHM 222.*

CHM 231 Physical Chemistry I (3-0-3). Investigates in depth the basic concepts of thermodynamics. The properties of gases are analyzed 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. *Prerequisite: CHM 102, MTH 104. Equivalent to CHE 204.*

CHM 241 Analytical Chemistry (2-3-3). Introduces the basic theories underlying analytical methods of chemical analysis. It covers fundamentals and applications of electrochemistry, complexiметric titrations, spectrophotometry, gravimetric and combustion analysis. The laboratory component deals with a variety of analytical techniques. *Prerequisite: CHM 102.*

CHM 251 Environmental Chemistry (3-3-4). Investigates in detail the interaction between natural systems and human activity. Topics include: biogeochemical cycles, aquatic chemistry, water pollution and treatment, atmospheric chemistry and air pollutants, organic pollutants, photochemical smog, hazardous wastes, toxicological chemistry, nuclear waste disposal and treatment of oil spills. *Prerequisite: CHM 102.*

CHM 331 Physical Chemistry II (3-0-3). Covers kinetics, electrochemistry, surface chemistry and transport properties. In kinetics emphasis is on the theory of reaction rates and methods of handling kinetic data. The electrochemical section examines the conventions, underlying theory and practical applications of electrochemical cells. *Prerequisite: CHM 231 or CHE 204.*

CHM 335 Physical Chemistry Laboratory (0-6-2). An advanced laboratory course. Students are assigned a series of experiments to be performed individually. Experiments cover the topics of thermodynamics, kinetics, electrochemistry, surface chemistry and transport phenomena. An original report is submitted after each experiment, including sample calculations and error analysis. *Co-requisite: CHM 331.*

CHM 351 Environmental Monitoring and Analysis Techniques (3-0-3). This course covers chemical safety, risk assessment, regulatory legislation, statistics and monitoring, as well as detection and identification procedures. Practical work is supplemented by case studies, together with visits to municipal offices and other environmental monitoring agencies. *Prerequisite: CHM 251.*

CHM 391 Information Sources (1-0-1). The various sources of chemical literature are introduced with emphasis on Web chemical sources and databases. *Prerequisite: CHM 102.*

CHM 445 Instrumental Analysis (2-3-3). An overview of modern instrumental methods of analysis utilized by scientists and engineers. It deals with analytical data treatment using error analysis, as well as the classification of analytical methods and types of instrumental methods. *Prerequisite: CHM 241 or CHM 331.*

CHM 451 Waste Treatment (3-0-3). Introduces the modern concepts of solid and liquid waste treatment. It covers sources and classification of hazardous waste and their transport in the environment; hazardous waste management problems; physical, chemical, and biological waste treatment processes; waste minimization; systems analysis for regional planning. *Prerequisite: CHM 251.*

CHM 452 Soil and Water Chemistry (3-0-3). Discusses the development of soil/water chemistry. It includes modern analysis methods for humic, minerals, particulates and pollutants in the soil. Topics covered are mineralogy, soil solution, ion exchange/sorption, water acidity, wetlands and redox processes in aerobic soils and nitrogen transformations. *Prerequisite: CHM 251.*

CHM 490 Project (0-12-6). A two-semester course in which the student participates in a research project. The student works closely with one or two faculty members on a specific research topic that may involve field trips and visits to industries and environmental regulatory agencies. The student is given much personal attention until the necessary skills are acquired and instrumental techniques are mastered. *Prerequisite: departmental approval.*

CMP Computer Science

CMP 102 Fortran Programming (3-1-3). Design and analysis of programs in FORTRAN. An introduction to computing using structured programming in FORTRAN. An introduction to computing using structured programming concepts. Not applicable to the major requirements in computer science. *Co-requisite: MTH 103.*

CMP 104 Pascal Programming (3-1-3). Design and analysis of programs in Pascal. An introduction to computing using structured programming concepts. Not applicable to the major requirements in computer science.

CMP 105 C Programming (3-1-3). A general overview of programming design and analysis of programs in C: data types, arithmetic and logic operators and expressions, input/output, conditional expressions and statements, repetitive structure, functions, arrays and pointers, basic file access.

CMP 106 PL/1 Programming (2-1-2). Elementary and intermediate programming techniques in PL/1. Computer solutions to numeric problems and non-numeric problems.

CMP 107 COBOL Programming (2-1-2). Elementary and intermediate programming techniques in COBOL. Computer solutions to business-oriented problems.

CMP 108 Java Programming (3-1-3). Introduction to basic concepts of programming in Java language. Problem solving, basic data types, arrays and subprograms. Study of fundamental concepts of object-oriented programming such as classes, objects, inheritance, interfaces and designing Web applets. Greater emphasis in this course is placed on business-oriented applications.

CMP 110 Visual Basic (2-2-3). Covers the standards of the Windows interface and its link to the Basic programming language. It includes the following concepts: forms, controls, functions, graphics, programming in Visual Basic, arrays, files and designing of custom menus.

CMP 120 Introduction to Computer Science I (3-1-3). An introduction to programming using C++. Topics include: variables, assignment statement, primitive types formatted input/output, looping, conditional execution, preprocessing directives, string manipulation, functions, compound types-arrays and structures, and basic file access.

CMP 210 Digital Systems (3-0-3). Number systems, Boolean algebra, analysis and design of combinational circuits, minimization techniques, analysis and design of sequential circuits, and introduction to computer design.

CMP 213 Discrete Structures (3-0-3)*(Cross-listed as MTH 213)***.** This course covers propositional and predicate calculus, sets, major classes of functions and related algorithms, principal of mathematical induction, recursive definitions, counting, relations, graph, trees and Boolean algebra. *Prerequisite: MTH 103.*

CMP 220 Introduction to Computer Science II (3-1-3). Advanced programming in C++: this course builds on CMP 120. Topics include: classes and objects, encapsulation, inheritance and its supporting mechanisms-polymorphism and dynamic binding, generic types, and exception handling. Quality software and programming in the medium is stressed. *Prerequisite: CMP 120 or CMP 105.*

CMP 232 Data Structures (3-0-3). Study of basic data structures and their applications. Lists and trees, graph algorithms, internal and external sort and search techniques, hashing, analysis and design of efficient algorithms, file processing techniques. *Prerequisite: CMP 120 or CMP 105.*

CMP 240 Introduction to Computer Systems (3-0-3). Introduction to computer organization, registers, machine instructions, data representations, execution control and addressing techniques, segmentation, linkage and recursion. *Prerequisite: CMP 210 or COE 221.*

CMP 310 Introduction to Operating Systems (3-0-3). Operating systems architectures, process scheduling and synchronization, memory management, virtual memory, deadlocks, file system, input/output, and distributed systems. *Prerequisite: CMP 232.*

CMP 315 Computer Networks (3-0-3). Introduction to computer networks, network architectures, OSI model, network protocols, LANs and WANs, network technologies and topologies, client-server model, distributed computing, Internet and its applications. *Prerequisite: consent of the instructor.*

CMP 320 Database Systems (3-0-3). Introduction to database concepts, data independence, logical and physical views of database systems. Data models: hierarchical, network and relational. Data description languages, query functions, relational algebra. *Prerequisite: CMP 213.*

CMP 321 Computer Graphics (3-0-3). Study of two- and three-dimensional graphics, graphics representation, algorithms for computing graphics and producing images, clipping, windowing, transformation, graphics hardware and applications. *Prerequisite: CMP 220 and MTH 104.*

CMP 324 File Processing (3-0-3). External storage devices. Sequential, indexed sequential and direct file organizations. Tree-structured, multi-list, inverted, cellular multi-list and hybrid file organizations. File systems. External sorting and merging. The protection problem. Introduction to database systems. *Prerequisite: CMP 220.*

CMP 330 Computer System Architecture (3-0-3). Advanced study of the architecture of computer systems. Processor organizations, hardwired and micro-programmed control, input/output subsystem, bus control, programmed I/O, DMA and interrupts, memory subsystem, interleaved, cache and associative memory, pipelines and their scheduling, RISC and CISC architectures. *Prerequisite: CMP 240.*

CMP 334 Organization of Programming Languages (3-0-3). Formal definition of programming languages, including specification of syntax and semantics. Simple statements including precedence, infix and postfix notation. Global properties of algorithmic languages including: scope of declarations, storage allocation, grouping of statements, binding time of constituents, subroutines, co-routines and tasks. List processing, string manipulation, data description and simulation languages. Run-time representation of program and data structures. *Prerequisite: CMP 232.*

CMP 335 Formal Languages and Computability I (3-0-3). An introduction to theoretical computer science. Topics include: regular expression and finite state concepts, basic automata theory, formal grammars and languages, computability, Turing machines and elementary recursive function theory. *Prerequisite: CMP 213.*

CMP 337 Parallel Computing (3-0-3). Hardware and software issues in parallel computing. Parallel architectures, network topologies, models of parallel computation, languages for parallel programming and parallel algorithms. Parallel program design and debugging using the language Occam. Issues of non-determinism, synchronization and deadlock. Survey of parallel applications. *Prerequisite: CMP 240.*

CMP 340 Analysis of Algorithms. (3-0-3). Design of computer algorithms for numeric and non-numeric problems, relation of data structures to algorithms, analysis of time and space requirements of algorithms, complexity and correctness of algorithms. *Prerequisite: CMP 232 and CMP 220.*

CMP 385 Professional and Ethical Issues in Computer Science (1-0-1). Student presentations and discussions of case studies relating to computer ethics. (Participation in the computer science seminar series is required). *Prerequisite: third or fourth year (junior or senior) standing in computer science or consent of the instructor.*

CMP 410 Compiler Construction (3-0-3). Review of program language structures, translation, loading, execution and storage allocation. Compilation of simple expressions and statements. Organization of a compiler including compile-time and run-time symbol tables, lexical and syntax scan, object code generation, error diagnostics, object code optimization techniques and overall design. Use of compiler writing languages and bootstrapping. *Prerequisite: CMP 232 and CMP 335.*

CMP 413 Performance Evaluation of Computer Systems (3-0-3). Modeling and evaluation of computer systems. Probability spaces and probability calculus, random variables and their distribution functions, the calculus of expectations. Markov chains, birth-death processes, Poisson processes, single queue, network of queues and their simulation. System simulation for performance prediction. Modeling concurrent processes and the resources they share. *Prerequisite: CMP 310 and STA 201.*

CMP 421 Image Processing (3-0-3). An introduction to basic techniques of analysis and manipulation of pictorial data by computer. Image input/output devices, image processing software, enhancement, segmentation, property measurement, Fourier analysis, computer encoding, processing and analysis of curves. *Prerequisite: consent of the instructor.*

CMP 424 Artificial Intelligence (3-0-3). Introduction to problems and techniques in artificial intelligence. 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 syntatic and semantic structures. Learning as a form of problem-solving through problem decomposition and subparts interaction. *Prerequisite: CMP 335.*

CMP 425 Information Theory (3-0-3). Information concepts, communication and data transmission, Shannon's theory, the mathematical concept of information, encoding of data and binary representation, Hoffman coding, entropy as a measure of the amount of information, Markov processes and probability, area of application. *Prerequisite: consent of the instructor.*

CMP 434 Programming Languages (3-0-3). Comparative study of programming languages from both theoretical and applied viewpoints. Typical issues include syntax and semantics, scope and binding times, storage allocation, parameter-passing techniques, control structures, run-time representation of programs and data. Detailed examples from the imperative, functional, parallel, object-oriented and logical programming paradigms. *Prerequisite: CMP 335.*

CMP 435 Formal Languages and Computability II (3-0-3). Advanced topics in theoretical computer science. Theory of computation, languages and syntactic analysis, computational complexity and NP-completeness. *Prerequisite: CMP 335.*

CMP 436 Object-Oriented Analysis and Design (3-0-3). An exploration of object-oriented design and software construction. Topics in object-oriented analysis and programming: classes, methods, messages, inheritance, static and dynamic binding, polymorphism, templates, design methodologies, class libraries and software reuse. Substantial object-oriented software project required. *Prerequisite: CMP 220.*

CMP 437 Introduction to Symbolic Computation. (3-0-3). History of systems for symbolic computation. Algebraic structures. Forms and data structures. Arithmetic on integers, polynomials, rational functions and power series. Modular arithmetic. Homomorphism methods. Greatest Common Divisor Algorithms. Polynomial factoring. Solution of equations. Symbolic integration. *Prerequisite: CMP 213 and CMP 232.*

CMP 438 Programming Robots (3-0-3). An examination of programming issues involved in creating autonomous robots, which can

interact with their environments in "intelligent" ways. Topics include traditional robotics, behavior-based robotics, sensor processing, sensor–based control, programming robotic behaviors. *Prerequisite: CMP 120.*

CMP 440 Software Engineering (3-0-3). Study of the design and production of large and small software systems. Topics include: systems engineering, software life-cycle and characterization, use of software tools. *Prerequisite: consent of the instructor.*

CMP 450 Hypermedia Computing (3-0-3). Hypermedia covers integration of text, graphics, animation, sound and video into a single computer application: gives students a broad understanding of the technical aspects of hypermedia application development as well as the conceptual issues that affect this technology. *Prerequisite: consent of the instructor.*

CMP 460 Introduction to Simulation and Modeling (3-0-3). Design and implementation of simulation models for systems design and analysis. Emphasis on discrete stochastic systems and real-world business and government problems including resource allocation, queuing, simulation languages and their applicability to problem solving. *Prerequisite: CMP 120.*

CMP 470 Introduction to Neural Networks (3-0-3). Presents different types of neural networks and describes the basic mechanisms that underlie each network. Discusses fundamental network properties necessary to achieve autonomous behavior. Analyzes how well each network satisfies these properties. *Prerequisite: senior standing and consent of the instructor.*

CMP 490 Project in Computer Science (3-0-3). Faculty supervised projects by students on special topics of current interest. Both oral and written presentations on the topics are required. *Prerequisite: senior standing and consent of the instructor.*

CMP 494 Topics in Computer Science (3-0-3). Topics of current interest in computer science not covered in existing courses. May be repeated under a different subtitle. *Prerequisite: senior standing and consent of the instructor*.

CMP 496 Independent Study (variable credit: 1-6 credit hours). Involves investigation under faculty supervision beyond what is offered in existing courses. *Prerequisite: overall GPA of at least 2.0, junior or senior standing, and consent of the instructor.*

Cultural Studies

See "History and Cultural Studies" section

COM Communication

English Communications Competency Program

COM 001 Fundamentals of Writing (3-0-3). Develops the skills of reading and writing, and teaches grammar competencies needed to write complex English sentences. Students will learn how to write and support topic sentences and build coherent and unified paragraphs. *Prerequisite: EPT below 4.*

COM 101 Academic Writing (3-0-3). Students practice the process of writing different essay types by reading a variety of texts and focusing on the development of writing unified, coherent and supported academic essays. Students are expected to refine their grammatical skills and demonstrate the ability to produce appropriate sentences. *Prerequisite: EPT 4.*

COM 102 Writing and Reading Across the Curriculum (3-0-3). Builds upon the skills developed in COM 101 and focuses on the development of critical thinking, active reading and analytical writing skills across the curriculum. Students are expected to read and respond to texts from a variety of disciplines and achieve further refinement of grammar and vocabulary skills. Students are also introduced to basic research techniques. *Prerequisite: EPT 5 or COM 101.*

COM 203 Genre Analysis (3-0-3). Builds upon the skills acquired in COM 102 to develop further students' critical thinking, and academic writing competencies. Students will read short stories, poetry and drama and produce a research paper using analytical and critical skills in response to literary texts. *Prerequisite: COM 102.*

COM 204 Advanced Academic Writing (3-0-3). Builds upon the skills acquired in COM 102 to develop further students' critical thinking, and academic writing competencies. Students will 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: COM 102.*

COM 207 English for Engineering (3-0-3). Intended for Engineering students only. Its purpose is to introduce them to English used for communication in their field with a special emphasis on writing and presenting technical reports. *Prerequisite: COM 203 or 204.*

COM 208 Public Speaking (3-0-3). Introduces students to the art of public speaking, debate and argument. Students gain confidence as public speakers by learning the techniques of making effective presentations and by gaining extensive practice in public speaking. *Prerequisite: COM 102.*

COM 209 Dramatic Expression (3-0-3). This course is intended to give students an opportunity to perform publicly in a variety of formats, including poetry reading, acting, miming and singing. *Prerequisite: COM 102.*

COM 211 Film Study (3-0-3). Introduces the methods commonly used in film criticism. Students view classical motion pictures and write essays evaluating the films in such areas as content, production skill, screenwriting, acting, production design, lighting, cinematography and costuming. *Prerequisite: any COM 200 level course.*

Communication

COM 220 Intercultural Communication (3-0-3). Provides an overview of the way in which cultures influence communication. A broad range of topics will be covered including perception differences, verbal and non verbal communication in high and low context cultures, and the effect of bias and conflicting value systems on cross-cultural communication. *Prerequisite: COM 102.*

COM 225 Global Business Communication (3-0-3). Explores the implications of professional approaches to communication in a global economy through the study of various theories of global professional communication. This course will help students develop an appreciation of the complex relationships between culture, communication and ways of organizing and doing business. *Prerequisite: COM 203 or COM 204. (Formerly COM 206).*

COM 231 Writing for Visual Media (3-0-3). Introduces students to existing and emerging communication technology and examines its impact on the communication process. This course will also prepare students to manage the process of designing documents, from the planning stage through final production. Students learn basic rhetorical principles (invention, arrangement, style, delivery as well as clarifying and simplifying prose copy) and then apply these principles by writing articles, stories and advertising copy. *Prerequisite: COM 102. (Formerly COM 210).*

COM 235 Communication in Advertising (3-0-3). Provides students with an analysis of commercial advertising from a global perspective with attention to communication theory. Students will examine the structure of advertising messages, how they are adapted to specific audiences, and the social settings in which they occur. Issues of Internet advertising and e-commerce will be explored. *Prerequisite: COM 102. (Formerly COM 205).*

COM 237 Public Relations: Media and Case Studies (3-0-3). Examines typical public relations problems in business and corporate

settings through case studies. Students will plan and prepare communications materials for various media and learn to apply basic public relations techniques. *Prerequisite: COM 231 or COM 235.*

COM 303 Feature Article Writing (3-0-3). Explores the writing of feature articles for newspapers, magazines and specialized publications. Students will develop skills in the research, interviewing, writing, marketing and publishing of articles. *Prerequisite: COM 231 or COM 235.*

COM 307 Editing (3-0-3). Provides practical experience in editing and preparing manuscripts for publication along with a general introduction to the functions of the editor. *Prerequisite: COM 231 or COM 235.*

COM 401 Documentary and Script Writing (3-0-3). Study of representative documentaries, examining form, technique, trends and audience objectives. The course will emphasize research methodology, planning a production schedule, interviewing skills, script writing and editing. *Prerequisite: COM 307.*

COM 403 Advanced Advertising Copy-Writing (3-0-3). Explores issues, strategies, tactics and practices involved in writing advertising messages and public relations press releases. Students are exposed to legal and ethical issues, customer-client relationships, media relations and technical requirements unique to print, broadcast and news media. Attention is also given to presentational strategies, group behavior and emerging issues in the communications field. Projects simulate professional tasks, including group work, oral presentations and the preparation of advertising documents. *Prerequisite: COM 235 and 307.*

COM 405 Technology and Communication (3-0-3). Provides students with practical experience in writing and editing features and editorials for print and broadcast media. Comparative perspectives of writing for print, radio, TV and Internet media will be explored, as well as the role of international media in communication among and between nations and people. This course also introduces advanced students to theory and techniques of writing news analyses, editorials and reviews of culture and the arts. *Prerequisite: COM 231 and 307.*

COM 407 Issues in Advertising and Public Relations (3-0-3). Focuses on major issues in advertising and public relations, with a special emphasis on international issues. Students will examine international advertising and advertising directed at cultural minorities. In addition, case studies of international and cross-cultural problems in public relations within and across industry, government and institutions will be examined. *Prerequisite: COM 403.*

COM 409 Advertising Campaign Research and Design (3-0-3). Introduces students to concepts of media mix--matching product, consumer and media profiles for retail and business-to-business applications; conception, research, planning and design of advertising campaigns for print, broadcast and news media; ethics in advertising. *Prerequisite: COM 403.*

COM 411 Writing and Producing Documentaries (3-0-3). Examines different formats used in documentary production and the concepts used in transforming research efforts into a half-hour program. The course will emphasize research methodologies, planning a production schedule, interviewing skills, videotape shooting, script writing and rewriting for longer form reports, videotape editing, graphics and post-production editing. *Prerequisite: COM 401.*

COM 413 Advertising Campaign Management (3-0-3). Conceived as the capstone of the Advertising and Public Relations Track. Students will embark on a semester-long project, collaborating on the conception, research, planning and execution of advertising campaigns. Special emphasis will be given to advanced copywriting, as well as to layout and production concerns for print, broadcast and news media. *Prerequisite: COM 409.*

COM 415 Media Project Management (3-0-3). This course is conceived as the capstone for the Mass Communications track. Students will embark on a semester-long project, collaborating on the conception, research, planning and execution of various media projects. Special emphasis will be given to advanced media writing, as well as to layout and production concerns for print, broadcast and new media. *Prerequisite: COM 411.*

ECO Economics

ECO 201 Principles of Microeconomics (3-0-3). Introduction to the basic principles of microeconomics and their applications; supply and demand, operation of markets, consumer and enterprise behavior, competition and monopoly, income distribution, discrimination and alternative ap-proaches to economics.

ECO 202 Principles of Macroeconomics (3-0-3). Introduction to the basic principles of macroeconomics, stressing national income, unemployment, inflation, economic growth, depression, prosperity, international economics and economic development.

ECO 301 Intermediate Microeconomics (3-0-3). Theory of relative prices of commodities and productive services under perfect and imperfect competition. Theory of the firm and consumer demand. *Prerequisite: ECO 201.*

ECO 302 Intermediate Macroeconomics (3-0-3). Concepts and theory of national income determination, unemployment, inflation and economic growth. *Prerequisite: ECO 201 and ECO 202. (Formely ECO 204)*

ECO 305 International Trade (3-0-3). Introduction to the economics of international trade, including why countries trade, commercial trade policies and their effects, growth and international trade, and multinational firms. *Prerequisite: ECO 201 and ECO 202.*

ECO 306 International Finance (3-0-3). Introduction to the economics of international finance, including the foreign exchange markets, short term capital flows and long term capital flows, the operation and effects of fixed and flexible exchange rates, and balance of payments. *Prerequisite: ECO 201 and ECO 202.*

ECO 310 Development Economics (3-0-3). Theories of economic development. The colonial and neo-colonial legacy. Problems of poor countries. New strategies of development and economic relations between poor and rich countries. *Prerequisite: ECO 201 and ECO 202.*

ECO 315 Economics of the Middle East (3-0-3). 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. *Prerequisite: ECO 201 and ECO 202.*

ECO 318 Economics of Water Resources (3-0-3). Water resources: supply, demand, pricing, allocation and distribution. Impact of water policy on economic growth and conservation. Planning, development and management of water resources. *Prerequisites: ECO 201 and 202, or consent of the instructor.*

ECO 320 History of Economic Ideas (3-0-3). Exposition and analysis of the development of economic theory. Emphasis on tracing evolution of economic theories out of specific historical contexts. Major figures and schools in economic thought from Adam Smith to the present. *Prerequisite: ECO 201 and ECO 202.*

ECO 321 Theories of Political Economy (3-0-3). Analysis of political economic theories including old and new institutionalists, neo-Ricardians and modern Marxist perspectives. Emphasis on interdependence of political, economic and social forces in shaping contemporary social problems. *Prerequisite: ECO 201 and ECO 202.*

ECO 325 Public Economics (3-0-3). Microeconomic theory as a framework for understanding the problems of public managers. 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. *Prerequisite: ECO 201 and ECO 202.*

ECO 326 Economics and the Law (cross-listed as PBA 314) (3-0-3). Major topics include property rights, contract rights and liability rules. Both efficiency and fairness will be analyzed. For efficiency, emphasis is placed upon the incentive effects that legal rulings create for economic behavior in the future. Fairness is analyzed mostly in terms of the effects which legal rulings have upon the distribution of wealth. *Prerequisite: ECO 201.*

ECO 327 Competition, Free Markets and Antitrust (cross-listed as PBA 312) (3-0-3). Firms take actions which improve their own competitive position and which harm their rivals. This course discusses the benefits and harms of such actions, and introduces the basic framework which can help determine which actions should be legal, and which should not. Topics include: a comparison of competition with market power, vertical integration, price fixing and cartels, vertical restrictions, price discrimination and predatory pricing. *Prerequisite: ECO 201.*

ECO 328 Government Regulation of Business (3-0-3). *(Cross-listed as PBA 313).* Examination of the reasons why governments regulate business. Such reasons include: fairness, excessive competition, natural monopoly, externalities, imperfect information and transactions costs. Class time will be divided between examining the theories for regulation and investigating actual legal cases. *Prerequisite: ECO 201.*

ECO 330 Money and Banking (3-0-3). The role of money and credit in the economy. The structure and operations of commercial banks. Central banking and the operation of monetary policy. Non-banking institutions and the structure of financial markets. Elements of monetary theory. *Prerequisite: ECO 201 and ECO 202.*

ECO 335 Economic History of the World Economy (3-0-3). Historical investigation of economic development using Western Europe, Russia, the Third World and the United States as case studies. *Prerequisite: ECO 201 and ECO 202.*

ECO 403 Economics of Oil and Gas (3-0-3). The microeconomics of oil and gas. Issues of world oil and gas supply, demand and pricing; the role and structure of OPEC and AOPEC; international political economy of oil. Particular emphasis on the role of energy in Gulf economies. *Prerequisite: ECO 301 or consent of instructor.*

ECO 404 Economics of Natural Resources and the Environment (3-0-3). An introduction to the policy issues associated with the changing role of natural resources in modern economies. Emphasis on valuation of renewable and nonrenewable resources, resource extraction and development, and the effects upon the environment. *Prerequisite: ECO 301 or consent of instructor.*

ECO 405 Introduction to Econometrics (3-0-3). Review of the theory of economic statistics and statistical techniques. Emphasis on applying statistical models to economic data. Regression analysis and estimation of economic models. Includes: violations of the basic assumptions of the regression model, dummy variables, analysis of variance, cross section and time series data analysis, index numbers and time series analysis. *Prerequisite: ECO 301, and (MTH 102 or MTH 104).*

ECO 495 Senior Seminar in Economics (3-0-3). Intensive investigation of special topics in economics chosen by the instructor. Ordinarily, this course must be taken over two semesters for six credits. Only fourth-year students may take this class. *Prerequisite: ECO 301 and ECO 302 and consent of instructor.*

ECO 497 Internship in Economics (3-0-3). Applied work in economics with businesses or government organizations in the Emirates. Admission to class must be approved by the student's economics advisor. Only fourth-year students may take this course. *Prerequisite: ECO 301 and ECO 302. Recommended: ECO 405.*

ENG English

English Language

ENG 123 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. Topics covered include: grammar and appropriate usage, oral vs written language, formal vs informal language, standard vs non-standard languages, language universals and language typology. *Prerequisite: any COM 200 level course.*

ENG 126 Development of the English Language (3-0-3). Traces the development of the English language from its Indo-European roots to the present day. Linguistic change in English throughout the various periods (Indo-European; Germanic, Old, Middle and Modern English) is studied, covering phonological, morphological, syntactic, lexical and semantic changes. *Prerequisite: any COM 200 level course.*

ENG 222 Phonology and Morphology (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. Students also examine inflectional and derivational rules in language and study word formation processes. *Prerequisite: ENG 123.*

ENG 224 English Grammar (3-0-3). Focuses on the fundamental rules of English grammar as they relate to sentence structure and function. Students will also learn about different systems of analysis, including an introduction to the analysis of texts. *Prerequisite: any COM 200 level course.*

ENG 234 Language in Society (3-0-3). Introduces the student to the sociolinguistic approach to language. It focuses on issues about how language structure and language use are interrelated. It also examines variables responsible for language variation within a speech community. Definitions of language, dialect, diglossia and multilingualism are explored. The practicum component of this course initiates the student to field methods techniques in data collection. *Prerequisite: ENG 123.*

ENG 334 Semantics and Pragmatics (3-0-3). Students will be introduced to various approaches to the study of meaning in language both at the word and sentence levels. This course examines linguistic reference and truth conditions of linguistic signs and expressions. It also explores the role of shared inferential strategies, presuppositions and speech acts in human communication, and how situational context determines language use. *Prerequisite: ENG 224.*

ENG 336 Discourse Analysis (3-0-3). This course looks at the interpretation of meaning situated beyond the level of the sentence. To achieve a better understanding of how language works as a communication medium, the role of notions such as background knowledge, cohesion and coherence, in texts and conversational interaction are examined. *Prerequisite: ENG 224.*

ENG 338 Psycholinguistics (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 336.*

ENG 400 Second Language Acquisition (3-0-3). Focuses on the prominent research trends in second language learning, the process of L2 acquisition and learning, and the social and individual factors affecting this process. Examines ways in which research in this area can be used in ESL classroom

contexts. *Prerequisite: ENG 224 or consent of instructor.*

ENG 402 Applied Linguistics (3-0-3); alternate years. Investigates the relationship between the field of applied linguistics and the language communication process, in and outside the classroom. Views linguistics in terms of real world applications and from the perspective of teaching practitioners in different professional settings. *Prerequisite: ENG 336.*

ENG 404 Using Literary Texts in TEFL Classrooms (3-0-3). Introduces practicing teachers to the use of literature in teaching English in the more advanced levels of instruction. Early short stories and other selected texts would be used by teachers to motivate students to read and continue learning English by developing vocabulary and structure, and gaining an appreciation of literature. *Prerequisite: ENG 400 or departmental approval.*

ENG 406 Survey of Topics in Linguistics and Communication (3-0-3). Presents an overview of different trends in linguistic inquiry and examines how these trends have influenced various fields such as computational linguistics, lexicography, sign language, speech pathology, artificial intelligence and artificial voice communication. *Prerequisite: ENG 336.*

ENG 408 Reading and Writing in ESL/TEFL (3-0-3). Discusses various theoretical models dealing with teaching literacy skills in a foreign language to children and adults. Processes involved in reading and learning strategies in language learning are examined and discussed, together with effective instructional strategies based on current research. *Prerequisite: ENG 400 or consent of instructor.*

ENG 410 Language Teaching Methodology (3-0-3). Overviews theories, methodological approaches and techniques of teaching English as a Second or Foreign Language. Analyzes aspects of classroom practice, including teacher and learner roles. Offers opportunities to survey and create ESL/TEFL materials, evaluate commercially available texts and consider their value and adaptation of authentic texts. *Prerequisite: ENG 400 or departmental approval.*

ENG 412 Curriculum Development (3-0-3). Introduces students to principles of ESL/TEFL course design. Examines the stages of developing and evaluating learner centered/communicative curriculum. Topics to be discussed include: students' needs analysis, setting goals and objectives, analyzing resources, content selection, methodology, materials and texts, implementation, evaluation and assessment. *Prerequisite: ENG 410 or departmental approval.*

ENG 420 Seminar: Bridging the Disciplines (3-0-3). Introduces an interdisciplinary approach to the analysis of English language issues within the contexts of English literature, communication and translation. Develops students' understanding of how texts work across these three disciplines to heighten their understanding of critical issues that cross linguistic and cultural boundaries. *Prerequisite: consent of the instructor.*

ENG 495 Seminar in English Language (3-0-3). The content of this course changes from year to year. The focus will be on various topics of the English language from the practical such as computer-assisted language learning to studies in dialectology and bilingualism or linguistic anthropology. *Prerequisite: consent of the instructor and a GPA of at least 3.0 in the major.*

English Literature

ENG 105 Contemporary World Literature (3-0-3). Introduces students to contemporary literary movements such as postmodernism, magic, realism, feminism, regionalism and postmodernism. Students study 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: COM 203 or 204.*

ENG 108 Introduction to Genre (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. Whatever genre is featured in a given semester, the course will focus primarily on accessible modern and contemporary work. The course is designed for non-majors who need to fulfill their communications or humanities requirement as well as for English majors. *Prerequisite: COM 203 or 204.*

ENG 201 Creative Writing (3-0-3). This course is an introduction to the basic elements of writing and evaluating poetry, fiction and creative non-fiction, in which students will submit at least 20 pages of material suitable for inclusion in the student literary magazine. Students will also be responsible for editing the magazine. Fulfills writing requirement for majors. *Prerequisite: COM 203 or 204.*

ENG 203 Introduction to Literary Theory (3-0-3). Highlights a variety of twentieth century critical practices and theoretical approaches to the study of literature. It offers practical applications of the theoretical texts under examination. *Prerequisite: ENG 105 or ENG 108.*

ENG 205 Modern Drama and Beyond (3-0-3). Introduces students to developments in drama from the modern period to the present. It 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. The course may include works by such playwrights as Ibsen, Chekov, Shaw, Brecht, Ionesco, Beckett, Fornes, Helman, Hansberry, Hwang, Mishima, Soyenka, Havel, Mroczek, Gad and Wanoos. *Prerequisite: ENG 105 or ENG 108.*

ENG 209 Survey of English Literature I (3-0-3); fall. Surveys English literature (poetry, prose and drama) 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 105 or ENG 108 or consent of instructor.*

ENG 213 Survey of English Literature II (3-0-3). Surveys English literature (poetry, prose and drama) from the Romantic, Victorian and Modern literary periods. Representative texts are studied in relationship to their social, political and historical background. *Prerequisite: ENG 105 or ENG 108 or consent of instructor.*

ENG 219 Survey of American Literature I (3-0-3). Examines American literature from the colonial period to the present, concentrating on the philosophical, social and political issues that shaped the styles and ideas of such writers as Franklin, Poe, Emerson, Thoreau, Dickenson, Whitman, Twain, O'Neil, Cather, Hemingway and Faulkner. Focus is on poetry, drama, the essay and the short story. *Prerequisite: ENG 105 or ENG 108.*

ENG 303 Shakespeare and His Contemporaries (3-0-3). Examines works by both Shakespeare and a few other major writers in his time. It exposes students to Shakespeare's poetry, especially his sonnets, in relation to other major poets in his time such as Spenser, Sidney and Wyatt. The course will also introduce students to English Renaissance drama, exposing them to selections from histories, comedies, tragedies and romances by Shakespeare and some of his contemporaries such as Marlowe, Jonson, Middleton, Webster and Carey. A term paper is required. *Prerequisite: ENG 209.*

ENG 309 The American Novel (3-0-3). 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, Post Modernism and Magic Realism, with particular emphasis on how American novelists adapted these styles to suit their own society and culture. The course

will include such novelists as Melville, Hawthorne, Twain, Crane, James, Wharton, Cather, Hemingway, Welty, Pynchon and Morrison. Five novels will be studied. A term paper is required. *Prerequisite: ENG 219.*

ENG 311 Early English Novel (3-0-3). 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. It includes such writers as Defoe, Smollett, Richardson, Fielding, Austen, the Brontes, Dickens, Elliot and Hardy. *Prerequisite: ENG 209.*

Eng 313 Modern British Novel (3-0-3). Examines trends in the 20th century British novel, including such literary movements as Realism, Modernism and Post Modernism. It considers the novels of such authors as Joyce, Conrad, Wolfe, Forster, Lawrence, Snow, Greene, Byatt and Lessing. Five novels will be studied. A term paper is required. *Prerequisite: ENG 209.*

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. It also addresses the responses to and representations of westerners by non-western writers. Some of the writers studied may include Kipling, Forster, Durrell, Camus, Hersey, Kiteley, Desai, Shamas, Ghali, El-Saadawi, Kabbani, Adnan and Maalof. The course will introduce students to basic ideas in the writings of such post-colonial theorists as Said, Spivak, Mohanty, Mernissi and others. A term paper is required. *Prerequisite: ENG 201 or ENG 203.*

ENG 411 Seminar in English Literature (3-0-3). Examines in-depth the career of a single literary figure with particular interest in historical and cultural milieu. The needs and desires of students and the preferences of the instructor determine the literary figure. Among the literary figures typically considered are Spenser, Shakespeare, Milton, Dryden, Pope, Swift, Johnson, Blake, Byron, Keats, Austen, Dickens, Eliot and Joyce. *Prerequisite: consent of the instructor is required or ENG 311 or ENG 313.*

ENG 413 Seminar in American Literature (3-0-3). Focuses on the work of a major American writer and the critical assessment of that writer. Some of the writers to be studied may be Melville, Whitman, Dickinson, Twain, Faulkner, Cather, Hemingway, Welty, Frost or Morrison, as decided by the instructor. A critical paper will be required. *Prerequisite: ENG 309.*

ENG 415 Seminar in Post-Colonial Literature (3-0-3). Focuses on the work and the historical, political and social context of a major writer who was raised in a culture other than that of Britain or North America but who writes in English. It also examines the literary theories underlying the "subaltern voice" and the inclusion or exclusion of texts from the mainstream literary canon, with particular emphasis on the ideas of literary and cultural critics such as Edward Said and Gayatri Chabravorty Spivak . Some of the writers studied may include Derek Wollcott, Chinua Achebe, R.K. Narayan, V.S. Naipaul, Gita Mehta, and Michael Ondaatje. *Prerequisite: ENG 315.*

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 on this writer or movement. *Prerequisite: ENG 411 or ENG 413 or ENG 415.*

Environmental Studies

(See Biology, Chemistry and Physics)

FRN French

FRN 101 French For Beginners (3-0-3). For students who have never studied French. The course introduces the student to the main patterns of French grammar, written exercises, directed composition and conversation practice. Language lab may be required.

FRN 102 French Language and Culture for Upper Beginners (3-0-3). The course is a continuation of FRN 101 using French in Action (the Caprentz method) to improve students' conversational French, use of basic grammar patterns, everyday vocabulary and basic reading and writing skills. The course uses audio and video material to practice listening and speaking skills, and to facilitate the understanding of languages in social interaction and in a cultural context. *Prerequisite: FRN 101 or permission of instructor.*

HIS History and Cultural Studies

HIS 204 Modern Arab History (3-0-3). This course 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. It 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: COM 102.*

HIS 205 World History I [up to 1500] (3-0-3). A study of the world's major civilizations prior to 1500 concentrating on their primary institutions and their cultural contacts. Particular attention is devoted to the Arab and Islamic world and Western Europe. *Prerequisite: COM 102.*

HIS 206 World History II [1500 – 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: COM 102.*

HIS 207 History of Modern Palestine (3-0-3). A historical study of modern Palestine with particular emphasis on the conflict with Israel from its genesis in the late nineteenth century to the present. Students will examine the issues and events that led to the social, economic and political transformation of the Arab State of Palestine, with a majority Arab population, to the Jewish State of Israel, with a majority Jewish population. *Prerequisite: COM 102.*

HIS 208 Women in History (3-0-3). A comparative survey of women's history from antiquity to the present in Europe and the Middle East. The course aims not only to examine the lives, achievements, contributions and position of women historically, but also 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: COM 102.*

HIS 209 Modern Arab History through Literature (3-0-3). Introduces students to modern Arab history through literature and links literary production to its historical and cultural context. In this course, students become aware of how history and literature intersect and of the similarities and differences in historical and literary writing. The readings for the course include works of fiction and non-fiction such as novels, short stories, memoirs, biographies and auto-biographies. *Prerequisite: COM 102. (Formerly listed as HIS 394).*

HIS 210 The Modern Arab Gulf (3-0-3). Introduces students to the modern history of the Arab Gulf, which is the period from 1820 to post-independence, and the cultural heritage of the region. The major topics of the course are British imperialism and indigenous resistance to British domination, the socio-economic transformation of the region as the traditional economy based on pearling and trading goes into decline; the

rise of nationalism and the creation of the modern state system, and the impact of oil production on the society and culture. *Prerequisite: COM 102.*

CSC 201 Western Cultural Studies I (3-0-3). Introduces the student to the basic doctrines and concepts of Western civilization. It covers reading material from the Renaissance to modern times, focusing on selections from the great books that have made Western civilization what it is. It deals with readings that cover theology, politics, science and literature. *Prerequisite: COM 102.*

CSC 202 Western Cultural Studies II (3-0-3). Like CSC 201, this course continues the introduction of students to the basic doctrines and concepts of Western civilization. It covers reading material from modern and contemporary authors focusing on selections from the great books that have made Western civilization what it is. It deals with readings that cover theology, politics and literature. *Prerequisite: COM 102.*

IEP Intensive English

IEP 001 Novice Level (3 credits). At this level, instruction 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). In this course, language instruction 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 paragraph to the multi-paragraph essay. Complex grammatical concepts involving time relationships are also introduced, note-taking from authentic materials is practiced and oral presentations are given.

IEP 003 Intermediate Level (3 credits). At the intermediate level, 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). This course prepares students for university studies, though 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). This course 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 reviewed and thus, reinforced through large amounts of practice. The instruction includes an introduction to writing term papers.

MTH Mathematics

MTH 001 Preparatory Mathematics (3-0-3); a pre-calculus course. Polynomials, functions, exponents and logarithms, coordinate geometry and graphing, complex numbers, vectors and their basic operations.

MTH 002 Preparatory Business Mathematics (3-0-3). This course is preparatory to MTH 101 Mathematics for Business. It covers integers and variable expression, fractions, decimals and real numbers, polynomials, ratio and proportion, percentage, geometry and application.

MTH 003 Preparatory Mathematics for Architects (3-0-3). This course is preparatory to MTH 111, Mathematics for Architects. It covers a review of basic arithmetic. Algebra, geometry and trigonometry to prepare students for the geometry and calculus based MTH 111.

MTH 100 Fundamentals of Logic and Geometry (3-0-3). Covers logic and set theory, and geometry in the plane and space. Topics include: fundamentals of inductive and deductive reasoning, propositional and first order logic; sets, relations and functions; Euclidean and Analytical geometries in two and three dimensions; linear transformations and quadratic forms.

MTH 101 Mathematics for Business I (3-0-3). Coordinate systems and graphs, matrices, linear systems and applications, elementary linear programming, set theory, counting techniques, permutations and combinations, introduction to probability, topics in the mathematics of finance. Emphasis is placed on techniques and applications. *Prerequisite: MTH 002 or placement test.*

MTH 102 Mathematics for Business II (3-0-3). 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, applications to optimization. Emphasis is placed on techniques and applications. *Prerequisite: MTH 101.*

MTH 103 Calculus I (4-1-4). Functions and limits, differentiation with applications including maxima and minima, related rates, approximations, theory of integration with applications including areas, volumes, lengths, moments, center of mass and work. The course has a computer laboratory component. *Prerequisite: MTH 001 or placement test.*

MTH 104 Calculus II (4-1-4). Transcendental functions, exponential and logarithmic functions, trigonometric functions. Techniques of integration, indeterminate forms. Infinite series, power series, parametrized curves, polar coordinates and integration in polar coordinates. The course has a computer laboratory component. *Prerequisite: MTH 103.*

MTH 111 Mathematics for Architects (3-2-4). An introduction to the topics of geometry and calculus needed for architecture. Review of trigonometry, areas and volumes of elementary geometric figures, and the analytic geometry of lines, planes and vectors in two and three dimensions. Differential and integral calculus, including applications optimization, areas and volumes by integration. The course has a computer laboratory component. *Prerequisite: MTH 003 or placement test.*

MTH 203 Calculus III (4-1-4). 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. The course has a computer laboratory component. *Prerequisite: MTH 104.*

MTH 205 Differential Equations (3-0-3). 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 213/CMP 213 Discrete Mathematics (3-0-3). Covers prepositional and predicate calculus, sets, functions and related algorithms, mathematical induction, recursive definitions, counting, relations, graphs, trees and Boolean algebra. *Prerequisite: MTH 103.*

MTH 221 Linear Algebra (3-0-3). 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 311 Advanced Calculus I (3-0-3). The real number system. Rigorous presentation of limits, continuity, differentiability and Taylor's theorem for functions of a real variable. Definition, existence and properties of the Riemann integral. *Prerequisite: MTH 203.*

MTH 313 Number Theory and its Applications (3-0-3). 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. Applications in communication, public key cryptography, computer arithmetic, random number generators and music. *Prerequisite: MTH 213.*

MTH 314 Combinatorics (3-0-3). Techniques for counting configurations of objects, recurrence relations, principle of inclusion-exclusion; graphs, trees and circuits. Additional topics include Polya's Theorem, generating functions and network flows. *Prerequisite: MTH 213.*

MTH 320 Modern Algebra (3-0-3). Groups, subgroups, normal subgroups, quotient groups, homomorphisms, permutation groups, matrix groups, symmetry groups. Definition and examples of rings. *Prerequisite: MTH 213 and MTH 221 or consent of the instructor.*

MTH 325 Coding Theory I (3-0-3). Introduction to 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, convolutional codes, encoding and decoding. *Prerequisite: MTH 221 or consent of the instructor.*

MTH 341 Numerical Computing (3-0-3). Elementary discussion of error; root finding, interpolation and approximation of functions; numerical differentiation and integration; solving initial value problems in ordinary differential equations. The algorithmic approach and the efficient use of the computer are emphasized. *Prerequisite: CMP 120 or the consent of the instructor and MTH 104.*

MTH 342 Numerical Linear Algebra (3-0-3). Direct and iterative methods for solving general and special systems of linear equations, includes LU and Choleski decomposition, nested dissection, Jacobi, Gauss–Seidel, successive overrelaxation, alternating directions and conjugate gradient methods. Singular value decomposition. Iterative methods for algebraic eigenvalue problem. *Prerequisite: MTH 221.*

MTH 351 Methods of Applied Mathematics I (3-0-3). Initial and boundary value problems. Higher–order equations, the Laplace transform and its inverse, applications of Laplace transform to linear ordinary differential and integral equations, the z-transform, applications of z-transform to difference equations and linear networks. *Prerequisite: MTH 203 or MTH 205.*

MTH 352 Methods of Applied Mathematics II (3-0-3). Fourier series, the Fourier transform, inverse Fourier transform, introduction to partial differential equations, classification of second-order partial differential equations, initial and boundary value problems, the method of separation of variables, methods of solution and behavior of elliptic, parabolic and hyperbolic equations. *Prerequisite: MTH 351 or MTH 205.*

MTH 381 Linear Control Systems (3-0-3). Linear systems, time and frequency domain representation, open and closed loop systems, time and frequency domain analysis, stability, root locus, frequency response, compensators, output and state feedback. *Prerequisite: MTH 205.*

MTH 382 Linear Programming (3-0-3). Methods and applications of optimizing a linear function subject to linear constraints. Theory of the simplex method and duality, parametric linear programs, sensitivity analysis, modeling and computer implementation. *Prerequisite: MTH 221.*

MTH 411 Advanced Calculus II (3-0-3). Theory of sequences and series of numbers and functions; power series, topological structure of Rn; continuity, differentiation, and integration of real functions of several variables, chain rule, Taylor's theorem, Fubini's theorem, differentiation of integrals involving a parameter. *Prerequisite: MTH 311.*

MTH 412 Complex Variables (3-0-3). A first study of 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 problems. *Prerequisite: MTH 311.*

MTH 418 Graph Theory (3-0-3). Graphs and subgraphs, connected and disconnected graphs, matrices, trees and girth, planar and nonplanar graphs, graph embeddings, connectivity and edge connectivity, Hamiltonian graphs, matchings, factorization and coverings, Networks, applications to science and engineering. *Prerequisite: MTH 213.*

MTH 421 Applied Matrix Theory (3-0-3). Review of the theory of linear systems, eigenvalues and eigenvectors, the Jordan canonical form, bilinear and quadratic forms, matrix analysis of differential equations. Variational principles and perturbation theory: the Courant minimax theorem, Weyl's inequalities Gershgorin's theorem, perturbations of the spectrum, vector norms and related matrix norms. *Prerequisite: MTH 221.*

MTH 431 Dynamical Systems (3-0-3). Second order differential equations in phase plane, linear systems and exponential operators, canonical forms, stability of equilibria. Lyapunov functions, the existence of periodic solutions, applications to various fields. *Prerequisite: MTH 221 and MTH 205.*

MTH 432 Partial Differential Equations (3-0-3). 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 351 and MTH 352.*

MTH 441 Numerical Solutions of Ordinary Differential Equations (3-0-3). Theory of numerical techniques for linear and nonlinear initial, boundary-value and eigenvalue problems. Stiff equations and multiple time scales. The analysis of the numerical techniques will focus on consistency, accuracy, stability, stiffness, numerical efficiency, etc. *Prerequisite: MTH 342.*

MTH 442 Numerical Solutions of Partial Differential Equations (3-0-3). Computationally efficient schemes for solving PDE numerically: finite difference schemes, stability and convergence of finite difference schemes, an introduction to finite element methods. *Prerequisite: MTH 441.*

MTH 451 Methods of Applied Mathematics III (3-0-3). Integral equations, volterra and Fredholm type equations, relation to differential equations, solutions by Neumann series, Green's function, asymptotic analysis of solutions, perturbation techniques connection with eigenvalue problems. *Prerequisite: MTH 351.*

MTH 460 Mathematical Logic (3-0-3). The formal study of truth and provability, propositional calculus; predicate calculus, Godel's completeness theorem, applications to formal number theory and incompleteness. Additional topics chosen from areas such as undecidability or nonstandard analysis. *Prerequisite: MTH 320.*

MTH 465 Topics in Mathematics (3-0-3). Topics of current interest in mathematics not covered in existing courses. May be repeated under a different subtitle. *Prerequisite: junior or senior standing and consent of instructor.*

MTH 470 Modeling and Simulation (3-0-3). Basic principles of modeling and simulation, description and treatment of deterministic and random processes, computational methods and applications with emphasis on the use of microcomputers. The course will include a major project. *Prerequisite: MTH 205.*

MTH 481 Calculus of Variations and Control Theory (3-0-3). An introduction to the classical theory of calculus of variations, necessary and sufficient conditions for optimality, the Pontryagin maximum principle, dynamic programming in continuous-time and Hamilton-Jacobi theory, introduction to control theory, the linear regulator problem. *Prerequisite: MTH 205.*

MTH 483 Discrete Optimization (3-0-3). Theory and applications of discrete optimization algorithms, transportation problems and network flow problems; integer programming; computer implementation. *Prerequisite: MTH 382.*

MTH 495 Seminar in Mathematics (3-0-3). Investigation of and oral report on a mathematical topic under the direction of a faculty member. *Prerequisite: junior or senior standing and consent of instructor.*

MTH 496 Independent Study (1-6). Involves investigation of special topics, under faculty supervision, beyond what is offered in existing courses. *Prerequisite: junior or senior standing and consent of instructor.*

PHI Philosophy

PHI 201 Introduction to Philosophy (3-0-3). An introduction to basic issues and concepts of philosophy; e.g., epistemology, ethics, classical idealism, naturalism, humanism, existentialism, ontology, ethics, skepticism, post-modernism or phenomenology. Thinkers will be selected from the classic, modern and contemporary periods. *Prerequisite: COM 102N.*

PHI 202 Introduction to Islamic Philosophy (3-0-3). This course is an introductory survey of major philosophers in Islam: for example, Al-Ghazzi, Ibn Rashid, the Sufis or Al-Farabi. Focus will be on the concepts of religious and philosophical doctrines. *Prerequisite: COM 102N.*

PHI 203 Political Philosophy (3-0-3). An introduction to the abiding questions of a civil society, pertaining to freedom, equality, justice, glory, power, law, nature, convention and civic virtue. (Cross-listed with POL 203). *Prerequisite: COM 102N.*

PHI 204 Ethics for Professionals (3-0-3). Examines the ethical duties of professional practice, in such fields as engineering, architecture, business, public administration, or environmental science. The emphasis will be on developing a framework for moral thinking and judging; and becoming aware of the moral viewpoint of others. Focus on case studies, which evoke conflicts between personal convictions, and public responsibilities. A special concern will be an emphasis on how institutions may support or inhibit professionals in exercising moral leadership and making moral choices. *Prerequisite: COM 102N.*

PHY Physics

PHY 001 Preparatory Physics (3-0-3). A preparatory course designed to teach concepts of physics in mechanics and wave behavior with a brief introduction to electricity and magnetism. The course will give students an opportunity to review algebra and trigonometry in problem-solving. An introduction to vector analysis and calculus will also be presented via problem-solving.

PHY 100 Conceptual Physics (3-0-3). An introductory course for non-science and non-engineering majors designed to give the student an understanding of the basic concepts of physics, models and the scientific method of reasoning based on experimentation. The course presents a conceptual view of physics, straightforwardly descriptive and without complex mathematics. The course covers selected topics in classical mechanics, electricity and magnetism, waves and light, and modern physics. *Not open to Science or Engineering students.*

PHY 101 General Physics I (3-3-4). A calculus-based introductory course for scientists and engineers covering the fundamental principles, laws and concepts of physics. The course will cover mechanics and mechanical waves. Laboratory includes experiments illustrating the principles, laws and concepts discussed in the course. *Prerequisite: PHY 001 or Placement. Co-requisite: MTH 103.*

PHY 102 General Physics II (3-3-4). A continuation of PHY 101. Topics to be covered are electricity and magnetism, and light and optics. Laboratory includes experiments illustrating the principles, laws and concepts discussed in the course. *Prerequisite: PHY 101.*

PHY 103 Astronomy (3-0-3). Presents a broad view of descriptive astronomy without complex mathematics. The course consists of: charting the heavens, studying the celestial coordinates and the motion of heavenly bodies, and studying the tools of astronomers. It also includes studying our planetary system, stars and stellar evolution, galaxies and cosmology.

PHY 104 Physics for Architects (3-0-3). A general physics course, based on algebra and elementary calculus, with selected emphases appropriate to the background and needs of architecture students. Mechanics: kinematics, momentum, acceleration, friction, heat transfer. Optics: reflection, refraction, dispersion, interference, geometrical optics. Sound: general principles of acoustic phenomena, including the propagation, transmission, amplification attenuation of sound energy. Structure of wave-forms: amplitudes and frequencies. Taught in the Department of Physics. *Prerequisite: MTH 111 or consent of the instructor.*

PHY 201 Modern Physics (3-3-4). A course designed for science and engineering majors to introduce topics in relativity, quantum theory, atomic and nuclear physics, and solid state and semiconductor physics. The course will show how modern physics has led to a multitude of important technological achievements, such as the laser, integrated circuits and computer displays. Laboratory includes experiments illustrating the principles, laws and concepts discussed in the course. *Prerequisite: PHY 102.*

PHY 202 Environmental Physics I (3-0-3). Provides a quantitative introduction to specific areas of environmental physics as well as a qualitative understanding of the role of the physicist in environmental science. The syllabus includes: an introduction to environmental physical science; environmental impact assessments; particle physics (water and air systems, size, shape, distribution, settling, dispersion); sound and noise; radiometry and photometry; radioactivity (radioactive decay, half-life, dose units, anthropogenic and natural sources); fluid statics (hydrostatic pressure, forces and torques on dams, surface tension); waves, water waves, water and air turbines; an introduction to meteorology and climatology (hydrologic cycle, heat transfer). *Prerequisite: PHY 102.*

PHY 301 Energy Sources (3-0-3). Energy is studied from the physics perspective. The following present and future alternative energy sources are examined: the fossil fuels (oil, natural gas and coal), hydroelectric, nuclear (fission, fusion and the breeder reactors), solar (heating and cooling, photovoltaic, ocean thermal gradient and wind), geothermal and tides. The course also investigates the pollution caused by each energy source and the role that conservation plays in the overall energy picture. *Prerequisite: PHY 102.*

PHY 302 Environmental Physics II (3-3-4). Discusses the physical nature of selected processes and problems occurring in the close and natural environment. Aspects of human comfort will also be considered. The syllabus includes: radiation protection,

illumination and lighting, solar radiation and instrumentation (solar and terrestrial radiation, radiation balance, radiation measurement), noise pollution and acoustics and ultrasonics. Laboratory includes experiments illustrating the principles, laws and concepts discussed in the course. *Prerequisite: PHY 202.*

PHY 303 Computational Physics (3-3-4). Presents a general overview of numerical methods useful in the sciences. Mathematical topics are developed as needed. Topics to cover include numerical differentiation and integration, computation of special functions (Bessel functions etc.), matrix methods, solution of differential equations by Euler, Runge-Kutta and adaptive step-size methods. The course includes a three hour computer lab. The C++ programming language is introduced as needed. *Prerequisite: MTH 203 and PHY 201.*

PHY 304 Issues in Environmental Physics (3-0-3). Concentrates on the physics of the most pressing global environmental problems. The topics covered in this course include: population growth effect upon resource depletion, natural resources and its depletion, atmospheric pollution, green house gases and global climate change on Earth, physical principles involved in climate modeling, UV radiation, water pollution.

PHY 391 Physics Information Sources (1-0-1). The various sources of physical literature are introduced with an emphasis on Web physical sources and databases. *Prerequisite: PHY 102.*

PHY 401 Environmental Modeling (3-0-3). Involves the study of the collection, evaluation and interpretation of data and the modeling and analysis of urban and environmental problems. Topics include population, pollution, mass transportation systems and climate modeling. *Prerequisite: PHY 303.*

PHY 490 Project (0-12-6). Students develop the objectives and scope of the research and conduct appropriate analytical and experimental (field and/or laboratory) studies. Results and conclusion of the project are summarized in a report and defended orally.

POL Political Science

POL 200 Globilization (3-0-3). The process of globalization is well underway at all levels of society, with socio-political impacts on all cultures. An introduction to the globalization of economic systems, multi-national organizations, technological, consumerism and world-wide communication systems. *Prerequisite: COM 102.*

POL 201 Introduction to Political Studies (3-0-3). An introduction to the science of politics, including an examination of the nature of government and public policymaking. Focus on the processes of government, including public administration, foreign policy and international relations. *Prerequisite: COM 102.*

POL 202 International Relations (3-0-3). The concepts of power, realpolitik, diplomacy, globalization of economics, peace and war, will be examined in the context of relations between nation-states. The focus will include the United Nations, international crises, world trade, poverty, the environment, disease and public corruption. *Prerequisite: COM 102.*

POL 203 Political Philosophy (3-0-3) *(Cross-lised as PHI 203).* An introduction to the abiding questions of a civil society, pertaining to freedom, equality, justice, glory, power, law, nature, convention and civic virtue. (Cross-listed with PHI 203). *Prerequisite: COM 102.*

POL 204 International Organizations (3-0-3). An introduction to 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: COM 102.*

POL 205 Public International Law (3-0-3). An examination of 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. Selected legal institutions, like the International Court of Justice in The Hague, and other tribunals, dealing with international disputes will be analyzed. *Prerequisite: COM 102.*

POL 300 Comparative Chief Executives of Nation-States (3-0-3). An analysis of the legal framework, and political power relationships, between heads of government, vis a vis parliaments, and/or national public bureaucracies, in the East and the West. Focus will be on executive privilege, administrative discretion, legislative oversight, separation of powers, rule of law and an independent judiciary. *Prerequisite: COM 102.*

PSY Psychology

PSY 101 General Psychology (3-0-3). Topics include: 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: COM 102.*

PSY 102 Social Psychology (3-0-3). Focuses on the impact of group dynamics on individual behavior. Topics to be discussed include: the nature and methodology of social psychology research and various major theoretical concepts, including childhood development and socialization, causality attribution, attitude formation, anti-social behavior, interpersonal attraction and intimacy and the social effects and function of groups. Particular emphasis will be placed on the application of social psychology concepts in the workplace. *Prerequisite: COM 102.*

PSY 202 Abnormal Psychology (3-0-3). Examines the symptoms and causes of various types of psychological disorders – particularly the neurotic, psychotic and mood disorders. Diagnoses, suggested treatments, advantages and disadvantages of classifications schemes, and examinations of organic (i.e., genetic) and learning factors in the development of mental illness are among the topics that will be discussed. This course will be of particular interest to all students who wish to understand the underlying causes, and suggested treatments, of a wide range of mental illnesses, including depression, schizophrenia, anxiety disorders and other illnesses. *Prerequisite: COM 102.*

PBA Public Administration

PBA 101 Introduction to Public Administration (3-0-3). An introduction to 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 108 Communication and Mobilization of Interpersonal Relationships in Public Organizations (3-0-3). An introduction to the concepts of symbolic interactionism, organizational communication, building interpersonal relationships in the workplace; and the public management perspective of the social and psychological aspects of public organizations.

PBA 201 Public Management (3-0-3). An introduction to the contemporary techniques of management and leadership in public organizations. Problems of public agencies, nonprofit organizations and others will be analyzed; with a focus on how to cope with the challenges, internal and external, which the top level of management faces. *Prerequisite: PBA 101.*

PBA 204 Women in Public Management (3-0-3). An examination and analysis of the emerging role of women in management positions in government, business and nonprofit organizations. Unique problems and challenges which may be related to gender including: building effective management, teamwork and espirit de corps in the context of a diverse workforce. *Prerequisite: PBA 101.*

PBA 205 Intergovernmental Relations (3-0-3). The political, fiscal, administrative relationships, which help to shape complex intergovernmental systems. Focus on federal, centrally unified, Emirate (provincial), municipal and other jurisdictions. *Prerequisite: PBA 101.*

PBA 206 Motivation, Employee Development and Performance Appraisal in Public Organizations (3-0-3). Consideration of the theories of motivation, productivity, development of the self, and self-fulfillment in the workplace. There will be a study of models of performance appraisal and employee rehabilitation and employee assistance programs. *Prerequisite: PBA 101.*

PBA 301 Public Management Skill Modules (3-0-3). Focuses on leadership, communication, techniques of motivation, delegation of authority and strategic planning. *Prerequisite: PBA 101.*

PBA 302 Comparative Public Administrative Systems (3-0-3). An examination of governmental administrative systems in Europe, North America, the Arab world, Asia and Africa. The emphasis is on a comparative analysis of industrialized nations with nations of the Third World. *Prerequisite: PBA 101.*

PBA 304 Public Budgeting (3-0-3). A survey of 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. *Prerequisite: PBA 101.*

PBA 305 Classification, Job Analysis, Compensation and Fringe Benefits in Public Organizations (3-0-3). Classification systems and techniques, rational job analysis, compensation and incentive plans, and fringe benefit management, as aspects of achieving maximum organizational efficiency and effectiveness. *Prerequisite: PBA 101.*

PBA 306 Human Resources Management in Public Organizations (3-0-3). An introduction to management and leadership tasks of running a professional-level, human resources subsystem. Focus will be on the challenges, opportunities, and strategies, which human resources managers face, including the dynamics of external and internal conflict resolution, and acting in an advisory capacity to executive-level managers. *Prerequisite: PBA 101.*

PBA 307 Recruitment, Selection, Promotion, Retention and Disciplinary Actions in Public Organizations (3-0-3). Techniques for the mobilization of a workforce; affirmative recruiting, incentive plans for long-term service, grievance procedures; concepts of probation, reprimand, suspension and termination. *Prerequisite: PBA 101.*

PBA 308 Executive and Middle Management Training in Public Organizations (3-0-3). Techniques of training others to be proficient executive-level and middle-level managers. Emphasis will be on creative formats, learn-by-doing techniques, case study analysis, hands-on interaction with peers, management inventory approaches, coping with social change, role-playing, effective dealing with failures, leveling communication with others. *Prerequisite: PBA 101.*

PBA 310 Research in Public Administration (3-0-3). An introduction to research methods in public administration. Research design, the concept of validity, data collection and data analysis. *Prerequisite: PBA 101.*

PBA 311 Nonprofit Organization Management (3-0-3). Concepts of management and organizational development, which are appropriate to the nonprofit sector. Emphasis will be on developing people skills, a volunteer workforce, fundraising, goal-setting, motivation and communication techniques. *Prerequisite: PBA 101.*

PBA 312 Competition, Free Markets and Antitrust (3-0-3). *(Cross-listed as ECO 327).* Concepts of free markets, competition for trade, monopoly, oligopoly, vertical integration, price fixing, cartels, vertical restrictions, price discrimination and predatory pricing. *Prerequisite: PBA 101.*

PBA 313 Government Regulation of Business (3-0-3). *(Cross-listed as ECO 328).* Examination of the reasons why governments regulate business. Attention will be given to contemporary legal issues and case studies in the West and in the UAE. *Prerequisite: PBA 101.*

PBA 314 Economics and the Law (3-0-3). *(Cross-listed as ECO 326).* Major topics include property rights, contract rights and liability rules. Both efficiency and fairness will be analyzed. For efficiency, emphasis is placed upon the incentive effects that legal rulings create for economic behavior in the future. Fairness is analyzed mostly in terms of the effects which legal rulings have upon the distribution of wealth. *Prerequisite: PBA 101.*

PBA 380 Special Topics in Human Resources Management (3-0-3). An in-depth focus on selected contemporary human resources trends, the impact of social changes and workforce demographics, or contemporary problems in human resources management, in the Middle East, Asia, Europe and the U.S. *Prerequisite: PBA 101.*

PBA 402 Local and Regional Administration (3-0-3). Survey of the structure, function and process of administration in a local government setting and regional levels. Focus on the unique challenges public organizations face, with respect to national issues, local issues, funding, social groups, environmental pollution and politics. *Prerequisite: PBA 101.*

PBA 407 Legal Issues in Public Administration (3-0-3). An introduction to legal issues facing public managers; including risk management, due process for employees, judicial review aspects, administrative ethics and personal liability. *Prerequisite: PBA 101.*

PBA 408 Development Management (3-0-3). The concepts and techniques of development administration with a focus on Third World nations and societies which are pre-eminently concerned with basic economic development, capital formation and exports. *Prerequisite: PBA 101.*

PBA 410 Public Program Evaluation (3-0-3). An introduction to the elements of program evaluation in public organizations. Qualitative and quantitative analysis; valid methods. *Prerequisite: PBA 101.*

PBA 411 Foundations of Public Policy Analysis (3-0-3). An examination of the public policy process in the Middle East and the West. Focus on concepts of externalities, risk and uncertainty, and public choice models in public policy analysis. *Prerequisite: PBA 101.*

PBA 413 Public Financial Analysis (3-0-3). How to analyze the financial health of state and local governments and other organizations, and develop remedies for financial problems. Financial condition is related to expenditures, revenue, borrowing, the economic base, needs of the community, capital markets and public employees. *Prerequisite: PBA 101.*

PBA 415 Law and Public Policy (3-0-3). An analysis of selected public policy issues such as: poverty, population, density, housing, transportation, energy, education, crime or environmental pollution. The response of laws and regulations to social problems, and the political processes which affect governmental decision making. *Prerequisite: PBA 101.*

PBA 417 Public Finance (3-0-3). Public revenue sources for public organizations. Examines the concepts of taxation, export sales revenues, public accounting systems, auditing and maximizing the search for additional revenue funds. *Prerequisite: PBA 101.*

PBA 419 Seminar in Executive-Level Public Management (3-0-3). A specialized course which concentrates on identifying the tasks, challenges and responsibilities of being a CEO, a CAO or an executive director of an organization. *Prerequisite: PBA 101.*

PBA 497 Internship in a Public Organization (3-6). Placement of students by a Public Administration professor in a government agency, a nonprofit organization or a private firm. The emphasis will be on administrative-level, hands-on, experience, which will benefit the agency and the student. A written report, a daily journal and an agency supervisor's evaluation are required. *Prerequisite: PBA 101.*

SOC Sociology

SOC 101 Introduction to Sociology (3-0-3). Introduces the basic concepts and models of sociology, including: functionalism, conflict theory and symbolic interaction theory. The sociology of the family, organizations, social systems, religion and social movements will be examined. Concepts, such as, social inequality, social deviance, culture, social structure, socialization, social stratification, poverty, gender, the environment and power will be introduced. *Prerequisite: COM 102.*

SOC 202 Environmental Sociology (3-0-3). An introduction to the critical issues entailed in the reciprocal relations between human populations and the environment. The environment, broadly defined, includes the air, the water, the plant-life, animals; and the economic, aesthetic, political and social mores, aspects of the human culture. An analysis of social change and public policy that affects environmental degradation and natural resources depletion, and the social groups which affect the protection of the environment. *Prerequisite: COM 102.*

SOC 380 Sociology of Urban Politics (3-0-3). An analysis of cities and the suburban areas, including the community power structure, the inequalities of wealth, and the problems of transportation, housing, poverty, homelessness, crime, social class, social change, racism, public health and education. A special focus on the politics of public service delivery systems related to economic development policies and redistribution policies. *Prerequisite: COM 102.*

STA Statistics

STA 201 Introduction to Statistics for Engineering and Natural Sciences (4-0-4). Descriptive statistics; probability distributions; estimation; hypothesis testing; mean and variance tests; analysis of variance; simple regression and correlation; and the use of statistical computer software.

STA 202 Introduction to Statistics for Social Sciences (4-0-4). Acquisition and development of statistical methodes that are commonly used in social sciences. Methodes include: techniques for classification of data, descriptive statistics; probability distributions; estimation; hypothesis testing; analysis of variance; nonparametric techniques; simple regression and correlation; and the use of statistical computer software.

STA 360 Engineering Statistics (3-0-3). Probability model; random variables and probability distributions; mathematical expectation; sampling distributions and designs; introduction to random processes in engineering; discrete and continuous models with applications; product reliability; robust design and quality control. *Prerequisite: MTH 104 and STA 201.*

STA 361 Probability and Statistics I (3-0-3). Random variables and their probability distributions; moments and generating functions; random vectors; some special distributions; limit theorems; sample moments and their distributions; the theory of point estimation. *Prerequisite: MTH 104 and STA 201.*

STA 362 Probability and Statistics II (3-0-3). Theory of testing of hypotheses (Neyman-Pearson, likelihood ratio, etc.); some further results on hypotheses testing; confidence estimation; the general linear hypothesis; nonparametric statistical inference; sequential statistical inference. *Prerequisite: STA 361.*

STA 380 Applied Statistics with Applications in Economics (3-0-3). Estimation, inference, multiple regression and correlation; elementary decision theory; introduction to time series; quality control techniques; applications in economics such as organization and interpretation of economic data, analysis of price, production and income data. *Prerequisite: STA 201.*

STA 401 Regression Analysis (3-0-3). Simple and multiple regression; least squares; curve fitting; graphic techniques; diagnostics and remedial measures (topics include multicollinearity, autocorrelation, problems with the model); polynomial models; intrinsically linear and nonlinear models; the general linear model; categorical response variable. *Prerequisite: STA 201.*

STA 450 Introduction to Stochastic Processes (3-0-3). Introduction to random walk, Markov chains and processes; birth and death processes, Poisson processes, renewal theory, Brownian motion, Gaussian processes, white noise, spectral analysis; queuing systems and applications. *Prerequisite: STA 361 or STA 360.*

STA 460 Applied Time Series Analysis (3-0-3). An introduction to the theory of time-dependent data; moving average and autoregressive processes; spectral theory and filtering; some large sample theory; estimation of the mean and autocorrelations; the periodogram, estimated spectrum; parameter estimation; regression, trend, and seasonality; unit roots; applications from economics, finance, engineering and others. *Prerequisite: STA 361 or STA 380.*

STA 470 Applied Multivariate Statistics (3-0-3). Aspects of multivariate analysis with applications; matrix theory and random vectors; sample geometry and random sampling; multivariate normal distribution; test of hypotheses; multivariate analysis of variance; multivariate regression; analysis of covariance structure (topics include: principal components, factor analysis, discriminant analysis, canonical correlation); classification and grouping techniques. *Prerequisite: STA 361 or STA 401.*

STA 480 Sampling Techniques (3-0-3). Theory of probability sampling and survey designs; methods for determining expected value, bias, variance; unrestricted random sampling, stratified sampling, cluster sampling, multistage or subsampling, ratio estimates, regression and composite estimation, double sampling; introduction to measurement error and comparison of alternative designs. *Prerequisite: STA 201.*

TRA Translation and Interpreting

TRA 101 Introduction to Translation (3-0-3). Aims to familiarize students with the field of translation and the skills necessary to work as successful translators. Emphasis is placed on 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.

TRA 102 Practical Issues in Translation (3-0-3). Integrates both theory and practice: What is translation and how can it be studied most effectively? The course addresses in some detail the issues involved in the process of translating a text, the various kinds of translation and how translators deal with problems of text in

context. The course also focuses on the professional translator, the pre-translation techniques needed for analyzing a text and the final stage of assessing the end-product. *Prerequisite: TRA 101.*

TRA 201 Theoretical and Practical Issues in Translation (3-0-3). Views translation practice as seen in the light of various theories and models of translation. Theories informed by modern linguistics, cultural studies and literary criticism are invoked with the aim of sensitizing the translator to the intricacies of the task. Throughout, the key notion of 'equivalence' is assessed and examined at various levels of language organization (word level, sentence level, text level, pragmatics, etc.) Issues covered include the translation of metaphor and idiomatic expressions, dealing with meaningful repetition, biased translation shifts. *Prerequisite: TRA 102.*

TRA 203 Modern Media Translation and Interpreting (3-0-3). Focuses on those modes and situations which relate to the translation and interpreting of the non-print media, film and television. Areas covered include: transcription and translation of narration and dialogue; translation of film scripts and sound tracks; subtitling; dubbing; interpreting for documentary and feature films, TV newscasts, video clips and commercials, teleconferences, telephone communication. Work on advertising, the translation of PR and promotional literature, publicity materials, etc. is also included. *Prerequisite: TRA 101.*

TRA 302 Contrastive Analysis (3-0-3). Examines the theoretical and practical principles of contrastive analysis and introduces students to basic techniques of identifying significant differences between English and Arabic. The comparison and contrasts established will span the entire spectrum from the level of words and sentences to discourse and genre. The interface between two or more languages will be viewed from linguistic and literary perspectives for a range of applications in translation and interpreting. *Prerequisite: TRA 201.*

TRA 303 Interpreting I: Focus on the Community (3-0-3). Introduces interpreting and distinguishes this skill from translation. The course is intended to develop the basic professional skills of Liaison Interpreting, with special emphasis on community interpreting (doctor-patient, court, official transactions). Other areas covered include business meetings, diplomatic/political negotiations, press interviews. The course aims to prepare students for these interpreting situations 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. *Prerequisite: TRA 201.*

TRA 305 Interpreting II: Focus on the Profession (3-0-3). Presents interpreting as a profession and prepares students for practical work. Students are introduced to different professional environments, professional ethics, interpersonal relations and conference organization. Consecutive interpreting is introduced, and notetaking techniques refined. In addition to the usual settings of court or doctor-patient interpreting, students receive training in organizing and convening a forum, selecting topics and delegates and interpreting formal and informal (e.g. after-dinner) speeches. *Prerequisite: TRA 303.*

TRA 401 Translation Evaluation and History (3-0-3). Aims to explore the conceptual map of translation studies and to reflect on important points in the history of translation. Emphasis is placed on both Western and Eastern translation traditions and on the role of translation in the development of culture and identity. Translation evaluation is introduced, and rigorous assessments schemes worked out. The course will draw on both literary and non-literary materials, as well as technical and non-technical texts. *Prerequisite: TRA 301.*

TRA 494 Special Topics in Translation (3-0-3). Focuses on salient issues in the theory and practice of translation and interpreting. Various themes are selected, and the arguments for and against the various proposals examined. Topics will differ in subject matter and scope, invoking paradigms ranging from linguistics to cultural studies, feminist translation and deconstruction. *Prerequisite: TRA 401.*

TRA 498 Applied Research (3-0-3). Introduces students to multidisciplinary research on translation and interpreting, and explores the relevance of this theoretical work to individual practice. Students identify salient issues in translation and interpreting, and design and conduct action research projects based on a practical situation and the state of current research in the chosen area. *Prerequisite: TRA 494.*

School of Architecture and Design

ARC Architecture

Courses listed below in the Architecture Program are described in several degrees of depth: full descriptions are presented only for courses to be taught by the end of the current academic year 2000-01. The remainder of the core curriculum is presented in abbreviated descriptions which indicate the basic scope and content of the intended courses. Elective courses are identified by title only. Listings illustrate anticipated offerings. Full descriptions will be provided in subsequent catalogs as the curriculum matures.

ARC 201 Architectural and Interior Design Studio I (10.5-0-5). *(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. *Prerequisite: admission to the professional programs in Architecture or Interior Design, DES 100, DES 112, DES 121 or 122, DES 131, 132, MTH 003 or 111.*

ARC 202 Architectural and Interior Design Studio II (10.5-0-5). *(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. *Prerequisite: ARC 201.*

ARC 212 Analysis and Methods in Architecture (3-0-3). Introduction to 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: Admission to the Architecture or Interior Design Programs, DES 100.*

ARC 215 Descriptive Geometry (4-0-3). Introduction to concepts and practices of the precise description of form in space. 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: DES 100, DES 111 or consent of department.*

ARC 220 Modern Foundations of Art and Architecture (3-0-3). Principles and practices fundamental to an understanding of the art and architecture of the modern era. Presentation integrates history and theory with practical design application and proceeds topically, rather than chronologically. *Prerequisite: DES 121, 122.*

ARC 222 Traditional Architecture of the Region (3-0-3). Analysis of the physical and cultural determinants of traditional architecture in the Arab region, followed by a detailed review of traditional Gulf architecture, including planning principles, building types, construction methods and decorative aspects. The impact of industrialization and globalization will be discussed. Field trips and selected building surveys will give students hands-on experience with traditional architecture and current heritage preservation efforts. *Prerequisite: DES 121, 122.*

ARC 222 F Field Research in Traditional Architecture (2-12-6). *Prerequisite: ARC 222.*

ARC 231 Survey of Materials and Practices in Construction (2-3-3). Broad survey of 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. Taught utilizing 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.

ARC 240 Structural Principles: Statics and Strength of Materials (2-3-3). *(Cross-listed as CVE 272).* Introduction to the graphic and mathematical description of structural behavior, as well as to the structural properties of the various materials used in typical architectural construction. Includes discussion of material quality and performance within the context of international standards (DIN, ISO, etc.). Taught in Department of Civil Engineering. *Prerequisite: PHY 104.*

ARC 301 Architectural Design Studio III (12-0-6). Investigations in the spatial, structural, environmental and visual design of specific site projects. Exploration of the syntax of architecture and advanced means of representation. Structure and controlled environments are studied as an integral part of design. Several individual problems per course. *Prerequisite: ARC 202, ARC 220 and PHY 104.*

ARC 302 Architectural Design Studio IV (12-0-6). Continuation of ARC 301, with emphasis on investigation of urban programs and sites, requiring not only the integration of form, structure, space and technologies, but the consideration of specific contextual issues of physical form and activities. Fundamental urban design and planning issues, methods and techniques included. Several individual problems per course. *Prerequisite: ARC 301.*

ARC 310 Modeling and Rendering (4-0-3). Presents a rationalized, geometrical approach to the conception and description of form. Selected examples of architectural form are first rigorously analyzed to re-derive their constructional logic, then 'built' as detailed electronic models. Students explore the potential of digital design technologies as instruments to achieve vivid, authentic, holistic simulations of architectural reality, appropriate to the testing of architectural ideas. Taught in a modified studio format. *Prerequisite: DES 100, ARC 215, or consent of department.*

ARC 321 Ideas in Architecture (3-0-3). An introduction to 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 220.*

ARC 322 Global Issues in Architecture (3-0-3). Examination of our emerging understanding of global issues confronting humankind, including population growth, declining reserves of non-renewable resources, etc. Overview of the environmental impact of human communities through history. Introduction to concepts of energetics, including both the long-term operating economy of buildings, and the embedded energy invested in the physical form of the built environment. *Prerequisite: ARC 220 and PHY 104.*

ARC 330 Rough Construction Processes (2-3-3). In-depth presentation of contemporary regional construction practices using reinforced concrete. Emphasizes the interdependence of good building practices, appropriate form choices in architectural design and quality in the resulting work. Presents a detailed account of the normative regional building process, from site preparation to completion of the structural fabric, including structural prefabrication, as

well as moisture and thermal insulation. Lectures/presentations with extensive use of digital media and field visits. *Prerequisite: ARC 231. (Formerly Materials and Practices of Concrete Construction).*

ARC 341 Structural Analysis: Conceiving Forces in Buildings (2-3-3). *(Cross-listed as CVE 371).* An introduction to the concepts and procedures used to analyze and predict the behavior of buildings in response to static and dynamic loads on the structure. Extensive use of the computer and appropriate software to model, analyze, simulate and animate structural behavior. Taught in Department of Civil Engineering. *Prerequisite: ARC 240.*

ARC 342 Structural Design in Concrete, Steel and Wood (2-3-3). *(Cross-listed as CVE 372).* An introduction to methods and concepts used by the structural engineer in the design of reinforced concrete buildings. Structural design is presented as a search for strategies appropriate to realize architectural form, synthesizing the structural imperatives of regularity and rationality with specific desires for formal relationships and environmental qualities. Taught in Department of Civil Engineering. *Prerequisite: ARC 341.*

ARC 351 Environmental Energies and Building Form (2-3-3). Presents building form in the context of the environmental energies of light, heat, wind and sound. Together with moisture, these energies establish the invariant, often harsh, context within which built form must perform. Architectural form is presented as a strategy to mitigate the adverse effects of climate and locale upon the people and activities which the building houses. *Prerequisite: PHY 104.*

ARC 352 Environmental Control Systems in Interior Design (2-3-3). An integrated presentation of environmental control systems (lighting, heating, ventilating, air conditioning, sanitary and acoustics) with special attention to the needs of Interior Designers. Systems are presented as they influence one another and as they constrain interior space planning and design. *Prerequisite: PHY 104.*

ARC 365 Computer Aided Design (4-0-3). Systematic introduction to 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. 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, work strategies. *Prerequisite: DES 100, ARC 201. (Formerly ARC 371).*

ARC 366 Applied Computer Aided Design (4-0-3). Systematic introduction to 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. Introduction to AutoCAD occurs on PCs running the Windows NT operation system. Topics extend those introduced in ARC 365 to include detailed treatment of tool palettes and interplatform compatibility. *Prerequisite: DES 132.*

ARC 397 Internship I (0). Minimum of six 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: ARC 302.*

ARC 401 Architectural Design Studio V (12-0-6). Study and analysis of historical precedents followed by a sequence of design problems of increasing complexity. Emphasis on the planning of buildings and the inter-relationship among form, structure, technologies, materials and detail. *Prerequisite: ARC 302, ARC 330, ARC 240, ARC 351, and ARC 397.*

ARC 402 Architectural Design Studio VI (12-0-6). Advanced individual problems requiring a synthesis of spatial, structural, environmental, programmatic, technological and historical issues. Emphasis is placed on program generation, formal synthesis and advanced levels of complexity and comprehension of the process of design and construction. Problems are presented, analyzed and studied with the aid of faculty. *Prerequisite: ARC 401.*

ARC 410 Furniture Design (4-0-3). Course explores the basic function and design of furniture and topics of human factors, i.e., anthropometrics and ergonomics related to furniture design. Each student will develop a unique furniture project and will define, research, design, draw, select material for and build a study model of the final furniture piece. *Prerequisite: ARC 202.*

ARC 424 Evolutions of Cities (3-0-3). Introduction to the origin, growth, and development of cities throughout history. Examines the various socio-economic, 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 302.*

ARC 431 Finish Construction Processes (2-3-3). In-depth examination of all trades and processes involved in finishing a building. Includes all industrial components and architectural prefabrication used in contemporary construction. Emphasis on considerations of quality, cost, available skills and materials as they relate to the character, quality of environment, durability and maintenance. *Prerequisite: ARC 330. (Formerly Prefabrication and Systems Building).*

ARC 451 Lighting and Acoustics (2-3-3). Introduction to the basic concepts of acoustics and illumination. Explains and demonstrates both the qualitative and quantitative aspects of sound and light in the built environment to obtain an awareness and understanding of their impact on overall design decisions. The course is divided into two parts: the architecture of sound, its terminology, process of transmission and practical applications, and the architecture of light, its nature, sources, characteristics, calculation and application. Each part will address both the art and science of the respective disciplines. Computer simulation and modeling will be used as research tools. *Prerequisite: ARC 202, PHY 104.*

ARC 452 Environmental Control Systems (2-3-3). An integrated presentation of environmental control systems (lighting, heating, ventilating, air conditioning, sanitary and acoustics) as they influence one another, and as they constrain interior design, space planning and building morphology. *Prerequisite: ARC 351.*

ARC 460 Professional Practice I: Economics and Management (3-0-3). Introduction to the principles and practices of the economic and commercial aspects of architectural practice in a global economy. Includes microeconomic theory as it applies to private enterprise: basic business economics, planning, and management. Attention is also given to the processes and skills required to establish an independent architectural office. *Prerequisite: ARC 397 or IDE 397.*

ARC 461 Site Planning (2-3-3). *Prerequisite: ARC 302.*

ARC 462 Introduction to Landscape Architecture (2-3-3). *Prerequisite: ARC 302.*

ARC 465 Advanced Computer Aided Design (4-0-3). Concentrates on the specific demands on CAD systems by the architecture and building professions. 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 365. (Formerly ARC 471).*

ARC 497 Internship II (0). Minimum of eight weeks of on-the-job experience with an approved professional firm. Work undertaken must be documented in a formal report to the department by mid-semester of the following term. *Pre- or co-requisite: ARC 402.*

ARC 472 Contract Documents (3-12-6); summers. *Prerequisite: ARC 302. (Formerly ARC 463).*

ARC 494 Special Topics in Architecture *(from 2 to 4 credits)***.** *Prerequisite: ARC 302.*

ARC 501 Final Project Research (2-10-5). Students choose a design topic with the guidance of an advisor and approval of the faculty. Each student prepares an individual program for ARC 502, Final Project Design, concluding with a formal, bound document. *Prerequisite: ARC 402, ARC 431, ARC 342, ARC 452, and ARC 497.*

ARC 505 Topical Practicum in Architectural Design (10.5-0-5). Studio-based practicum focusing on problems, methods and techniques associated with classic variants on the setting for architectural design: urban design, housing, etc. Variants provide templates for student proposals in ARC 500. *Prerequisite: ARC 402. (Formerly ARC 510).*

ARC 520 Architectural Criticism (3-0-3). *Prerequisite: ARC 321.*

ARC 530 Case Studies in Building Construction (2-3-3). *Prerequisite: ARC 431.*

ARC 561 Professional Practice II: Construction Management (3-0-3). *(Cross-listed as CVE 561).* In-depth study of 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. Includes review of standard practices of tendering, contracting, quantity surveying, cost estimation, supervision, quality control and economy. Taught in Department of Civil Engineering. *Prerequisite: ARC 431, ARC 452 and ARC 460.*

ARC 562 Professional Practice III: Building Law (3-0-3). In-depth examination of the constraints imposed on the conduct of professional practice in architecture by current building laws and codes in the United Arab Emirates and other countries in the region. *Prerequisite: ARC 402.*

ARC 563 Principles of Urban Planning and Design (2-3-3). *Prerequisite: ARC 401.*

ARC 590 Final Project Design (2-14-9). Individual resolution of the design problems initiated in ARC 500, prepared under the guidance of a selected faculty advisor, presented and defended in a formal public critique. *Prerequisite: ARC 501, ARC 505.*

ARC 594 Special Topics in Architecture *(from 2 to 4 credits). Prerequisite: ARC 402.*

DES Design

DES 100 Digital Media in Design (4-0-3). Intended to introduce digital media as an integral part of design process and internet communications. Covers care and operation of hardware, an introduction to the function and features of the Mac. operating system, use of the keyboard, mouse, and other input devices such as digital cameras, scanners and output devices such as printers and plotters. The course introduces students to the integrated use of software appropriate for word processing, document layout, spreadsheets, communication and research, drawing and modeling. *(Formerly ARC 211 or CMP 103 or ARC 230 or CMP 101 in 1997/98).*

DES 111 Descriptive Drawing I (6-0-3). This basic course introduces the students to the fundamental principles of observational and analytical drawing. Various representational and analytical approaches are explored through assignments which encourage the development of skills needed to effectively represent and communicate visual information. *(Formerly AA 111).*

DES 112 Descriptive Drawing II (6-0-3). This drawing course will further introduce the student to the principles of drawing. Emphasis will be given to the development of an individual approach to representation and a wide variety of assignments will encourage the student to develop an understanding of a range of techniques and materials of drawing. *Prerequisite: DES 111. (Formerly AA 112).*

DES 121 History of Material Culture I (3-0-3). This course examines the artistic material culture of humanity through architecture, monuments, sculpture and painting. The technological, religious and social forces that shaped these works are explored. The first part of this course covers the time span from the Stone Age through the Ancient Middle East, Classical, Medieval and Islamic eras. *(Formerly AA 121).*

DES 122 History of Material Culture II (3-0-3). This course is a continuation of DES 121; it traces development of world artistic material culture from the fifteenth century to the present time. *(Formerly AA 122).*

DES 131 Design Foundations I (6-0-3), annually. In this course students are introduced to the principles, conceptual and critical skills, and the techniques of design. Students learn to observe the world critically and meticulously, to analyze both the broad structures and the small details of visual phenomena; and master skills needed to conceptualize and communicate their observations through the 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. *(Formerly AA 131).*

DES 132 Design Foundations II (6-0-3). This course 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. *Prerequisite: DES 131. (Formerly AA 132).*

DES 320 Interactive Web Design (0-6-3). This course provides an introduction to Web Design using HTML, DHTML, XML and Java. The course focuses on designing Web sites in general and developing interactive Web pages as required for on-line business and transactions. Students use a variety of graphic design, Web page authoring tools. Internet technologies, net security and other relevant issues will be discussed. This is a hands-on course and is implemented in a laboratory/studio environment. Students are expected to learn and use software packages for developing real life Web pages. HTML programming is a dominant part of the course and an introduction to Java Scripting and programming is also provided. *Prerequisite: CMP 101N or CMP 110 or DES 100. Credit not allowed for both MUM 201 and MUM 320; Multimedia Design majors may not take this course.*

DES 397 Internship (0-0-0). Minimum of six weeks of on-the-job experience with an approved professional firm. *Prerequisite: consent of the chair.*

DES 494 Special Topics in Design *(from 2 to 4 credits).*

HRM Heritage Management

HRM 201 History of Material Culture in the Arabian Gulf I (3-0-3). Tracing the historical development of art and architecture in the Arabian Gulf region, this course examines the material culture of the ancient Middle East, medieval Islam and its associated pan-Islamic and regional styles. Specific

attention is paid to the art and architecture of the United Arab Emirates.

HRM 202 History of Material Culture in the Arabian Gulf II (3-0-3). This course charts the development of art and architecture in the Arabian Gulf after the fifteenth century, including the impact of non-Arab colonization on the material culture of the Emirates. It also examines the development of contemporary artistic and architectural expression.

HRM 321 Introduction to Issues in Heritage Management I (3-0-3). An introduction to relevant theories and history, this course defines the practice of Heritage Management. It also outlines the different disciplines and professions involved and their roles in the conservation of both movable and immovable cultural property. It further discusses the development of intergovernmental and non-governmental agencies for conservation and analyzes current critical thinking about defining and displaying heritage. *Prerequisite: HRM 202.*

HRM 322 Introduction to Issues in Heritage Management II (3-0-3). This course introduces students to the specific issues, skills and techniques associated with museum management, documentation, exhibition design, and the preservation and conservation of movable and immovable cultural property. Instruction is through a combination of faculty lectures, assigned readings, field trips and guest lectures and workshops. *Prerequisite: HRM 321.*

HRM 331 Traditional Regional Material and Climate (3-0-3). Introduces students to 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.

HRM 332 Theory and Practice of Building Restoration (3-0-3). Students explore the steps involved in the rehabilitation and restoration of historic buildings, including documentation, assessment, structural and material analysis, project planning, conservation and preservation intervention strategies. Discrete techniques to incorporate contemporary requirements regarding sanitary and air conditioning are explored. Instruction combines on-going readings and lectures, guest lectures, workshops and field trips. *Prerequisite: HRM 331.*

HRM 333 Exhibition Studies (3-0-3). The purpose of this course is to equip students with the essential planning, design and research tools to perceive, prepare and produce exhibitions. Students also explore elements of design lighting, material, construction, presentation, visual and textual arrangement and containment of artifacts. Students are introduced to computer applications to research and quantify information for designing exhibition and museum environments.

HRM 397 Internship (0-0-0). Minimum of six weeks of on-the-job experience with an approved institution or agency. *Prerequisite: consent of the internship advisor.*

HRM 401 Final Project Research (6-0-3). Students design a research and presentation or conservation project with the guidance of an advisor and approval of the faculty. Each student prepares an individual program for HRM 401, concluding with a formal, bound document. *(Open to HRM majors only).*

HRM 405 Topical Practicum in Arts and Heritage Management I (3-0-3). Students formulate a cooperative heritage management project under faculty supervision and in partnership with the local community. This course offers training in the identification, protection and management of cultural resources and pursues rigorous documentation in photographic, textual and drawn formats. *Prerequisite: HRM 302.*

HRM 406Topical Practicum in Arts and Heritage Management II (3-0-3). A continuation of HRM 421, students implement the project formulated in the previous term, producing, as the case may be, an exhibition, publishable document or preservation or restoration activity for the benefit of the community. *Prerequisite: HRM 421.*

HRM 490 Final Project Design (6-0-6). Completion of the project formulated in HRM 400, under the guidance of a selected faculty advisor and presented and defended in a formal public critique. *(Open to HRM majors only).*

HRM 494 Special Topics in Heritage Management (variable credit). *Prerequisite: HRM 322.*

IDE Interior Design

Courses listed below in the Interior Design Program are described in several degrees of depth: full descriptions are presented only for courses to be taught by the end of the current academic year (2000-01). The remainder of the core curriculum is presented in abbreviated descriptions that indicate the basic scope and content of the intended courses. Elective courses are identified by title only. Listings illustrate anticipated offerings. Full descriptions will be provided in subsequent catalogs as the curriculum matures.

IDE 201 Architecture and Interior Design Studio I (10.5-0-5). *(Cross-listed as ARC 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. *Prerequisite: Admission to the Architecture or Interior Design Programs, DES 100, DES 111, 112, DES 121 or 122, DES 131, 132, MTH 003 or 111.*

IDE 202 Architecture and Interior Design Studio II (10.5-0-5). *(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.*

IDE 231 Materials and Methods of Interior Design (2-3-3). Introduction to the æsthetic, practical and technical aspects of interior finish materials. Presents materials in the context of their use, fabrication, installation and maintenance. Presents available finish materials and techniques as design choices affecting interior form, function and spatial quality. *(Formerly ARC 223 or IDE 203).*

IDE 232 Interior Construction (2-3-3). This course covers basic interior detailing, millwork and cabinetry elements. These elements must be developed and coordinated to construct interior space. Detailing, technical drawings, specifications and scheduling are therefore integral to design development. *Prerequisite: IDE 231. (Formely IDE 204).*

IDE 301 Interior Design Studio III (12-0-6). Studio-based investigation focusing on advanced concepts used in the development and application of planning techniques and spatial concepts. Concentrates specifically on the design of medium-scale residential and commercial projects. Emphasis on research and analysis of existing structures, contextual development of interior solutions, building constraints, accessibility standards and specialized product and materials specifications. *Prerequisite: IDE 202.*

IDE 302 Interior Design Studio IV (12-0-6). Continues the content and purpose of IDE 301, with special emphasis on planning techniques and volumetric concepts for the design of large-scale residences and public spaces. Course components: research applied to selected client identities, design criteria for special population groups, building constraints and accessibility standards, project specifications and creative presentation methods. *Prerequisite: IDE 301.*

IDE 310 Color and Light (2-3-3). Introduction to the fundamentals, principles and art of lighting and color, and their visual and physical effects in interior design. Content 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. *Prerequisite: DES 112, DES 132, IDE 231. (Formerly IDE 502).*

IDE 320 History of Interior Design (3-0-3). An overview of interior design historical development as a collective expression of art, architecture, science and culture, however, as a 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 in 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: DES 122.*

IDE 390 Special Projects in Interior Design (4-0-3). *Prerequisite: ARC 301.*

IDE 394 Special Topics in Interior Design. *(from 2 to 4 credits). Prerequisite: ARC 301.*

IDE 397 Internship (0-0-0). Minimum of six weeks of on-the-job experience with an approved professional firm. Work undertaken must be documented in a formal report to the department by mid-semester of the following term. *Prerequisite: IDE 302.*

IDE 401 Final Project Research (2-10-4). Students choose a design topic with the guidance of an advisor, and approval of the faculty. Each student prepares an individual program for IDE 502, Final Project Design, concluding with a formal, bound document. *Prerequisite: IDE 302, IDE 397. (Formerly IDE 402).*

IDE 405 Topical Practicum in Interior Design (10.5-0-5). Students use advanced programming, planning and volumetric concepts to design large scale interior projects. Course covers: interior solutions and design documentation, applied research, product and materials specifications, furniture selection and presentation methods. *Prerequisite: IDE 302.*

IDE 431 Interior Design Project Management (3-0-3). Course focuses on the planning, procedure and production of typical interior design projects from inception (programming) to completion (construction). Management of various phases of design is covered in the course. Topics include: client need and programming, project scheduling and budgeting, preliminary design, design development, construction documents composition, consultant collaboration, construction progress evaluation, post-occupancy evaluation and follow-up. *Prerequisite: IDE 232 or ARC 231.*

IDE 432 Advanced Detailing (4-0-3). Continuation of Interior Construction (IDE 232) and focuses on advanced levels of detailing, design development, conceptual and technical drawing, specifications and craftsmanship. *Prerequisite: IDE 232.*

IDE 460 Exhibition Design (2-3-3). 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 302. (Formerly IDE 503).*

IDE 490 Final Project Design (2-14-9). Individual design resolution based upon the research findings initiated in Final Project Research (IDE 400). The final project is developed under the guidance and advice of a faculty member and is presented and defended in a formal public jury. *Prerequisite: IDE 401, 405.*

IDE 494 Special Topics in Interior Design. *(from 2 to 4 creodits). Prerequisite: IDE 302.*

MUM Multimedia Design

MUM 201 Multimedia Studio I (6-0-4). An introduction to digital media, including ways of acquiring, manipulating, designing and recording using a variety of digital formats. Introduction to the World Wide Web, designing for web pages, interactive applications and CD-ROM design development. *Prerequisite: ARC 211 or CMP 103 or DES 100, DES 112 and sophomore standing.*

MUM 202 Multimedia Studio II (6-0-4). Continuation of MUM 201, including CD-ROM design and production and an introduction to the use of sound and video files. *Prerequisite: MUM 201.*

MUM 210 Sound and Video I (6-0-3). An introduction to video and sound recording. The emphasis is on obtaining hands-on practice in recording in a studio and on location. Planning, storyboarding and editing footage, and file management will also be covered in detail. *Prerequisite: DES 112, DES 132.*

MUM 211 Sound and Video II (6-0-3). A continuation of MUM 210 covering video recording, non-linear editing, production and post-production processes and techniques. *Prerequisite: MUM 210.*

MUM 230 Digital Multimedia (6-0-3). This course prepares students for producing multimedia elements for interactive applications. Students will use various formats and elements of digital media to produce a coherent and interactive application. Techniques for integrating the computer imagery, digital video, digital audio and program code shall be covered. Students will use an array of multimedia production software and hardware for producing various elements of an interactive application. *Prerequisite: DES 100. Credit not allowed for both MUM 230 and VIS 230.*

MUM 301 Multimedia Studio III (6-0-4). Interactive authoring using a variety of media, 3-D modeling and an introduction to animation. *Prerequisite: MUM 202.*

MUM 302 Multimedia Studio IV (6-0-4). A continuation of Multimedia III, including modeling, virtual environments, animation and communication. *Prerequisite: MUM 301.*

MUM 311 Advanced Sound and Video (6-0-3). Advanced studies in video and sound for third and fourth year students. *Prerequisite: MUM 211.*

MUM 321 Photo-Journalism (6-0-3). *(Cross-listed as VIS 321).* This course explores the history and practice of photo-journalism. 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 will investigate subject matter through the development of the photographic essay. A lab fee of Dhs 150 is applied. *Prerequisite: VIS 221.*

MUM 331 Modeling and Animation (6-0-3). This course provides an introduction to 2-D and 3-D modeling, animation and various modeling and animation tools. The course shall help students advance into the realm of computer modeling, animation, and video and motion picture production. Students will be able to use high-end software and hardware for developing a professional quality portfolio. *Prerequisite: MUM 202, MUM 211*

MUM 397 Internship for Multimedia (0-0-0). Minimum of six weeks of on-the-job experience with an approved professional firm. *Prerequisite: consent of the director.*

MUM 401 Multimedia Studio V (6-0-4). Advised senior project. Development of an involved multimedia project in an area of student interest. *Prerequisite: MUM 302.*

MUM 402 Multimedia Studio VI (6-0-4). Senior project continued. Portfolio production with an emphasis on entering the job market. *Prerequisite: MUM 401.*

MUM 494 Special Topics in Multimedia. *(from 2 to 4 credits). Prerequisite: MUM 302.*

VIS Visual Communication

VIS 201 Graphic Design Studio I (6-0-3). This course introduces the broad field of graphic design. It is design based and is an extension of DES 132. This course involves the application of design principles to graphic forms. *Prerequisite: DES 112 and DES 132. (Formerly GRA 201).*

VIS 202 Graphic Design Studio II (6-0-3). As a continuation of VIS 201, this course places an increasing emphasis on identifying the design process. The course material is focused entirely on the components of graphic design. *Prerequisite: VIS 201. (Formerly GRA 202).*

VIS 213 Illustration Drawing (6-0-3). This course, building on skills introduced in foundation drawing, 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. *Prerequisite: DES 112 and DES 132. (Replaces VIS 211 and 212).*

VIS 221 Photography Basics (6-0-3). Introduction to basic photo skills and to some of the issues associated with the practice and history of photography. The course covers camera operation, black and white film developing, contrast control, depth of field, focal length and print finishing. A lab fee of Dhs. 150 is applied. *Prerequisite: DES 112 and DES 132. (Formerly PHO 200).*

VIS 222 Multiples I (Printmaking) (6-0-3). Students are introduced to a variety of techniques in traditional and alternative printmaking methods. These may include, but are not limited to, intaglio, linocuts, monoprints, collographs, photoetching, stamping, relief and alternative methods. Traditional mechanical reproductive processes as well as a basic history and theory of the graphic arts are investigated. Issues surrounding the mechanical reproduction of images using digital media to create a global visual culture are also considered. A lab fee of Dhs. 150 is applied. *Prerequisite: DES 112. (Formerly DES 200).*

VIS 230 Digital Media in Visual Communication (6-0-3). This course is a continuation of DES 100 and will continue the development of the skills associated with digital design. Working with PostScript illustration, bitmapped images and desktop publishing students will use industry specific software to create vector based and bitmapped images. An introduction to layout and desktop publishing will be included and class discussion will encourage students to explore various design concepts. Emphasis will be given to the creation, preparation and printing of finished designs. *Prerequisite: DES 100, 112, 132. Credit not allowed for both VIS 230 and MUM 230.*

VIS 301 Graphic Design Studio III (6-0-3). A development of VIS 202, this course focuses on what graphic design could/might be. This level emphasizes exploration and experimentation. *Prerequisite: VIS 202. (Formerly GRA 301).*

VIS 302 Graphic Design Studio IV (6-0-3). With VIS 301 as a prerequisite, this course focuses its energy and applies it to practical, functional solutions. *Prerequisite: VIS 301. (Formerly GRA 302).*

VIS 311 Illustration Design (6-0-3). By focusing upon illustration as a means of conveying ideas and concepts, this course introduces the student to various techniques of idea generation. Students are encouraged to arrive at visual equivalents to written and/or oral texts. *Prerequisite: VIS 211 or VIS 212 or VIS 213.*

VIS 312 Illustration Genres (6-0-3). This course 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 311.*

VIS 321 Photo-Journalism (6-0-3). *(Cross-listed as MUM 321).* This course explores the history and practice of photo-journalism. 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 will investigate subject matter through the development of the photographic essay. A lab fee of Dhs. 150 is applied. *Prerequisite: VIS 221. (Formerly PHO 310).*

VIS 322 Multiples II (Printmaking) (6-0-3). Students conduct further and more in-depth investigation into the processes of mechanical reproduction with possible concentration(s) in a specific printing medium. This course is a confluence of media, technologies and ideologies that include the information technologies, digital and analog photography, and many other methods and media of mechanical reproduction. Attention is paid to the role of the reproduced image in the economy and material culture and the structure and manipulation of meaning through image production and reproduction. A lab fee of Dhs. 150 is applied. *Prerequisite: VIS 222 or DES 200.*

VIS 323 Photography for Communication (6-0-3). This course covers the theory and practice of image manipulation through the extension of the traditional boundaries of photography. A wide range of techniques and processes will be covered such as polarization, non-silver methods, toning and digital media. A lab fee of Dhs. 150 is applied. *Prerequisite: VIS 221. (Formerly PHO 300).*

VIS 340 Intensive Studio Practice I (6-0-3). A course comprised of two, six-week sessions. The course subject matter will be announced in the university course listings each semester. *Prerequisite: DES 112 and DES 132.*

VIS 341 Intensive Studio Practice II (6-0-3). Similar to VIS 340, this course is comprised of two, six-week sessions. The course subject matter will be announced in the university course listings each semester. Some of the topics available will be advertising, package design, professional practice, typography, publication design, exhibition design and photography. *Prerequisite: DES 112 and DES 132.*

VIS 360 Fundamentals of Media Theory (3-0-3). A survey of the elements which make up film, video, audio, still images and an analysis of how these elements are used in the design of visual and textual message design and structure. Includes analysis of how information is crafted to create meaning as well as the history of the various media, to include the social, economic, cultural, political, ethical and theoretical bases of the media. *Prerequisite: DES 112 and DES 132.*

VIS 361 The Media Industry (3-0-3). A survey of the contemporary practical application(s) across the media industries in local, regional and global contexts. This includes investigation into the workings of the media industry and issues relating to digital and analog technologies in the free and controlled flow of information. Special attention will be given to media industry issues germane to the GCC region and the Islamic viewing audience and consumer. *Prerequisite: DES 112 and DES 132.*

VIS 397 Internship (0-0-0). Minimum of six weeks of on-the-job experience with an approved professional firm. *Prerequisite: consent of the chair.*

VIS 401 Senior Graphic Design Studio V (6-0-4). A senior level studio course in which the student will develop individual expertise in the approach to graphic design applications. In this course, students are required to make their first contact with various professional sources in order to obtain responses and commentary on their individual work. *Prerequisite: VIS 301.*

VIS 402 Senior Graphic Design Portfolio (6-0-4). This senior level portfolio course focuses on portfolio production and presentation within the field of graphic design. This course will stand as the culmination of four years of study in graphic design and the portfolio will embody that achievement. In this course, students are required to present their work to professional firms. *Prerequisite: VIS 401.*

VIS 411 Senior Illustration Studio (6-0-3). In this senior level course, students are encouraged to develop work that reflects and identifies their own personal stylistic strengths. Emphasis on an individual approach to illustration is encouraged and students are expected to approach the local market for initial responses to their work. *Prerequisite: VIS 312.*

VIS 412 Senior Illustration Portfolio (6-0-3). In this senior level illustration course, the student is encouraged to develop his/her own individual expertise and style toward the production of a professional body of work. As part of this course, students are required to prepare a portfolio and approach the commercial market for professional responses to their work. *Prerequisite: VIS 411.*

VIS 421 Senior Multiples/Photography Studio (6-0-3). Students at this level will work in traditional and non-traditional methods in printmaking and /or photography that include, but are not limited to: non-silver methods, non-toxic methods for photo etching, cyanotypes, etc. They will experiment with alternative methods and simultaneously engage in an in-depth studio practice towards the development of a personal aesthetic/style and the mastery of reproductive technique(s). *Prerequisite: VIS 321 or VIS 322.*

VIS 422 Senior Portfolio in Multiples / Photography (6-0-3). Students in this course will prepare a body of work that acts as the culmination of their studies in multiples and/or photography. The work created can be either in photography, multiples or a combination of these two disciplines. *Prerequisite: VIS 421.*

VIS 494Special Topics in Visual Communication. *(from 2 to 4 credits). Prerequisite: VIS 302.*

School of Business and Management

ACC Accounting

ACC 201 Fundamentals of Financial Accounting (3-0-3). Introduces the principles and concepts underlying financial statements. Course includes an introduction to the accounting profession, control, concepts, business entities and all elements of basic financial statements. *Prerequisite: first year second semester.*

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. This 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; focus on accounting for long-term liabilities, stockholder's equity, cash flow analysis and international financial statements. *Prerequisite: ACC 301.*

ACC 303 Cost Accounting (3-0-3). Uses of accounting data for planning control and decision-making. Topics include: budgets and cost concepts, techniques and behavior. *Prerequisite: ACC 202.*

ACC 304 Auditing (3-0-3). A study of auditing theory, generally accepted auditing standards, audit procedures, audit reports and the responsibilities and ethics of the auditing profession. Topics include: risk, evidence and audit tests, 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 305 Income Tax I. Introduces the U.S. 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, expense, credits, property transactions and AMT as they apply to theory and practice. *Prerequisite: ACC 202.*

ACC 306 Income Tax II. Introduces the U.S. federal income tax system as it applies to corporations, partnerships, estates and trusts. Course includes a comparison and contrast of personal and corporate taxation, as well as an examination of corporate organization and capital structure, distributions and reorganizations, accumulated earnings rules. *Prerequisite: ACC 305.*

ACC 394 Special Topics in Accounting (3-0-3).

ACC 396 Independant Study in Accounting (3-0-3).

ACC 401 Advanced Financial Accounting (3-0-3). Theory and practices of accounting for partnerships, business combinations and consolidated financial statements. Advanced topics in financial accounting. *Prerequisite: ACC 302.*

ACC 407 Accounting Theory (3-0-3). Examines models, hypotheses and concepts underlying financial accounting practice. Emphasizes understanding the basis of traditional accounting principles and analysis of the relevance of decision-usefulness, economic consequences and game theory models to accounting standard setting. Specific issues related to earnings management and executive compensation, as well the social, political and economic influences on accounting standard setting are also considered. *Prerequisite: ACC 401.*

BIS Business Information Systems

BIS 201 Business Information Systems (3-0-3). This is a computer applications to business course. It covers spreadsheet applications using MS Excel and database applications using MS Access. Students will be working on case assignments throughout the semester. *Not counted for students in Computer Science major.*

BLW Business Legal Issues

BLW 301 Legal Issues in Business (3-0-3). Examines business legal issues such as: legal concepts, philosophy and functions of court systems. Survey of contracts, sales, agents, legal forms of business and the regulation of businesses. *Prerequisite: third year (junior) standing.*

BLW 302 Advanced Corporate Law (3-0-3). Proprietorships, partnerships, limited partnerships and corporations; advantages and disadvantages of each form; factors in selection of which form to use; partnership agreements; how to create corporations; closed corporations vs. publicly-traded corporations. American and UAE corporate law are compared. *Prerequisite: BLW 301.*

FIN Finance

FIN 201 Fundamentals of Financial Management (3-0-3). Introduction to 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. *Prerequisite: ACC 201 and QAN 201.*

FIN 301 Financial Statement Analysis (3-0-3). Integrates and synthesizes the core business courses such as accounting, finance, marketing, management and statistics. Students use the case method to study and analyze corporations, and utilize computer based business information systems, such as EDGAR, to download and analyze financial statements. *Prerequisite: ACC 202 and FIN 201.*

FIN 302 Financial Markets and Institutions (3-0-3). The history, purpose, function and organization of the short-term money market and long-term capital market. An integrated view of the participating institutions and the markets in which they operate, their investment constraints and their resulting portfolios. *Prerequisite: FIN 201.*

FIN 303 Investment Analysis (3-0-3). Investment objectives. Methods of appraising corporate equity, debt and other securities. Portfolio theory and management, technical analysis, random walk theory and the role of institutional investors. *Prerequisite: FIN 201.*

FIN 304 Real Estate Finance (3-0-3). Terminology, legislation, principles and analytical techniques pertaining to financing of real estate. Perspective of lender, residential borrower and income property borrowers. *Prerequisite: FIN 201.*

FIN 306 Insurance and Financial Planning (3-0-3). An introduction to insurance, risk management and personal financial planning. Includes theory of insurance and risk management with specific applications to property, disability, health and life insurance. The course also discusses mutual funds, retirement planning, estate and

tax planning, offshore banking and investments. *Prerequisite: FIN 201.*

FIN 394 Special Topics in Finance (3-0-3). Current topics in one of the following areas: Finance, Insurance or Real Estate. Topics varied and announced in Schedule of Classes. May be repeated once with change in topic area. *Prerequisite: consent of instructor.*

FIN 396 Independant Study in Finance (3-0-3).

FIN 401 International Finance (3-0-3). Covers financing international trade and investment, foreign exchange markets and exchange rate, balance of payments and current developments in international finance co-operations. *Prerequisite: FIN 201.*

FIN 402 Futures and Options (3-0-3). Conceptual and practical aspects of the functioning of speculative markets in futures, options, and hard assets; stock option strategies, financial engineering, financial futures, stock index options and contemporary issues in futures and options. *Prerequisite: FIN 303.*

FIN 403 Commercial Banking (3-0-3). Covers the structure and internal organization of commercial banks and emphasizes the dynamic nature of assets, liability and equity management. It also covers the application of decision-making procedures to financial management situations, including evaluation of bank performance, capital acquisition, liquidity and loans. *Prerequisite: FIN 302.*

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. *Prerequisite: FIN 303 and QAN 202.*

FIN 405 Advanced Financial Management (3-0-3). Covers investments, financing and dividend policy decisions of the financial manager. *Prerequisite: FIN 303 and QAN 202.*

Information Systems

(See Management Information Systems)

MGT Management

MGT 201 Introduction to Management (3-0-3). Surveys the basic concepts and issues of management and the various functions and activities of the manager. *Prerequisite: second semester, freshman standing (12 credits minimum). (Formely MGT 101).*

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.*

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. Topics may include manpower planning, recruitment and selection, policy and procedures, performance appraisal, compensation and benefits, training, safety and industrial relations. *Prerequisite: MGT 201, junior standing.*

MGT 303 Management and Leadership Development (3-0-3). Focuses on the necessary skills and abilities of the successful leader and manager. Students are not only introduced to these success factors, but are challenged to both assess and develop their own managerial and leadership skills throughout the course. *Prerequisite: MGT 301.*

MGT 380 Project Management (3-0-3). Examines the concepts and techniques of managing projects in service and manufacturing settings. Topics may include project selection and evaluation, dynamics, motivation and evaluation of team members, scheduling, budgeting and closure. *Prerequisite: ACC 202, MIS 201 and MGT 301.*

MGT 394 Special Topics in Management (3-0-3).

MGT 396 Independant Study in Management (3-0-3).

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. *Prerequisite: senior standing.*

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. Business cases are used extensively in this course to highlight the diversity and complexity of organizational environments and systems. Topics include: missions and objectives, environmental analysis, formulating, implementing and assessing strategies and policies, international, social and ethical issues. *Prerequisite: senior standing.*

MIS Management Information Systems

MIS 201 Fundamentals of Management Information Systems (3-0-3). Covers information as an organizational resource. Topics include: decision making frameworks, transaction processing systems, decision support systems, external information systems, office automation, competitive information systems and financial systems. A technology update is provided in hardware and software basics, database management and telecommunications. *Prerequisite: BIS 201.*

MIS 202 Advanced MIS (3-0-3). Addresses, in particular, emerging issues in management information systems, be they related to hardware, software, telecommunications, application philosophies or combinations of these. *Prerequisite: MIS 201.*

MIS 301 Fundamentals of Database Management (3-0-3). Addresses the beginning technical, business and application development issues associated with managing and using an organization's data resources. Employing MS-Access as the implementing technology, the course coverage includes: issues involved in organizational data management, the fundamentals of database design, data modeling, entity relationships, recursion, normalization and the relational model. *Prerequisite: MIS 201, BIS 201.*

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. Employing SQL and Oracle as the implementing technologies, the course coverage includes: SQL, data architecture, data structure and storage, data processing architecture, hierarchical and network models, object - oriented database management systems, rganizational memory technologies and managing organizational memory. *Prerequisite: MIS 301.*

MIS 303 Introduction to Systems Analysis (3-0-3). Traditional analysis, design through a data flow analysis and the system development life cycle approach. Methods for structured analysis and design are covered. Data structures, definitions and normalization are also addressed. Emphasis is on gaining an ability to use the various tools associated with systems analysis. *Prerequisite: MIS 201.*

MIS 394 Special Topics in Management Information Systems (3-0-3).

MIS 396 Independant Study in Management Information Systems (3-0-3).

MIS 401 Business Data Communications (3-0-3). Deals with the fundamental concepts of data communications. The design and management of computer-based networks for business applications, hardware, software and security in business environments are discussed. The topics covered include business data requirements, transmission media, transmission techniques, multiplexing and data compression, WANs, LANs, data encoding and flow control, network protocols, electronic commerce and network security. *Prerequisite: MIS 201.*

MIS 402 Knowledge Management and Expert Systems (3-0-3). Explores the theoretical foundation of knowledge and its value to the organization. The nature of intellectual capital and valuation of an organization's knowledge assets will also be examined. *Prerequisite: MIS 201.*

MIS 403 Applied Systems Design (3-0-3). Builds on previous courses and allows students to apply the tools studied in MIS 303. It follows the life cycle process to produce specifications for a current system, develop the physical design for the system and, to the extent possible, implement the system. The use of project teamwork is emphasized. *Prerequisite: MIS 303.*

MIS 404 Internet Business Applications (3-0-3). An overview course that examines how the Internet and the World Wide Web are used for marketing and business purposes. Students will study well-established US and UAE companies that have established a marketing presence on the Internet. Projects include building a web site to market a specific product and establishing a simulated business on the Internet. *Prerequisite: MIS 201.*

MKT Marketing

MKT 201 Fundamentals of Marketing (3-0-3). Introduces the concept of making marketing decisions in business and in non-profit organizations. Particular attention is devoted to analyzing customer needs; segmenting markets; and developing product, promotion, pricing and distribution strategies. Relationships between consumers, business and governments are explored. *Prerequisite: ECO 201 and ECO 202 .*

MKT 301 Consumer Behavior (3-0-3). Study of marketing, psychology, sociology and cultural anthropology to determine motivations for product purchases. A multimedia approach is used 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 aid them in making marketing decisions. Students learn 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. *Prerequisite: MKT 201 and QAN 201.*

MKT 303 E-Commerce (3-0-3). An overview course that examines how the Internet and the World Wide Web are used for marketing and business purposes. Students will study well-established US and UAE companies that have established a marketing presence on the Internet. Projects include building a web site to market a specific product and establishing a simulated business on the Internet. *Prerequisite: MKT 201 and MIS 201.*

MKT 304 Sales Management (3-0-3). An introduction to professional sales force management. This course is designed to develop student skills in planning a sales program, organizing the selling effort and in recruiting, training and motivating the sales force. *Prerequisite: MKT 201.*

MKT 394 Special Topics in Marketing (3-0-3).

MKT 396 Independant Study in Marketing (3-0-3).

MKT 401 Marketing Strategy (3-0-3). An analysis of current marketing management issues. Students develop a marketing plan for an outside organization, analyze case studies and participate in computer simulation exercises. *Prerequisite: MKT 301, MKT 302 and MIS 201.*

Other courses

BUS Internship

BUS 394 International Study Tour (3-0-3). Provides a firsthand opportunity to learn by experiencing the world of international business. Students will visit the headquarters locations of multi-national organizations and attend seminars given by the professionals of these corporations.

BUS 397 Business Internship (3-0-3). Students are placed, by the School of Business Internship office, in corporations for the purpose of utilizing the skills and knowledge acquired in the classroom.

INB International Business

INB 201 Fundamentals of International Business (3-0-3). An introductory course that studies 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. *Prerequisite: ECO 201 and ECO 202.*

QAN Quantitative Methods

QAN 201 Introduction to Statistics (3-0-3). Descriptive statistics, probability distributions and estimation to include the use of statistical software. An applications oriented course that will prepare the student for more advanced study.

QAN 202 Quantitative Analysis for Decision Making (3-0-3). An applications-oriented course in a wide range of fields including: accounting, advertising, finance and real estate, general management, macroeconomics, microeconomics, marketing, human resources, production and operations management, public administration and quality control. Topics include but are not limited to: classical techniques of and hypothesis testing, non-parametric analysis, regression and correlation, decision theory and time series and forecasting. *Prerequisite: QAN 201.*

MBA Master of Business Administration

MBA 601 Managerial Economics (3-0-3). Application of economic theory to management problems, using basic economic tools and techniques of economic analysis to analyze decision-making problems faced in private business, government agencies and non-profit organizations.

MBA 602 Managing People and Organizations (3-0-3). Incorporating current management theory and research, the course looks into the factors that influence individual and group performance. Topics discussed range from individual attitudes and motivation to leadership, change, culture and organizational structure.

MBA 603 Accounting Concepts and Applications (3-0-3). Addresses the use of accounting as a management tool, including the strengths and limitations of accounting as an information system. Financial and managerial aspects of accounting with focuses on the underlying concepts of accounting, the role of accounting in management planning and control and the usefulness of accounting data for evaluating the results of operations and decision making.

MBA 604 Applied Managerial Statistics (3-0-3). The decision-aiding tools that can be applied by managers to gain insight into decision problems range from simple graphic displays of data to sophisticated statistical tests. Students use real-world data sets and PC- based software to describe sets of measurements, construct probability distributions, estimate numerical descriptive measures and build multiple regression models. *Prerequisite: a college-level finite mathematics course is highly recommended.*

MBA 605 Financial Management (3-0-3). Financial theory and techniques of analysis, including valuation theory, theories of risk measurement, managing a firm's investment decisions and capital structure, sources of financing for a firm, and financial planning and analysis. *Prerequisite: MBA 601, MBA 603 and MBA 604*

MBA 606 Management Information Systems (3-0-3). The theoretical, technological, practical and managerial foundations of management information systems. Includes: information technologies, systems development, the impact of information systems on business organizations, information technology as a competitive tool, and the management of information systems within domestic and multinational corporations. Introduces students to current systems and software. *Prerequisite: MBA 603.*

MBA 610 Business Research Applications (3-0-3). Introduces the student to the basic tools of business research by explaining various research methodologies and techniques. Numerous illustrations, portraying actual research in management, marketing, finance, accounting and other areas of business, show how to perform the research function.

MBA 611 Advanced Financial Management (3-0-3). This course examines, at an intermediate level, the problems of managing short-term assets including cash, marketable securities, accounts receivable and inventory, managing the acquisition and disposal of long-term assets, and financing decisions including leverage, leasing, mergers and international issues. Students become familiar with both the basic theories in each of these areas and various strategies for integrating the theory with practice. *Prerequisite: MBA 603 and MBA 605.*

MBA 612 Leadership and Change (3-0-3). The role of leadership is investigated in the context of global change. Particular attention is given to leadership issues as they pertain to organizational development, culture and the dynamics of change. *Prerequisite: MBA 601 and MBA 603.*

MBA 613 Accounting for Management (3-0-3). The role of accounting information in facilitating the functions of management. Topics covered are decision-making, planning, performance evaluation, budgeting, cost control and international transfer prices.

MBA 614 Marketing Management (3-0-3). An introduction to current marketing management techniques and the tools necessary for effective marketing decision-making. Provides global perspectives on marketing management and international marketing issues. Interactive learning techniques include the case method and active class participation. Issues including ethics, minorities and the ecological environment are incorporated. Course content requires familiarity with microeconomics theory, basic concepts of accounting and Quattro-Pro (or a similar spreadsheet program).

MBA 615 Innovation and Entrepreneurship (3-0-3). The practices and techniques used to stimulate and sustain innovation and the entrepreneurial spirit are considered. The process of new venture formation and the issues involved are examined in both the contexts of existing firms and free-standing new ventures. *Prerequisite: MBA 602, MBA 605 and MBA 614.*

MBA 616 International Electronic Commerce (3-0-3). Electronic commerce is the conduct of intra-organizational transactions, messages and inquiries through purely electronic means, as opposed to paper and/or voice. This course presents a survey of consumer and business-to-business electronic commerce models, systems and technical solutions. Includes hands-on projects and assignments.

MBA 617 Ethics and Legal Issues (3-0-3). An intensive introduction to the legal and ethical issues confronting the global business manager. This course addresses the legal system, legal processes and several areas of substantive commercial law relevant to the business manager. In addition, it discusses the developing recognition of legal and ethical issues, and their managerial implications. Examines product liability, the administrative legal process of regulation, antitrust and the contract as the fundamental legal instrument of global commercial relations.

MBA 618 Strategic Management in a Global Environment (3-0-3). Focuses on developing and applying strategic management to successfully position organizations in a competitive global environment. Course is integrated with previous course experiences to hone decision making, analysis, and oral and written communication skills. Students work in small teams to analyze a real company's external environment, perform an internal corporate audit and build detailed action plans including implementation issues and financial forecasting. *Prerequisite: MBA 612.*

School of Engineering

CHE Chemical Engineering

CHE 204 Chemical Engineering Thermodynamics I (2-3-3). Terms and definitions. First, second and third laws of thermodynamics. Reversibility and the absolute zero of temperature. Ideal cycles and processes. Definition and use of internal energy, enthalpy, entropy and free energy, Maxwell relations. Phases and phase equilibria for pure substances. *Prerequisite: PHY 101.*

CHE 205 Principles of Chemical Engineering I (1-3-2). Systems of units, unit conversion, dimensional consistency of equations, precision, accuracy, error and rounding. The chemical equation, stoichiometry, limiting and excess reactants, conversions, yields, elementary calculations involving heat effects in reacting and non-reacting systems. Steady-state material balances. The principle of conservation of mass. Process flow sheets. Calculation techniques. Ideal and real gas relationships, vapor pressure, saturation, vaporization, condensation. *Prerequisite: CHM 102.*

CHE 206 Principles of Chemical Engineering II (1-3-2). Steady-state energy balances with and without chemical reaction. Heat of solution and mixing, humidity charts. Simultaneous material and energy balances. Degrees of freedom in process specifications. Unsteady-state material and energy balances. *Prerequisite: CHE 205.*

CHE 207 Fluid Flow (2-3-3). Properties of fluids: specific gravity, viscosity, surface tension. Pressure measurement. Basic equations of fluid flow, flow measurements. Flow of fluids in pipes, pumping of fluids. Velocity distributions and measurement. Dimensional analysis. Laminar and turbulent flow. *Prerequisite: PHY 101, MTH 104.*

CHE 210 Introduction to Chemical Engineering (1-3-2). A project based course that concentrates on basic concepts of chemical engineering. Topics are selected from the broad area of chemical engineering in coordination with local industries. The students are asked to perform laboratory scale experiments and scale up to pilot units. *Prerequisite: NGN 111.*

CHE 301 Heat Transfer (2-3-3). Steady state conduction in various geometries. Transient conduction. Forced and natural convection. Analysis of heat exchangers. Radiation. *Prerequisite: CHE 204, CHE 207 or NGN 241.*

CHE 305 Chemical Engineering Thermodynamics II (2-3-3). Non-ideal behavior in systems of variable composition. Fugacity and fugacity coefficients. Activity coefficients. Phase equilibria at low and moderate pressures. Dew-point, bubble-point and flash calculations. Chemical reaction equilibria. Equilibrium constants and dependence on temperature. Calculations for equilibrium conversions of single and multiple reactions. Use of standard free energies, enthalpies, entropies to determine equilibrium constants for selected gas and liquid phase reactions. *Prerequisite: CHE 204, CHE 206.*

CHE 306 Chemical Processes (2-0-2). A study of the manufacturing processes for such products as industrial chemicals, foods, cement, vegetable oils, soaps and detergents, paints and coatings and industrial gasses. Introduction to flowsheeting, plant layout and site location. *Prerequisite: CHM 215 or CHM 221, CHE 206.*

CHE 321 Chemical Reaction Engineering (2-3-3). General mass and energy balances for chemical reactors. Sizing isothermal and non-isothermal ideal reactors: Batch, CSTR and PFR. Computer simulations in chemical reactor design. Heterogeneous catalysis and mass transfer limitations. *Prerequisite: CHM 331, CHE 305. Co-requisite: CHM 335.*

CHE 324 Process Design I (1-3-2). Process synthesis. Optimization. Short-cut and CAD methods. Environmental, ethical, health, safety, social and political considerations of design. *Prerequisite: CHE 206.*

CHE 325 Separation Processes I (1-3-2). Size reduction of solids(principles and equipment), sedimentation, fluidization, filtration, centrifuge. Crystallization and drying(principles and equipment). *Prerequisite: CHE 206, CHE 207.*

CHE 325L Separation Processes I Lab (0-3-1). Practical experiments to illustrate the theoretical fundamentals of the topics given in course CHE 325. *Co-requisite: CHE 325.*

CHE 326 Separation Processes II (2-3-3). Vapor-liquid equilibrium. Flash, batch and continuous distillation with reflux in tray columns using binary systems. Multi-component distillation. Single and multiple effect evaporators. Liquid extraction and leaching. *Prerequisite: CHE 206, CHE 301, CHE 305.*

CHE 326L Separation Processes II Lab (0-3-1). Practical experiments to illustrate the theoretical fundamentals of the topics given in course CHE 326. Co-*requisite: CHE 326.*

CHE 332 Cost Estimation and Economics (3-0-3). Cost and asset accounting, cost estimation, interest and investment costs, taxes and insurance, depreciation, profitability, alternative investments and replacements. Development of spread sheet programs for project evaluation. *Prerequisite: junior standing.*

CHE 413 Separation Processes III (2-3-3). Mass transfer in packed columns. The HETP and HTU principles in design of packed columns for rectification, absorption and stripping. Adsorption and ion exchange in packed columns. Membrane separation processes. Humidification theory. Design of cooling towers, dehumidifiers and air conditioners. *Prerequisite: CHE 326, CHM 331.*

CHE 413L Separation Processes III Lab (0-3-1). Practical experiments to illustrate the theoretical fundamentals of the topics given in course CHE 413. *Co-requisite: CHE 413.*

CHE 421 Process Control (2-3-3). Instrumentation. Mathematical models for process equipment. Open and closed loops. Use of LaPlace transforms. P, PI and PID controllers. Tuning P, PI and PID controllers. Use of on-off controllers and PLC's. PLC programming. Use of computer simulation programs for testing above mentioned control systems. *Prerequisite: MTH 205, CHE 321, CHE 324.*

CHE 430 Computer Methods in Chemical Engineering (1-3-2). Application of commercial software to chemical engineering problems. *Prerequisite: senior standing.*

CHE 432 Process Design II (1-3-2). Detailed design of chemical process equipment such as distillation columns, evaporators, mixing systems and separation systems. *Prerequisite: CHE 325, CHE 326.*

CHE 433 Instrumental Analysis (2-3-3). Overview of modern instrumental methods of analysis utilized by scientists and engineers. Treatment of analytical data using error analysis. Principles, laws and operation of modern instrumentation such as molecular and optical spectroscopy, flame and plasma absorption spectroscopy, nuclear magnetic resonance, electrochemical and analytical methods, thermal methods, separation and chromatographic techniques and mass spectroscopy. *Prerequisite: CHM 215 or CHM 221.*

CHE 434 Petroleum Refining Processes (2-3-3). Introduction to petroleum exploration and production. The study of a complex refinery including the basic principles of refining, the effect of feedstock on refinery

design, selection of units to be included, design of major equipment and refinery economics. *Prerequisite: CHE 324, CHE 326, CHE 332.*

CHE 435 Pollution Control in Chemical Industries (2-3-3). Environmental pollution. Air pollution, engineering control of air pollution. Water pollution, engineering control of water pollution. Noise pollution. Soil pollution. Land and ocean disposal of industrial wastes. Other sources of pollution. Case studies. *Prerequisite: CHE 306.*

CHE 436 Petrochemical Technology (2-3-3). A study of various petrochemical processes including, but not limited to, industrial chemicals, polymers, synthetic rubber, fibers and protein. *Prerequisite: CHE 215 or CHE 221.*

CHE 437 Gas Purification (2-3-3). Refinery gas, liquefied petroleum gasses, natural gas. Acid gas removal, sulfur dioxide removal, gas dehydration, catalytic conversion of gas impurities. Removal of nitrogen compounds from gas streams. Design of main process equipment. *Prerequisite: CHE 413.*

CHE 438 Membrane Separation Processes (2-3-3). Definition and classification of membranes, permeation and diffusion, non-equilibrium thermodynamics. Mechanisms of membrane transport. Equilibrium relationships. Separation in the liquid phase. Engineering aspects of membrane separation. *Prerequisite: CHE 413.*

CHE 439 Wastewater Treatment (2-3-3). Physical properties of water, uses of wastewater, wastewater treatment by physical processes, biological treatment systems, advanced wastewater treatment, industrial wastewater treatment, effluent disposal, treatment and reuse and disposal of sludge. *Prerequisite: CHE 306.*

CHE 440 Desalination (2-3-3). General principles of desalination. Evaporation, vapor compression desalination, membrane technology and ion exchange. Seawater chemistry. Scale formation in separation equipment. Dual-purpose power desalination co-generation plants. *Prerequisite: CHE 326.*

CHE 441 Polymer Technology (2-3-3). Polymerization and polymers, process of homogeneous and heterogeneous polymerization. Methods of production of plastics, synthetic fibers and synthetic rubber. Physical and chemical properties of polymers. *Prerequisite: CHM 216 or CHM 221.*

CHE 442 Corrosion (2-3-3). 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. Corrosion case study in petroleum industries. *Prerequisite: CHM 331.*

CHE 498 Design Project I (0-6-2). Application and integration of materials from other chemical engineering courses to the design of plants and processes representative of the chemical and related process industries. Students work closely with a faculty member on a project of mutual interest. Written design reports and oral presentations are required for evaluation. These courses allow students an opportunity to demonstrate the ability to work with minimum supervision. *Prerequisite: CHE 324, CHE 325, CHE 326, CHE 332 and senior standing or consent of instructor.*

CHE 499 Design Project II (0-6-2). A supervised study of defined chemical engineering significance based on collected data, followed by a comprehensive analysis, conclusion and recommendation. The student will be given a wide latitude in choosing the project. A comprehensive written report will be generated and the student must present and defend his/her work in an oral presentation. While a faculty member will direct the study, the student will work independently to obtain the data and complete the project. *Prerequisite: CHE 324, CHE 325, CHE 326, CHE 332 and senior standing or consent of instructor.*

CVE Civil Engineering

CVE 201 Civil Engineering Lab I (0-3-1). Techniques of engineering measurements and laboratory experimentation and recording. Calibration principles. Introduction to experiment data acquisition, processing, analysis and simulation. Laboratory use of testing automation and electronic instrumentation for testing isotrpoic and anisotropic materials. Materials include: wood, selected ductile and brittle metals and hardened concrete. Tension tests on ductile and brittle materials. Compression tests. Illustration of strain hardening, creep, fatigue and relaxation. Hardness and impact tests. Deflection of beams, frames and trusses. Characteristics of stress-strain diagrams. Evaluation of materials constants. Experiments include data analysis, evaluation and presentation. *Prerequisite: sophomore standing.*

CVE 210 Introduction to Civil Engineering (1-3-2). Introduction to concepts of design, communication and teamwork through engineering project approach. Tools of engineering, creative thinking, analysis, open-ended problem solving, probabilistic methods, optimization techniques, workshop skills as applied to civil engineering systems design are emphasized. Group-oriented design projects that utilize basic concepts of civil engineering, computer aided tools and laboratory experiments. Students have to build/assemble a model of a civil engineering system such as: bridge, dam, framed structure, etc. Site visits to projects covering different disciplines. Seminars with practicing professionals in industry and government. *Prerequisite: NGN 111.*

CVE 221 Materials of Construction and Quality Control (2-3-3). Physical and mechanical properties of construction materials; aggregate, Portland cement, concrete, bituminous materials and paving mixtures used in construction and maintenance of roads and pavements. Proportioning of concrete mixtures including admixtures. Concrete trial mixes on construction site. Concrete curing methods. Design of paving mixtures. Production, specifications, tests and quality control of local construction materials. Wood, ferrous and non-ferrous metals, glass, plastics and masonry units. Fiber reinforced concrete. *Prerequisite: NGN 231.*

CVE 231 Engineering/Environmental Geology (2-3-3). Basic principles of physical geology pertinent to environmental and civil engineering. Identification of minerals. Origin and types of rocks and sediments. Weathering. Land forms. Geologic structure. Air photos and geologic maps. Effects of geologic features and processes on constructed facilities planning and design. Earth systems and cycles, earth structure and materials. Hazardous geologic processes. Earth resources: minerals, soil, water, energy alternatives. Human impact on the environment: waste disposal, contaminants in the geologic environment, atmospheric change. Physical and engineering properties of rocks. Laboratory work on basic geologic identification and mapping techniques. Field trips and applications projects. *Prerequisite: sophomore standing.*

CVE 241 Surveying and Geomatics (2-3-3). Introduction to geodetic positions, coordinate systems, datums, basic measurements procedures and use of surveying instruments. Errors processing and data analysis. Principles and practice in measuring distances, elevations and angles. Levelling, traverse, mapping, horizontal and vertical curves and earthwork computations using state-of-the art data capture; processing and presentation. Topographic surveying and subdivision of land. Use of GIS, GPS, survey and remotely-sensed data integration. Teamwork projects and applications using field instruments and GIS software. *Prerequisite: MTH 104.*

CVE 272/ ARC 240 Structural Principles: Statics and Strength of Materials (2-3-3).

Introduction to the graphic and mathematical description of structural behavior, as well as to the structural properties of the various materials used in typical architectural construction. Includes discussion of material quality and performance within the context of international standards (DIN, ISO, etc.). Taught in Department of Civil Engineering. *Prerequisite: PHY 104.*

CVE 301 Theory of Structures (2-3-3). Calculation of reactions for statically determinate beams, frames, trusses and composite structures. Force calculation in trusses. Shear and moment diagrams for beams and frames. Deflection calculations. Influence lines for determinate structures. Arches and cables. Analysis of statically indeterminate structures including continuous beams and frames using the following: consistent displacement, virtual work and energy, three-moment equation, slope deflection and moment distribution methods. Use of commercial software for structural analysis. *Prerequisite: NGN 223.*

CVE 302 Civil Engineering Lab II (0-3-1). 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. Written reports covering the planning, execution, results and conclusions of the investigation. Emphasis on teamwork. *Co-requisite: CVE 221.*

CVE 303 Civil Engineering Lab III (0-3-1). Experiments in fluid and soil mechanics. Laboratory experiments to explore fluids and geotechnical test equipment and techniques. Applications of testing principles to the measurement of fundamental aspects of soil behavior from classification to engineering properties. Emphasis on rigorous techniques to measure mechanical behavior under various boundary conditions. Exposure to error estimation. Laboratory studies utilizing standard test methods and equipment to assess physical, mechanical, chemical and hydraulic properties of fluids and soils for application in civil engineering design. Laboratory measurements of fluid static and dynamic properties and flow visualization. *Co-requisite: CVE 331.*

CVE 311 Structural Design (2-3-3). Loads on structures. Design criteria and factors of safety. Analysis and design of reinforced concrete beams, columns, one-way slabs and footings using ultimate strength methods. Bond and development of reinforcement. Deflections and cracks. Design of structural steel tension members, compression members, beams, columns and connections. *Co-requisite: CVE 301.*

CVE 321 Numerical Methods and Computer Applications in Civil Engineering (2-3-3). Introduction to numerical analysis. Application of computers to solution of civil engineering problems using various numerical methods. Foundation subjects in modern software development techniques for numerical algorithms. Mathematical modelling. Basic problem solving techniques using computational methods. Numerical solution of non-linear equations. Solution to systems of algebraic, non-linear and differential equations. Numerical differentiation and integration. Object-oriented software design, data structures, sorting and searching algorithms. Finite difference method. Introduction to finite element method. Case studies. *Prerequisite: MTH 205, or consent of instructor.*

CVE 331 Geotechnical Engineering Principles (2-3-3). Physical properties of soils, classification systems, soil structure and soil water systems, effective stress principle, stresses in soil due to applied loads. Compressibility, consolidation and swell. Permeability and seepage analysis. Soil compaction. Stress-strain-shear strength relationships of soils, failure criteria and direct and triaxial shear testing. Soils used in construction. *Prerequisite: NGN 223 and CVE 231.*

CVE 333 Geotechnical Engineering Design (1-6-3). 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 and pile caps. End bearing and friction of deep (piles and caissons) foundations. Settlement of piles. Introduction to design of piles. Dewatering and ground water control. Introduction to soil dynamics and machine foundations. Extensive use of computer aided design in team-projects. *Prerequisite: CVE 331.*

CVE 341 Hydraulic Engineering (2-3-3). Review of basic conservation principles of continuity, energy and momentum. Similitude and hydraulic models. Incompressible flow in pipes. Fluid dynamic drag. Analysis and design of hydraulic projects using modern computational procedures. Team projects involving steady and unsteady flow in pipelines and pipe networks, open channel and pipe network hydraulics, water supply canals and bridge and culvert hydraulics. Collection and distribution of water; pumps and pumping stations. Design of water supply distribution network; design of water supply in buildings. Introduction to ground water hydraulics. *Prerequisite: NGN 241.*

CVE 351 Water and Wastewater Treatment (2-3-3). Quantity and quality of water and sewage; chemical, physical and biological processes that affect materials in engineered and natural systems; water quality modeling; water and wastewater treatment; sewerage systems; flow in sewers; sewage disposal. Design of sanitary and storm sewers; theory of wastewater treatment processes; design of unit operations; on-site wastewater treatment; waste stabilization ponds, water re-use; industrial wastewater. Design of intake works. Solid and hazardous waste disposal; air quality. Theory of water treatment processes; design of water treatment units. Treatment of sea and brackish water. *Prerequisite: CHM 101, Co-requisite: CVE 341.*

CVE 361 Transportation Engineering (2-3-3). Highway functions. Principles and methods in planning, design and operation systems. Driver and vehicle performance capabilities. Highway classifications. Highway geometric design controls and criteria. Location studies. Design of highway cross-section, horizontal and vertical alignments. Design of at-grade intersections, grade separation and interchanges. Highway drainage elements. Flexible and rigid pavement design principles. Introduction to traffic analysis and transportation planning. *Prerequisite: CVE 241, Co-requisite: CVE 331.*

CVE 371/ARC 341 Structural Analysis: Conceiving Forces in Buildings (2-3-3). An introduction to the concepts and procedures used to analyze and predict the behavior of buildings in response to static and dynamic loads on the structure. Extensive use of the computer and appropriate software to model, analyze, simulate and animate structural behavior. Taught in Department of Civil Engineering. *Prerequisite: CVE 272/ARC 240.*

CVE 372/ARC 342 Structural Design: Concrete, Steel and Wood (2-3-3). An introduction to methods and concepts used by the structural engineer in the design of reinforced concrete buildings. Structural design is presented as a search for strategies appropriate to realize architectural form, synthesizing the structural imperatives of regularity and rationality with specific desires for formal relationships and environmental qualities. Taught in Department of Civil Engineering. *Prerequisite: CVE 371/ARC 341.*

CVE 401 Civil Engineering Lab IV (0-3-1). Experiments in environmental engineering and surface and ground water hydrology. Laboratory work: sampling, physical, chemical and bacteriological analysis of water and wastewater. Laboratory sessions utilizing standard test methods and equipment for measurement of important environment parameters. Sampling methods and data presentation. Experiments in water surface run off and subsurface infiltration and flow, experiments in closed conduit,

open channel tests. *Co-requisite: CVE 351.*

CVE 411 Structural Concrete Design (2-3-3). Introduction to flooring and structural systems. Design of reinforced concrete members including: two-way floor systems, beams for torsion, slender columns and biaxial bending of columns. Analysis and design of framed buildings. Yield line theory method. Prestressed concrete: analysis and design methods, loss of prestress, design of sections for bending, shear and compression, special material properties needed for effective prestressing. Computer analysis and design of structures. Emphasis on team-based learning through specific design projects. *Prerequisite: CVE 311.*

CVE 412 Finite Element Method (2-3-3). Basic principles of continuum mechanics. Formulation of finite element methods for analysis of problems in solids, structures, fluid mechanics and heat transfer. Conservation laws and variational principles. Kinematics of deformations, strain and stress measures, constitutive relations. Elastic, inelastic and plastic deformations of solids. Field equations. Discretization of governing equations using finite element methods. Solutions of selected boundary value problems. Computer coding techniques and use of an existing general purpose finite element analysis program. *Prerequisite: CVE 301 and CVE 321 or consent of instructor.*

CVE 431 Selected Topics in Mechanics and Design of Concrete Structures (1-6-3). Selected topics involving the design of the following reinforced and/or prestressed concrete structures: bridges, culverts and protection work, water retaining structures, water tanks, arch dams, tall buildings to resist lateral load such as earthquakes and wind loads, shell and memberane structures, domes, hyperboloids, folded plates, concrete tunnels, bunkers, silos and buried conduits. Computer-based methods for analysis and design of large-scale complex structural systems. *Prerequisite: CVE 311.*

CVE 434 Structural Steel Design (2-3-3). Design of structural steel elements found in buildings and bridges including tension, compression and flexural members; members under combined axial and bending stresses, plate girders, slender columns; column base plate, bolted and riveted connections, welded connections, built-up members, connections in buildings, design for shear, composite beams, and tubular members. Design of roof trusses, space framed structures, and steel girder and cable stayed bridges. Introduction to plastic design. *Prerequisite: CVE 311.*

CVE 437 Advanced Concrete Technology (2-3-3). Design of special concrete mixes, curing methods, admixtures, fiber-reinforced concrete, polymer concrete. Hot and cold weather concrete. Concrete construction in hot weather with special reference to the Middle East. Design of concrete mixes based on experience with local construction materials. Concrete deterioration and durability aspects. Maintenance and repair materials and methods. Ready mixed concrete. Precast concrete. Concrete production and quality control. High performance concrete materials and their use in innovative design solutions. *Prerequisite: CVE 221 and CVE* 302.

CVE 441 Advanced Soil Mechanics (2-3-3). Stress-strain and strength properties of dry and saturated cohesionless and clayey soils. Basic shear strength principles. Loading induced pore pressure and its influence on strength and compressibility. Stress path concept. Drained and undrained loading. Classes of stability problems. Effective and total stress analysis procedures. Factors affecting shear strength parameters. Lateral earth pressure theories and methods of slope stability analysis. Secondary consolidation. Undrained settlement. Engineering properties of compacted soils. Analysis of earth retaining structures and slope stability under drained and undrained conditions. *Prerequisite: CVE 303 and CVE 331.*

CVE 442 Advanced Foundation Engineering (2-3-3). Site investigation with emphasis on in-situ testing. 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, reinforced earth structures and deep foundations including: drilled piers, drive piles, caissons and shafts. Pile load test. Piles subjected to lateral loading. Offshoring. Design of staged construction embankments. Emphasis on design of locally used geotechnical structures. Problematic soil and ground improvement. Extensive use of computer aided design in team-projects. *Prerequisite: CVE 333.*

CVE 445 Environmental Geotechnology (2-3-3). Definition of hazardous waste. Waste characteristics. Geotechnical aspects of hazardous waste management and remediation. Geochemistry and contaminant transport. Characterization and remediation of contaminated sites. Site investigation techniques and remediation technologies. Monitoring requirements. Design and operation of land-based waste containment structures, landfills, impoundments and mine-waste disposal. *Prerequisite: CHM 101, CVE 303 and CVE 331.*

CVE 446 Geotechnical Dam Engineering (2-3-3). Regional geoscience and seismotectonic investigations. Related subsurface exploration programs. In-situ permeability testing. 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. Grouting in the ground. Introduction to earthquake analysis and design of earth and rockfill dams. Special considerations: liquefaction problems, sinkholes, land subsidence, foundation defects and dispersive soils. Compaction methods. Monitoring and staged construction. Case studies. Computer aided design projects. *Co- requisite: CVE 333.*

CVE 447 Irrigation and Drainage Engineering (2-3-3). Soil/plant/water relationships. Crop water requirements. Methods of irrigation (surface, sprinkle, drip, subsurface). Irrigation scheduling; water logging and salinity control, drainage criteria. Artificial drainage systems. Operation and maintenance of irrigation systems. *Prerequisite: CVE 303 and CVE 341.*

CVE 448 Port and Harbor Engineering (2-3-3). Wave characteristics and transformation, wind generated waves, wave forces and concepts and theories of wave structure interaction. Water level fluctuations (tides). Structural dynamics and design of ocean structures. Vibration of submerged structures. Planning and layout of port facilities. Coastal and ocean structures. Underwater systems. Naval architecture. Design of seawalls, breakwaters, fixed offshore installations and pipelines. Dredging. Introduction to design of ocean engineering structures and facilities. Design of selected coastal structures. Hydraulic considerations. Introduction to selected coastal engineering problems. *Prerequisite: CVE 301 and CVE 341.*

CVE 450 Environmental Pollution Engineering and Control (2-3-3). Pollution of water bodies and control. Self purification process. Measurement of water quality, water quality for various beneficial uses. Effect of consumption and growth. Measurement of air quality; air pollution control, guidelines and standards. Environmental impact assessment. Global atmospheric change and its effects. Ozone depletion. Hazardous substances and risks. *Prerequisite: CVE 351 and CVE 401.*

CVE 452 Selected Topics in Water Engineering (2-3-3). Selected topics among the following: unsteady closed conduit flow, non-uniform open channel flow, hydraulic machinery (pumps and turbines), mechanics of sediment transport, turbulent jets and diffusion processes, saturated and unsaturated flow through porous media and design of hydraulic structures. *Prerequisite: CVE 341 and senior standing.*

CVE 453 Selected Topics in Environmental Engineering (2-3-3). Water purification processes in natural systems: planning, feasibility assessment and site selection, basic process responses and interactions. Response of waterbodies to

pollution sources. Characteristics and treatment of industrial wastewater. Water stabilization. Characterizations and methods of solid waste disposal. Hazardous waste disposal. Water quality assessment of natural environmental systems. Modelling of fate and transport of contaminants in aquatic systems. Design of water quality control facilities. *Prerequisite: CVE 351, CVE 401 and fourth year (senior) standing.*

CVE 455 Environmental Impact Assessment, Protection and Public Health (3-0-3). Humanity and environment. Communicable and non-communicable diseases. Technology-environment interactions. Environmental concerns. Environmental risk assessment. Comprehensive environmental planning and management of impact studies. Assessment of impacts of engineering projects on environment. Small water and wastewater systems. Solid waste and hazardous spills management. Environmental monitoring. *Prerequisite: CVE 351 and CVE 401.*

CVE 456 Traffic Engineering (2-3-3). Characteristics of road users, vehicle and roadway as related to design and operation of traffic facilities. Characteristics of traffic stream: speed-flow density, traffic volume, traffic accidents, travel time and delay, parking. Capacity and level of service of freeways, signalized intersections, at-grade intersection design. Transportation models. Design of traffic control devices and information systems for streets and highways. *Prerequisite: senior standing.*

CVE 458 Pavement Design (2-3-3). Soil engineering for highway design. Pavement design parameters. Material characterization, techniques used in construction, and appropriate test methods. Asphalt concrete mix design. Design methods of flexible highway pavements; design of rigid pavements; pavement distress types and their maintenance and rehabilitation. Earthwork operations and equipment. *Prerequisite: CVE 221 and CVE 331.*

CVE 459 Engineering Urban Systems Planning (2-3-3). Urban planning from an engineering point of view. Land use patterns. Planning data collection and analysis. Location and design requirements for various land uses. Interrelationship of transportation and land use and methods of plan development. Transportation planning. Component of the passenger transportation system. Modeling the demand for transportation services. Methods of improvement of system control. Planning, design and operations of water resources systems using mathematical simulation and optimization methods and models. Economic analysis and operation research techniques applied to urban system planning. *Prerequisite: CVE 341, CVE 361 and senior standing.*

CVE 461 Advanced Surveying (2-3-3). Measurements and errors. Precision and accuracy. Horizontal control surveying: intersection and resection, transformation of coordinates, horizontal control networks. Position computations on the surface of the earth as a plane, sphere, and ellipsoid. Tacheometry and electronic distance measurements (EDM) Systems. Route surveying. Setting out of different construction works. Determination of astronomic latitude, longitude and azimuth. Photogrammetry. Modern surveying and mapping techniques. *Prerequisite: CVE 241.*

CVE 463 Construction Management (2-3-3). Management in construction industry. Development and organization of projects. Management organizations. Preconstruction planning, scheduling, estimating and design. Bidding and award. Selection of a professional construction manager. Project control. Work breakdown structure. Linear scheduling. Critical Path Method. Precedence diagram methods. Resource leveling. Least-cost scheduling. Scheduling software. Project cost control. *Prerequisite: senior standing.*

CVE 464 Building Construction (2-3-3). Masonry construction. Steel frame construction. Cast-in-place concrete framing systems. Precast concrete framing systems. Roofing. Glass and glazing. Cladding. Interior finishes. Interior walls and partitions. Finish for ceilings and floors. Preconstruction site investigation. Earthwork methods. Construction equipment. Drilling and blasting of rocks. Soil compaction methods and equipment. Material handling and transportation. Formwork. Cranes. Construction methods of: shallow and deep foundations, bracing and excavation support, retaining and earth structures. Contract documents. Specifications and bill of quantities. Different types of contract and construction related drawings. Method statetment for construction. Work inspection and quality control. *Prerequisite: CVE 221, CVE 301, Co-requisite: CVE 333.*

CVE 466 Engineering Hydrology (2-3-3). Qualitative approach to the hydrologic cycle. Quantitative hydrology, analysis of precipitation data, estimation of evaporation. Evapo-transpiration and infiltration. Rainfall-runoff relationships. Stream flow hydrographs. Reservoir and stream routing. Surface-groundwater interactions. Darcy equation, well equation, well design. Steady and transient pumping tests; modeling of aquifer system. Introduction to design of dams, reservoirs, spillways, urban storm-water drainage and flood damage mitigation sea water intrusion in coastal aquifers. Water engineering design projects. *Prerequisite: CVE 341.*

CVE 467 Project Estimating, Planning and Control (2-3-3). Cost estimating for construction. Economic analysis and evaluation of engineering projects. Systems analysis, synthesis and optimizations. Applications to civil engineering projects. Introduction to investments, interest, financial mathematics and financing methods. Profit determinations. Factors influencing planning, design, execution and maintenance of engineering projects. Project estimating, planning and controls. Introduction to contracting; bidding and awarding. Labor and equipment costing and productivity. Job costs, project cost control. Materials procurement. Introduction to project management. *Prerequisite: senior standing.*

CVE 468 Systems Construction Management, Scheduling and Control (2-3-3). Basic elements of management of civil engineering projects. Roles of all participants in the process. Coordination with various authorities. Emphasis on contractual aspects, contract documents. Construction planning and scheduling. Supervision management, management organization, delegated duties and authorities. Project administration, work breakdown structure. Procurement schedule. Resources: labor, equipment, material, and plants; manpower-equipment schedule. Program of execution. Quality control systems. Quality assurance program, inspection formats and operations. Materials submittals. Measuring and testing, safety and security; variations; claims; progress reports and bill of quantities. Settlement of disputes. *Prerequisite: senior standing.*

CVE 480 Advanced Topics in Structural Design (2-3-3). Advanced topics in structural design for Architecture. *Prerequisite: CVE 372/ARC 342.*

CVE 498 (0-3-1)/CVE 499 (1-6-3) Civil Engineering Design Project I and II. An open-ended, in-depth design project of civil engineering significance that includes the design of a civil engineering system meeting desired objectives within one of the civil engineering practice areas. Students work in close accord with one or more faculty members, preferably in a team environment. Students apply civil engineering principles to the design and preparation of the plans and specifications of a civil engineering project. This includes implementation throughout project work of analysis and design addressing: functions, loads, layouts of force systems, analysis, specifications, cost comparisons and maintenance. 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/ARC 561 Professional Practice II: Construction Management (3-0-3). In-depth study of the interrelationships among the various professional disciplines in the building and construction industry as they pertain to issues of the management and planning of complex construction projects.

Includes review of standard practices of tendering, contracting, quantity surveying, cost estimation, supervision, quality control and economy. Taught in Department of Civil Engineering. *Prerequisite: ARC 431, ARC 452 and ARC 460.*

COE Computer Engineering

COE 210 Introduction to Computer Engineering (1-3-2). A laboratory and projects based course that concentrates on basic concepts of computer engineering. Boolean algebra. Gates. Integrated circuits. Combinational and sequential circuits. Computer aided tools such as Pspice, electronic workbench and OR-CAD. Computer languages. Computer applications in manufacturing, control, design and information analysis. Students have to complete a hardware or software project related to digital systems. *Prerequisite: NGN 111.*

COE 221 Digital Systems (3-0-3). Number systems. Representation of information. Introduction to Boolean algebra. Combinational circuits analysis and design. Sequential circuits analysis and design.

COE 221L Digital Systems Lab (0-3-1). *Co-requisite: COE 221.*

COE 222 Computational Methods in Electrical and Computer Engineering (3-3-4). Design and analysis of programs in C. Computing using structured programming concepts. Numerical errors. Curve fitting. Linear systems of algebraic equations. Numerical solutions of differential equations. Optimizations techniques. Search methods. Applications to electrical and computer engineering. *Prerequisite: MTH 205.*

COE 331 Microprocessor-Based Systems (3-0-3). Software model of microprocessors; programming of microprocessors. Memory system and memory interface. Input/output interface: parallel input/output ports. Serial input/output ports. Interrupts. Direct Memory Access (DMA). Design of microprocessor-based systems. *Prerequisite: COE 221.*

COE 331L Microprocessor-Based Systems Lab (0-3-1). *Co-requisite: COE 331.*

COE 371 Computer Networks (3-0-3). Network classifications, architecture and topologies. Layered reference models. Functional description of layers. Switching and routing. Network protocols. Network control: traffic management and congestion. Examples of networks such as the Internet. *Prerequisite: ELE 221 and ELE 361.*

COE 371L Computer Networks Lab (0-3-1). *Prerequisite: COE 371.*

COE 381 Operating Systems (2-3-3). Introduction to operating systems. Process management, process scheduling; inter-process communication. Memory management techniques. Virtual memory; 1/0 man-agement; deadlock avoidance; file system design. Security issues. Examples from commonly-used operating systems (e.g. Windows and UNIX). *Co-requisite: COE 331.*

COE 411 Computer Architecture and Organization (3-0-3). Introduction and historical overview. The five classic components of a computer. Performance measures for computers. CPU description at the instruction level. CPU organization. CPU types. CPU design: register transfer language, hardwired and micro-program control, CISC and RISC processors. Instruction and hardware study of a commercial microprocessor. *Prerequisite: COE 331.*

COE 421 Switching Circuits (3-0-3). Threshold, symmetric functions and iterative networks. Multivalued and fuzzy logic. Complex sequential machine realization. State equivalence and minimization. Automata and linear machines. State identification and fault detection. *Prerequisite: COE 221.*

COE 422 Database Engineering (3-0-3). Theory, design and applications of database machines. Hardware implementation of database functions such as search, sort, relation operations and others. Examples of early and current machines. *Prerequisite: COE 222.*

COE 423 Artificial Neural Systems (3-0-3). Introduction to theory, architecture and application of artificial neural systems. Supervised, unsupervised and reinforcement learning in single and multiple layer neural networks. Associative neural memory recording and retrieval dynamics. Self-organizing maps. Learning capacity and generalization. Hardware implementations. *Prerequisite: COE 222.*

COE 424 Design of Digital Computers (3-0-3). Design of arithmetic units. Design of hardwired and micro-programmed control units. Design of semiconductor memories. Direct memory access circuits. Design of a small computer. *Prerequisite: COE 331.*

COE 425 Modern Computer Organization (3-0-3). Memory organization: memory hierarchy, cache memory, virtual memory and memory management. Pipelining: pipeline hazards. Multiple functional units. Superscalar and vector processors. Parallel processing: SIMD Computer – MIMD computers – MIMD classification. Interconnection networks, interprocessor arbitration, interprocessor communication. Software for multiprocessors – commercial computer design examples. Design project. *Prerequisite: COE 411.*

COE 426 Selected Topics in Computer Engineering (3-0-3). Selected topics in the field of Computer Software and Hardware Engineering that deal with new trends and practical issues.

COE 429 Computer Graphics (3-0-3). Hardware and software aspects of graphics generation. Programming assignments will provide practical experience in implementing and using standard graphic primitives and user interfaces. *Prerequisite: COE 222.*

COE 430 Algorithms and Data Structures (3-0-3). Structured and modular design and implementation; arrays, records, sets, pointers, files, strings. refined types stacks, queues; searching, hashing, sorting; recursion. Procedure specifications, exceptions, testing, debugging. *Prerequisite: COE 222.*

COE 431 Computer Applications in Industry (3-0-3). Microprocessor-based data acquisition and control. Computer process control. Programmable logic controllers. Computer aided design. Computer aided manufacturing. Computer integrated manufacturing. *Prerequisite: COE 331 and COE 351.*

COE 444 Digital Signals Processing (3-0-3). Overview of continuous and discrete signal processing. Discrete Fourier transform. Fast Fourier transform. Signal sampling and reconstruction. Digital filters. Correlation and spectral estimations. *Prerequisite: ELE 321.*

COE 455 Digital Image Processing (3-0-3). Basics of digital images. Image transforms. Image enhancement. Image point processing and filters. Image restoration. Image compression. Image segmentation. Edge detection and thresholding. *Prerequisite: COE 444.*

COE 456L Computer Systems Applications Lab (0-3-1). Various software and hardware applications of computer systems. *Prerequisite: COE 331 and COE 351.*

COE 498: Design I (2-0-2). 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 will work in teams to define, complete, validate and document their design project. They will work in close accord with one or more faculty members. The course emphasizes engineering ethics and communication skills. *Prerequisite: senior standing.*

COE 499: Design II (3-0-3). Continuation of COE 498. *Prerequisite: COE 498.*

ELE Electrical and Electronic Engineering

ELE 210 Introduction to Electrical and Electronic Engineering (1-3-2). A project based course that concentrates on basic concepts of electrical and electronic engineering. Introduction to the electrical engineering program at AUS and specializations within electrical and electronic engineering. The electrical engineering profession and society. Engineering ethics. Electrical variables. Electrical and electronic devices and applications. Every student is expected to assemble an electronic or electromechanical system where electrical/electronic shop experience is emphasized. *Prerequisite: NGN 111.*

ELE 211 Electric Circuits I (2-3-3). Physical concepts and mathematical analysis of electric circuits. DC, transient, and sinusoidal steady-state analysis of circuits. Laboratory experiments and use of PSpice, and MATLAB. *Prerequisite: PHY 102.*

ELE 212 Electric Circuits II (2-3-3). Laplace transforms. Applications of Laplace transforms in circuit analysis. Frequency response. Fourier series analysis. Two-port networks. *Prerequisite: ELE 211.*

ELE 212L Electric Circuits Lab (0-3-1). *Prerequisite: ELE 211. Co-requisite: ELE 212.*

ELE 241 Electronics I (3-0-3). Review of semiconductor physics. PN junction. Diode circuits. Special diodes. Bipolar junction transistor (BJT). Biasing, small signal analysis and design of BJT amplifiers. Biasing, small signal analysis and design of MOSFET amplifiers. Differential and operational amplifiers. *Prerequisite: ELE 211.*

ELE 241L Electronics I Lab (0-3-1). *Prerequisite: ELE 241.*

ELE 311 Engineering Electromagnetics (3-0-3). Vector algebra. Vector calculus. Electrostatic fields. Electrostatic boundary conditions, magnetostatic fields. Magnetic materials. Maxwell's Equations. Electromagnetic wave propagation. Transmission lines. *Prerequisite: MTH 205 and PHY 102.*

ELE 321 Signals and Systems (3-0-3). Signals and systems, continuous and discrete. Systems modeling. Convolution of discrete-time continuous signals. The Fourier series and Fourier transform. Generalized Fourier transform. Discrete-time Fourier transform. Frequency domain analysis of systems. The Laplace transform and the transfer function representation. The Z-transform and discrete-time systems. Introduction to design of digital filters and controllers. *Prerequisite: ELE 212 and MTH 221.*

ELE 332 Measurements and Instrumentation (3-0-3). Basic measurement concepts. Error and statistical analysis. Electrical measuring instruments. Field measurements such as displacement, temperature, pressure, flow, level. Transducer interfacing. Digital instrumentation. Data acquisition and control. Noise reduction techniques. *Prerequisite: ELE 212 and ELE 241.*

ELE 332L Measurements and Instrumentation Lab (0-3-1). *Prerequisite: ELE 332.*

ELE 341 Electronics II (3-0-3). Power amplifiers. Frequency response characteristics of amplifiers. Feedback and stability. Oscillators. Active filters. Pulsed waveforms and timing circuits. Digital to analog conversion (D/A). Analog to digital conversion (A/D). *Prerequisite: ELE 241.*

ELE 341L Electronics II Lab (0-3-1). *Prerequisite: ELE 341.*

ELE 351 Electric Power Engineering (3-0-3). Three-phase analysis. Principles of electromagnetism. Single and three-phase transformers. Electromechanical energy conversion. DC and AC machines. *Prerequisite: ELE 211 or NGN 225.*

ELE 351L Electric Machines and Power Systems Lab (0-3-1). Test and analysis of electric power and machines devices and the design of systems using these devices. *Prerequisite: ELE 351. Co-requisite: ELE 371.*

ELE 353 Control Systems I (3-0-3). Mathematical models of systems. State variable models. Feedback control system characteristics. Performance and stability of feedback control systems. The root-locus method. Stability in the frequency domain. Design of feedback control systems. The design of state variable feedback systems. Robust control systems. *Prerequisite: PHY 102 and MTH 205.*

ELE 353L Control Systems I Lab (0-3-1). *Prerequisite: ELE 353.*

ELE 361 Communications I (3-0-3). Spectral density, correlation functions. Signal transfer through networks. Ideal filters. Analog modulation. Amplitude modulation systems (DSB-SC, DSB-TC, QAM VSB). Frequency Division Multiplexing (FDM). Gaussian processes, narrow band noise. Noise in AM systems. Angle modulation (PM, FM) and application. Noise in FM systems, Pre- and de-emphasis. Practical aspects in sampling theorem. Pulse analog modulation systems (PAM, PWM, PPM). *Prerequisite: ELE 311 and ELE 321.*

ELE 361L Communications I Lab (0-3-1). *Prerequisite: ELE 361.*

ELE 371 Power Systems I (3-0-3). Power system concepts and per unit quantities. Transmission line, transformer and rotating machine modeling. Steady-state analysis and power flow. *Prerequisite: ELE 351. Co-requisite: MTH 221.*

ELE 425 Optoelectronics (3-0-3). Nature of light. Laser light, principles of laser action, characteristics of gas laser, organic dye laser and solid state laser. Optical fibres. Photodetectors. Imaging systems. Display devices. Applications of optoelectronics. *Prerequisite: ELE 341.*

ELE 432 Medical Instrumentation I (3-0-3). Principles of medical instrumentation. Biomedical sensors and transducers. Temperature, displacement, acoustical, chemical and radiation measurements. Biopotential amplifiers and signal processing. The origin of biopotentials. Biopotential electrodes. Measurement of biopotentials such as ECG, EEG and EMG. Blood pressure measurements. *Prerequisite: ELE 332 and ELE 341.*

ELE 433 Medical Instrumentation II (3-0-3). Blood flow measurements. Respiratory system measurements. Chemical biosensors. Clinical laboratory instrumentation. Therapeutic devices. Electrical safety. *Prerequisite: ELE 432.*

ELE 434 Medical Imaging (3-0-3). Ultrasound imaging. Introduction to medical radiology and x-ray imaging. Computerized tomography. Principles of magnetic resonance imaging. *Prerequisite: ELE 432.*

ELE 435 Medical Signal and Image Processing (3-0-3). Sampling and signal acquisition. Physiological signal detection. Noise reduction. Adaptive signal processing. Analysis of medical images. Mathematical formulation of images. Image transformation and reconstruction. Noise reduction and image filtering and enhancement. *Prerequisite: ELE 432.*

ELE 436 Biomedical Materials (3-0-3). Types of materials used for biomedical applications. Relationship between biological systems and materials structure. Effect of physiological conditions on biomedical materials. Choosing, processing and modifying materials for biomedical applications. Biomedical material advances on sensors and transducers. *Prerequisite: ELE 432.*

ELE 438 Selected Topics in Medical Electronics (3-0-3). Selected topics in the field of medical electronics that deal with new trends and practical issues. *Prerequisite: ELE 432.*

ELE 439L Medical Electronics Systems Lab (0-3-1). Various medical electronics applications. *Prerequisite: senior standing.*

ELE 443 Power Electronics and Drives (3-0-3). Power semiconductor devices. Line commutated converters. AC switching controllers. Choppers. Inverters. Adjustable speed DC and AC motor drives. *Prerequisite: ELE 341.*

ELE 444 Control Systems II (3-0-3). State-space modeling and analysis. Controllability and observability. State feedback design and pole placement. Dynamic observers and output feedback design. Multivariable systems in the frequency domain and design by Nyquist array techniques. Introduction to optimal control systems. Introduction to nonlinear control systems. *Prerequisite: ELE 353.*

ELE 446 Selected Topics in Communication Engineering (3-0-3). Selected topics in the field of Communication Engineering that deal with new trends and practical issues. *Prerequisite: ELE 361.*

ELE 451 Communications II (3-0-3). Radio broadcasting systems. Television systems. Audio and video recording. Telephony systems. Mobile communication systems. Telegraphy systems. Facsimile systems (analog and digital). Microwave links. Satellite systems. Radar systems (primary and secondary). Optical fiber systems. Data and computer communication systems. *Prerequisite: ELE 361.*

ELE 452 Digital Communications (3-0-3). Model of digital communication systems. Geometric interpretation of signals. Detection of known signals in noise. Coding techniques: PCM, DPCM, DM, ADM. Digital modulation techniques. Bandwidth efficiency, intersymbol interference, synchronization. Error-correcting codes. *Prerequisite: ELE 361.*

ELE 453 Microwave Engineering (3-0-3). Electromagnetic plane waves. Microwave transmission lines, smith chart and stubs. Microwave wave guides and components. Microwave linear beam tubes. Microwave transistors and tunnel diodes. Avalanche transit-time devices. Gunn diodes. *Prerequisite: ELE 311.*

ELE 454 Antennas and Propagation (3-0-3). Linear antennas, transmission and receiving, near fields. Mutual and self impedances, radiation pattern. Dipole antenna, telescopic antennas. Loop antenna. Antenna arrays. YAGI antennas and the corner reflector. Circular and Parabolic dish antennas. Aperture antennas. *Prerequisite: ELE 311.*

ELE 457 Satellite Communications (3-0-3). Technical aspects of satellite communication, economical aspects of satellite communication. Design considerations of low, medium and high power transponders. Antenna types, and ground station design. *Prerequisite: ELE 361.*

ELE 458L Communications Systems Lab (0-3-1). Various communication engineering applications. *Prerequisite: senior standing.*

ELE 471 Digital Control Systems (3-0-3). Discrete-time systems and the Z-transform. Sampling and reconstruction. Open-loop and closed-loop discrete-time systems. System time-response characteristics. Stability analysis techniques. Digital controller design. State-space representations of discrete-time systems. Pole-assignment design and state estimation. Linear quadratic optimal control. *Prerequisite: ELE 353.*

ELE 472 Nonlinear Control (3-0-3). Analysis of nonlinear systems. Phase plane analysis, limit cycle, describing function and its applications. Stability analysis of nonlinear systems using Liapunov, input/output and asymptotic methods. Design methods of nonlinear controllers: linearization, absolute stability theory, sliding modes and feedback linearization. *Prerequisite: ELE 353.*

ELE 473 Industrial Instrumentation and Control (3-0-3). Review of measurements systems. 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. Closed control systems analysis and design. Introduction to distributed control systems. *Prerequisite: ELE 353 and ELE 332.*

ELE 474 Selected Topics in Control Systems (3-0-3). Selected topics in the field of control systems that deal with new trends and practical issues.

ELE 475 Distributed Control Systems (3-0-3). Distributed computer systems architecture. System elements. Data communications links. Software algorithms. Reliability. Applications. *Prerequisite: ELE 353 and ELE 361.*

ELE 476L Instrumentations and Control Systems Lab (0-3-1). Various instrumentations and control applications. *Prerequisite: senior standing.*

ELE 480 Electric Power Systems II (3-0-3). Theory of symmetrical components and application to analysis of power systems during fault conditions. Power system stability. Economic operation of power systems. Automatic Generation Control (AGC). *Prerequisite: ELE 371.*

ELE 481 Power System Protection (3-0-3). 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. Pilot wire protection of feeders. Standard protective schemes for system coordination of relays. *Prerequisite: ELE 480.*

ELE 482 Electric Power Distribution Systems (3-0-3). Concepts and techniques associated with the design and operation of electrical distribution systems. Load characteristics. Distribution substations. Choice of voltage levels. Loss minimization and voltage control. Calculation of impedances of unbalanced three-phase systems. Analysis techniques of radial systems. *Prerequisite: ELE 371. Co-rerequisite: ELE 480.*

ELE 485 Power Electronics (3-0-3). Electric power conditioning and control. Characteristics of solid state power switches. Analysis and applications of AC power controllers, controlled rectifiers, and DC choppers and DC-AC converters. *Prerequisite: junior standing in electrical engineering and approval of the instructor.*

ELE 486 Power Electronics and Drives (3-0-3). Application of semiconductor switching power converters to adjustable speed DC and AC motor drives. Steady state theory and analysis of electric motion control in industrial, robotic and traction systems. *Prerequisite: ELE 485*

ELE 486 Power Electronics and Drives (3-0-3). Application of semiconductor switching power converters to adjustable speed DC and AC motor drives. Steady state theory and analysis of electric motion control in industrial, robotic and traction systems. *Prerequisite: ELE 485*

ELE 487 Power Quality and Harmonics (3-0-3). Causes, analysis and solutions of poor power quality problems. Analysis of voltage sag and voltage surge. Surge protection. Harmonic effects and control. Harmonic filter design. Typical wiring and grounding problems. Monitoring of power quality. Application of Standards. *Prerequisite: senior standing in electrical engineering and approval of the instructor.*

ELE 488 Power Engineering Lab (0-3-1). Various power systems and power electronics applications including issues related to power transmission and distribution and adjustable speed motor drives. *Prerequisite: senior level standing in electrical engineering and approval of the instructor.*

ELE 489 Selected Topics in Power Engineering (3-0-3). Selected topics of current interest in Power Engineering. *Prerequisite: senior level standing.*

ELE 498 Electrical and Electronic Engineering Design Project I (0-6-2).

Introduces design methodology in electrical engineering through lectures and an open-ended, in-depth design project of significance in electrical or electronic engineering. 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 will work in teams to define, complete, validate and document their design project. They will work in close accord with one or more faculty members. The course emphasizes engineering ethics and communication skills. *Prerequisite: senior standing.*

ELE 499 Electrical and Electronic Engineering Design Project II (0-9-3). Continuation of ELE 498. *Prerequisite: ELE 498.*

NGN Engineering

NGN 110 Introduction to Engineering I (1-3-2). Common concepts in each of the engineering disciplines at AUS. Selected engineering systems, subsystems, processes and devices used in each discipline are reviewed. Introduction to engineering sketching and probability and statistics through field work. Use of data acquisition software, data sampling, data collection and graphical representation. Introduction to different statistical distributions. *Prerequisite: admission to the School of Engineering.*

NGN 111 Introduction to Engineering II (1-3-2). Tools and techniques of the engineering profession including manual and computer-aided drawing and workshop skills. Use of computer based analysis tools in statistical data analysis, data uncertainty and curve fitting in engineering applications. *Prerequisite: NGN 110.*

NGN 211 Introduction to Engineering III (1-3-2). Workshop skills, engineering team-based design projects. Introduction to reliability testing and total quality management. Course includes competition between student teams with awards given for superior achievement. *Prerequisite: completion of either CHE 210, CVE 210, COE 210, ELE 210 or MCE 210.*

NGN 221 Statics (2-3-3). Fundamental concepts and principles of mechanics, vectors and force systems. 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 and area moment of inertia. Friction. *Prerequisite: PHY 101.*

NGN 222 Dynamics (2-3-3). Fundamental concepts of kinematics and kinetics with application to motion of particles and plane motion of rigid bodies. 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. Energy and momentum methods. *Prerequisite: NGN 221.*

NGN 223 Mechanics of Materials (2-3-3). Stress and strain. Mechanical properties of materials. Axial load, torsion, bending and transverse shear. Combined loading. Stress transformation. Deflection of beams and shafts. Buckling of columns. *Prerequisite: NGN 221.*

NGN 224 Engineering Mechanics – Statics and Dynamics (2-3-3). Particle statics and dynamics. Vector mechanics. Free body diagrams. Two- and three-dimensional force equilibrium systems, rectilinear and curvilinear motion, Coriolis effects, considerations of work and energy, periodic motion. *Prerequisite: MTH 104, PHY 101.*

NGN 225 Electric Circuits and Devices (2-3-3). Electrical quantities and variables. Circuit principles. Signal processing circuits. DC and AC circuit analysis. Diodes, transistors, operational amplifiers and digital devices. Microprocessors. Not applicable to the major requirements in electrical engineering. *Prerequisite: PHY 102.*

NGN 231 Materials Science (2-3-3). Introduction to material science, relationships between structure and properties of materials. Atomic bonding, crystalline structures, crystal defects and imperfections. Phase diagrams and equilibrium microstructural development. Mechanical properties of materials, alloys, polymers and composites. Electrical and magnetic properties of materials, semi-conductors and ceramics. *Prerequisite: CHM 101.*

NGN 241 Fluid Mechanics (2-3-3). Fundamental concepts. Properties of fluids: specific gravity, viscosity and surface tension. Fluid statics: pressure and its measurement, hydrostatic forces on submerged surfaces, stability of floating bodies. Basic equations of motion: continuity, momentum and energy equations, Bernoulli's equation. Measurement of static and stagnation pressure, velocity and flow rate in closed conduits and open channels. Flow in closed conduits (internal flow), laminar and turbulent flow. Flow over immersed bodies (external flow). Lift and drag. Dimensional analysis and dynamic similitude. *Prerequisite: MTH 104, NGN 221.*

NGN 461 Management for Engineers (3-0-3). Engineers as managers. Nature of organizations. Functions of organizations. The tools of engineering management: engineering organizational models including cluster and matrix organization. Leadership, team-work and creativity, personnel management, finance, communication skills. Ethical and professional standards, total quality management. Case studies. *Prerequisite: senior standing in engineering.*

NGN 462 Engineering Project Management (3-0-3). Projects in engineering organizations. Project initiation. Effective project management, the project life cycle, planning and scheduling, resourcing, cost estimating. Project monitoring and control. Introduction to computer packages. Case study. *Prerequisite: senior standing in engineering.*

NGN 463 Quantitative Engineering Management I (2-3-3). Models in operational management. Linear programming: formulation of linear programming models, standard forms. Principles of the simplex method and nonlinear programming problems. Use of linear and nonlinear solvers with applications in various engineering fields including network analysis, resource allocation, transportation problems, product mix applications. The dual simplex method. Term project. *Prerequisite: senior standing in engineering.*

NGN 464 Engineering Economics (3-0-3). Economics concepts and theories of planning. Bases and methods of economic analysis of engineering projects. Application of these principles in understanding economic activity of private and public engineering companies at various micro and macroeconomic levels. *Prerequisite: junior standing in engineering.*

NGN 465 Quality Control for Production Systems (3-0-3). Control charts and diagrams (types, construction, application and implementation), control charts for variables, control charts for attributes, acceptance sampling: lot by lot acceptance sampling by attributes, acceptance sampling plans and standards, quality costs-product liability, quality improvement, implementation of quality control system, quality engineering.

NGN 466 Quantitative Engineering Management II (2-3-3). Continuation of NGN 463 with emphasis on nonlinear optimization, statistical process control, and random processes in industrial and urban systems. Introduction to simulation with applications in manufacturing systems, traffic systems and maintenance management. Reliability and cost benefit analysis. Term project. *Prerequisite: NGN 463.*

MCE Mechanical Engineering

MCE 210 Introduction to Mechanical Engineering (1-3-2). Engineering graphics: auxiliary views, sections, screws, fasteners and springs, tolerances and assembly drawing. Participation in design projects in the laboratory or the machine shop. *Prerequisite: NGN 111.*

MCE 231 Manufacturing Techniques (2-3-3). Manufacturing processes: casting, forming, turning, drilling and milling. Joining processes and equipment. Surface technology. Introduction to quality assurance and inspection. Introduction to CIM. *Prerequisite: NGN 231.*

MCE 241 Thermodynamics (2-3-3). First and second laws of thermodynamics. Entropy. Ideal cycles and processes. Air standard cycles. Steam properties, processes and cycles. *Prerequisite: PHY 101.*

MCE 311 Engineering Measurements (2-3-3). Introduction to techniques of engineering measurements. Data acquisition and processing systems. Calibration of instruments, response time and error analysis. Measurements of basic physical quantities (force, stress, strain, temperature, pressure, velocity, flow rate, heat flux, surface irregularities, frequency). *Prerequisite: NGN 225.*

MCE 312 Control Systems (3-0-3). Mathematical models of systems. State variable models. Feedback control system characteristics. Performance and stability of feedback control systems. The root-locus method. Stability in the frequency domain. Design of feedback control systems. The design of state variable feedback systems. Robust control systems, (cross-listed with ELE 353). *Prerequisite: NGN 222.*

MCE 312L Engineering Measurements and Control Lab (0-3-1). *Co-requisite: MCE 311 and MCE 312.*

MCE 316 Theory of Machines and Mechanisms (2-3-3). Introduction to mechanisms and their design philosophy. Application of graphical, analytical and computer aided techniques for analysis of displacement, velocity and acceleration of linkages. Force analysis in mechanisms. Gear trains. Cams. *Prerequisite: NGN 222.*

MCE 321 Mechanical Design I (2-3-3). Review of stresses and deflection of engineering members. Statistical considerations in design. Steady and variable loading. Design of screws, fasteners and connections. Welded joints. Mechanical springs. Flexible mechanical elements: flat and V-belts, wire ropes and chains. *Prerequisite: NGN 223.*

MCE 322 Mechanical Design II (2-3-3). Design of clutches, brakes and couplings. Power transmission equipment: shafts, axles and spindles. Rolling and journal bearings. Spur, helical, bevel and worm gears. Role of computers in the design process. *Prerequisite: MCE 321.*

MCE 335 Computational Techniques (2-3-3). Use of computational techniques for solving engineering problems with the aid of a digital computer. The computational techniques include: solution of linear and transcendental simultaneous equations, solutions of ordinary and partial differential equations, numerical integration and differentiation, matrix and vector manipulation, roots of polynomials, least-squares approximation and interpolation. *Prerequisite: MTH 205.*

MCE 344 Heat Transfer I (2-3-3). Steady-state conduction in various geometries. Transient conduction. Forced and natural convection. Analysis of heat exchangers. Radiation. *Prerequisite: NGN 241 and MCE 241.*

MCE 418 Modeling and Control of Engineering Systems (3-0-3). Introduction. Mechanical systems, mathematical models, analytical solutions of system input-output equations, numerical methods. Simulation of dynamic systems, electrical systems, thermal systems, fluid systems, mixed systems. System transfer functions, frequency analysis, system stability, control systems, discrete-time systems. Digital control systems. *Prerequisite: MCE 312.*

MCE 423 Mechanical Vibrations (2-3-3). Systems with single and multiple degrees of freedom. Damped and undamped free vibrations, forced vibrations. Eigenvalues and eigenvectors of multiple degrees of freedom system. *Prerequisite: MTH 205 and NGN 222.*

MCE 435 Analytical Design I (2-3-3). Basic material properties and their use in design. Stress-strain-temperature relations, inelastic material behavior, energy methods, torsion of non-circular bars, non-symmetric bending of straight beams. Curved beam theory. Thick-walled cylinders. *Prerequisite: MCE 321.*

MCE 436 Analytical Design II (2-3-3). Linear plate theory. Stress concentration. Introduction to fracture mechanics. Fatigue, creep and contact stress problems. Introduction to finite element analysis. *Prerequisite: MCE 435.*

MCE 439 CIM in Industrial Systems (2-3-3). Introduction to the development of control systems. Developments in manufacturing systems. Programming principles of NC and CNC systems. Manufacturing cells. Flexible manufacturing systems. Control of flexible manufacturing systems. *Prerequisite: MCE 231.*

MCE 445 Energy Systems (2-3-3). Gas turbine power plants. Steam power plants. Power plant components: boilers, condensers, evaporators and turbines. Energy balance and performance of power plants. *Prerequisite: MCE 344.*

MCE 446 Refrigeration and Air Conditioning (2-3-3). Basic refrigeration concepts. Refrigeration fluids, loads, cycles, equipment and applications. Air conditioning systems. Psychometric charts. Air duct design. *Prerequisite: MCE 344.*

MCE 447 Internal Combustion Engines (2-3-3). Internal versus external combustion engines. Automotive engines: air standard cycles, fuels and combustion, combustion in spark ignition and compression ignition engines, actual gas cycles, supercharging, knocking, fuel rating. Gas turbine engines: actual cycles, optimum operation, application to turbofan, turboprop and turbojet engines. Non-conventional engines. *Prerequisite: MCE 241.*

MCE 448 Heat Transfer II (2-3-3). Advanced conduction: basic equation and boundary conditions, analytical and numerical solutions of transient 1-D conduction and steady 2-D conduction. Convection: basic relations of convection, analytical solutions of some simple flows (forced and natural convection). Heat transfer in condensing and boiling processes. Radiation: energy exchange by radiation, advanced topics in radiation. Finite difference analysis of heat transfer problems. *Prerequisite: MCE 344.*

MCE 449 Renewable Energy Systems (2-3-3). Solar radiation. Collectors and concentrators. Solar heating for domestic and industrial uses. Passive heating and cooling of buildings. Solar refrigeration and desalination, solar pumping, solar electricity (PV-central receiver systems), solar ponds. Wind energy, statistical description of wind, Weibul distribution. Maximum power obtainable from the wind. Horizontal and vertical-axis wind turbines. Ocean tides. Ocean waves OTEC. Biomass and biogas. Geothermal energy. Economic evaluation of renewable energy systems and comparison with conventional and/or alternative power generating systems. *Prerequisite: MCE 344.*

MCE 464 Introduction to Robotics (2-3-3). Overview of robotics. Robot coordinate systems. Direct and inverse kinematics. Introduction to manipulator dynamics. Robot sensors and control strategies. Introduction to force control and compliance. Requirement of digital control of robots. *Prerequisite: senior standing.*

MCE 473 Applied Finite Element Analysis (2-3-3). Introduction to the finite element method, application in various engineering field problems, familiarization with

commercially available finite element packages, hands-on experience. *Prerequisite: senior standing.*

MCE 476 Design Optimization (2-3-3). Outline of classical design methods. Introduction to the formulation of optimization problems. Mathematical optimization. Optimal design methods. Practical design considerations. Term project. *Prerequisite: senior standing.*

MCE 477 Composite Materials (2-3-3). Advanced composite materials and applications. Stress-strain relationship for an orthotropic lamina. Laminate analysis. Static strength of laminates. Introduction to analysis of plates. Analysis of laminated beams. Design applications. Computer programs. *Prerequisite: NGN 223, NGN 231.*

MCE 491 Fluid Power (2-3-3). Components of a Fluid Power system. Properties of hydraulic fluids. Hydraulic pumps. Fluid power actuators: hydraulic cylinders and hydraulic motors. Control valves. Applications of hydraulic circuits. Introduction to pneumatics. *Prerequisite: NGN 241 or CHE 207.*

MCE 492 Advanced Fluid Mechanics (2-3-3). Compressible flow: fundamental concepts, isentropic compressible flow with area change, normal shock waves, performance of nozzles, frictional flow in constant-area ducts (Fanno flow), flow in constant-area ducts with heat transfer (Rayleigh Flow). Potential flow: stream function, velocity potential and solution of simple flows. Viscous flow: differential formulations, solution of simple flows, introduction to the numerical solution of 2-D viscous flows. Use of commercial CFD software. *Prerequisite: NGN 241, MCE 241 and MTH 205.*

MCE 493 Turbomachines (2-3-3). Classification of turbomachines, dimensional analysis, specific speed, model testing, basic laws. Incompressible flow turbomachines: centrifugal and axial flow pumps, Euler's theory, characteristics and laboratory testing, cavitation in pumps, system matching and hydraulic turbines. Compressible flow turbomachines: centrifugal compressors and fans, surge and choking in a compressor stage, axial flow compressors and gas turbines, reaction ratio, stage loading, stage efficiency, radial flow gas turbines. *Prerequisite or co-requisite: MCE 492.*

MCE 495 Selected Topics in Mechanical Engineering (3-0-3). Selected topics that meet student interests and reflect recent trends in the field of Mechanical Engineering. *Prerequisite: senior standing.*

MCE 496 Independent Study (1 to 3 hours). Involves investigation under faculty supervision beyond what is offered in existing courses. Prerequisite: consent of instructor.

MCE 498 Design Project I (0-6-2). 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 in close accord with 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.

MCE 499 Design Project II (0-6-2). Continuation of MCE 498. *Prerequisite: MCE 498.*

Full-Time Faculty

A

Abdel-Fatah, Akmal, Ph.D., University of Texas at Austin, 1999; Assistant Professor of Civil Engineering

Abdel-Hamid, Amr, Ph.D., Syracuse University, 1969; Professor of Mechanical Engineering and Vice Chancellor

Abdul Hadi, Zayid Abdullah, Ph.D., Université Laval, 1987; Associate Professor of Mathematics

Abdul-Hamid, Husein, Ph.D., American University, Washington D.C., 1996; Assistant Professor of Statistics

Abu Al-Foul, Bassam, Ph.D., University of Utah, 1994; Assistant Professor of Economics

Abualrub, Taher, Ph.D., University of Iowa, 1998; Assistant Professor of Mathematics

Abukhaled, Marwan, Ph.D., Texas Tech University, 1995; Assistant Professor of Mathematics

Abu-Muhanna, Yusuf, Ph.D., State University of New York at Albany, 1979; Associate Professor of Mathematics

Abu-Yousef, Imad, Ph.D., McGill University, 1996; Assistant Professor of Chemistry

Al Assaf, Yousef, Ph.D., Oxford University, 1988; Associate Professor of Electrical Engineering

Al Bataineh, Afaf Badr, Ph.D., Heriot–Watt University, 1998; Assistant Professor of Arabic

Al Ghoussein, Tarek, M.A., University of New Mexico, 1989; Assistant Professor of Photography

Al Hajj, Reda, Ph.D., Bilkent University, 1993; Associate Professor of Computer Science

Al Hasani, Nadia, Ph.D., University of Pennsylvania, 1990; Associate Professor of Architecture

Al Homoud, Azm, Ph.D., Massachusetts Institute of Technology, 1990; Professor of Civil Engineering

Al-Issa, Ahmad, Ph.D., Indiana University of Pennsylvania, 1998; Assistant Professor of English

Al Khazali, Osamah, Ph.D., University of Memphis, 1997; Assistant Professor of Finance

Al-Mohamad, Hussam, Ph.D., University of Paris XI, Centre d'Orsay, 1985; Associate Professor of Computer Science

Al-Musawi, Muhsin, Ph.D., Dalhousie University, 1978; Professor of Arabic

Al Nashash, Hasan, Ph.D., Kent University, 1988; Associate Professor of Electrical Engineering

Andreasian-Thomas, Noretta, Ph.D., Academy of Science of Estonia, 1987; Assistant Professor of Physics

Aouadi, Samir, Ph.D., University of British Columbia, 1995; Assistant Professor of Physics (on leave - 2000-2001)

Atiyah, Wadih, Ph.D., American University, Washington, D.C., 1995; Dean, School of Business and Management

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Badry, Fatima, Ph.D., University of California, Berkeley, 1983; Professor of English and Linguistics

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Caesar, Judith, Ph.D., Case Western Reserve University,1976; Assistant Professor of English

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Cook, Robert D., Ph.D., University of California at Los Angeles, 1967; Professor of Chemistry and Dean, College of Arts and Sciences

D

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Egan, Matthew J., M.F.A., University of South Dakota, 2000; Assistant Professor of Foundations

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Fernalld, Holly, M.A., Colorado State University, 1998; Instructor in Intensive English

Frasco, Gregg, Ph.D., Cornell University, 1988; Assistant Professor of Economics

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French, Roderick S., Ph.D., George Washington University, 1971; Professor of Philosophy and Chancellor

G

Giesen, Leslie, TESOL, American University of Beirut, 1983; Instructor in Intensive English

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Gill, Jaswinder, M.Ed., University of British Columbia, 1991; Instructor in Intensive English

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H

Hamad, Ahmad, Ph.D., Auburn University, 1997; Assistant Professor of Chemical Engineering

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Hatim, Basil, Ph.D., University of Exeter, 1981; Professor of English and Translation

Henry, Patrick, M.A., Columbia University, 1989; Instructor in Intensive English

Hewitt, David, M.F.A., Cornell University, 1979; Assistant Professor of Design

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Hicks, John, M.A., University of Nebraska, 1982; Instructor in Intensive English

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Jabbour, Rabih, Ph.D., University of Arizona, 1998; Assistant Professor of Chemistry

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Olson, Dennis, Ph.D., University of Wyoming, 1982; Professor of Finance

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Qaddoumi, Nasser, Ph.D., Colorado State University, 1998; Assistant Professor of Electrical Engineering

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Rab, Samia, Ph.D., Georgia Institute of Technology, 1997; Assistant Professor of Architecture and Heritage Management
Ragette, Friedrich, Ph.D., Vienna Technical University, 1971; Visiting Distinguished Professor of Architecture

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S

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T

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