American University of Sharjah

1999-2000 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

The Mission of the American University of Sharjah

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 to 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.

American University of Sharjah

Academic Calendar 1999-2000

Fall Semester	1999		
September	4-5	Saturday-Sunday	Institutional TOEFL for new students
	6-7	Monday-Tuesday	Placement tests
	7-8	Tuesday-Wednesday	New students orientation
	8-12	Wednesday-Sunday	Fall semester registration for returning students
	13-15	Monday-Wednesday	Fall Semester registration for new students
	18	Saturday 8:00 a.m.	Fall Semester classes begin
	18-22	Saturday to Wednesday	Add and drop period
October	30	Saturday	Last withdrawal day
November	4-6	Thursday-Saturday	Al Israa wal Miraj holiday and Fall break
December	2-4	Thursday-Saturday	U.A.E. National Day holiday
	12	Sunday	Institutional TOEFL for Spring applicants
	25	Saturday	Holiday
	27	Monday 10:00 p.m.	Fall Semester classes end
	28	Tuesday 8:00 a.m.	Study and examination period begins
January	1	Saturday	Gregorian New Year holiday
	5	Wednesday 10:00 pm	Study and examination period ends
	10-21	Monday-Friday 10:00 p.m.	Eid al Fitr holiday and mid-year break

Spring Semester			2000
January	22-24	Saturday-Monday	Spring Semester registration for returning students
	22-24	Saturday-Monday	Placement tests for new students
	25	Tuesday	New students orientation
	26	Wednesday	Spring registration for new students
	29	Saturday 8:00 a.m.	Spring Semester classes begin
	29	Saturday	Add and drop period begins
February	2	Wednesday	Add and drop period ends
March	8	Wednesday	Last withdrawal day
	16-31	Thursday-Friday 10:00 p.m.	Eid Al Adha and Wagfa and spring break
April	6-8	Thursday-Saturday 10:00 p.m.	Al Hijra New Year holiday
May	20	Saturday 10:00 p.m.	Spring Semester classes end
	21	Sunday	Study and examination period begins
	30	Tuesday	Study and examination period ends
June	10	Saturday 10:00 p.m.	Spring Semester ends

Islamic holidays are determined after sighting the moon. Thus, actual dates may not coincide with the dates in this calendar.

Study (S) and examination (E) period, Fall: Dec. 28 (S), 29 (E), 30 (E), Jan. 2 (E), 3 (S), 4 (E), 5 (E); Spring: May 21 (S), 22 (S), 23 (E), 24 (E), 27 (E), 28 (S), 29 (E), 30 (E).

In the event of loss of teaching days due to unscheduled closings, the semester (s) will be extended accordingly.

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
• General Information	558-5555	505-5200	public_affairs@aus.ac.ae
• Admissions & Registration	505-5008	558-5018	registration@aus.ac.ae
• Chancellor's Office	505-5205	558-5858	chancellor_office@aus.ac.ae
• Vice Chancellor's Office	505-5208	505-5150	vcaa@aus.ac.ae
• Public Affairs	505-5207	505-5200	public_affairs@aus.ac.ae
• College of Arts & Sciences	505-5410	558-5067	docas@aus.ac.ae
• School of Architecture & Design	505-5825	505-5800	docad@aus.ac.ae
• School of Business & Management	505-5303	558-5065	management@aus.ac.ae
• School of Engineering	505-5948	505-5979	dosoe@aus.ac.ae
• Continuing Education Center (CEC)	505-5023	505-5020	edu_center@aus.ac.ae
• Student Affairs	505-5165	558-5024	stud_affairs@aus.ac.ae
• Student Accounts	505-5233	505-5190	finance@aus.ac.ae
• Human Resources	505-5231	505-5190	hr@aus.ac.ae
• University Services	505-5172	558-5009	university_services@aus.ac.ae
• Comptroller	505-5184	505-5190	finance@aus.ac.ae
• Information Technology	505-5119	505-5120	it@aus.ac.ae
• Physical Plant	505-5100	505-5101	phy_plant@aus.ac.ae
• University Health Services	505-5691	505-5690	clinic@aus.ac.ae
• Purchasing & Supplies	505-5220	558-5009	purchase_supply@aus.ac.ae
• Library	505-5252	558-5008	library@aus.ac.ae

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Dr. Nouri Al Sagban, M.D., Director, University Health Services

Contents

Overview

- Introduction
- The University Campus
- On-Campus Services
  - University Health Center
  - Athletics and Recreation

Introduction

The American University of Sharjah (AUS) began its educational programs in the fall of 1997. It is licensed by the Ministry of Higher Education and Scientific Research of the UAE.

Architecturally distinguished facilities have been designed to accommodate 4,000 students. The language of instruction is English. 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 described in this catalog.

AUS is committed to a vision of itself as an independent, coeducational institution on the American model, thoroughly grounded in Arab culture and serving the educational needs of the diverse populations of the region. It is also dedicated to the preservation of a physical environment free from pollution and degradation. Our graduates will possess a conscious sense of ecological responsibility.

AUS gives 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 integrates liberal studies and professional education to give its graduates both breadth and specialization. AUS gives its students access to the resources of art and poetry and religion accumulated by earlier generations in various civilizations as well as the latest skills and technologies of the information age.

Although 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 the large expatriate communities of diverse nationalities and religious beliefs. In that progressive spirit, 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, international academic community is both a means and an end in the mission of the university.

The university provides its students with a cultural and educational foundation for leadership in professional careers and service in an age of electronic communications, global economies, social pluralism and political interdependence. It also provides an educational environment in which students can realize their individual potential and prepare to pursue their aspirations. This mission will be achieved through a combination of traditional and innovative teaching methods.

The location of the University also serves its mission. Sharjah is situated strategically between the Far East and the West, between Africa and Asia. Today, as in ancient times, it 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 University Campus

The American University of Sharjah is situated in University City, a 375 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.

Situated between the western shore of the Arabian Gulf and the Gulf of Oman in the Arabian Sea, the Emirate of Sharjah has beautiful beaches on both shorelines. It also has a lovely and varied countryside.

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 possibly 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 as they could nowhere else in the region.

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

The center of the American University campus is comprised of eight 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 features modern conveniences accented by graceful Arab style domes and arches that connect the academic buildings on each side of the Academic Plaza. Off to the side of the Main Building is the complex of Engineering Buildings. 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 Director of Admissions and Registration (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 about 1000 seats facing a stage that features theatrical, dance, musical performances in addition to symposia and other public events. The building also houses two smaller lecture halls of 280 and 150 seats that feature similar activities. The Campus Bookstore and the University Post Office are located on the ground floor of the Main Building.

The Academic Buildings

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

The University Library

The AUS Library occupies approximately 1282 square meters on the third floor of the Main Building. The library's collection is growing steadily and is comprised primarily of English language materials to support the English language curriculum, with a small Arabic component. The library is student-oriented and provides group study rooms, open book stacks to facilitate easy access, quiet study areas, and computer access. An online catalog system called OLIB can be used to search for items the library owns. Students and faculty also have access to a number of web based periodical indexes and full text journals and magazines that they can

access from any computer on campus. The library has its own computer classroom where classes are taught on how to use computer resources and the Internet.

Language Resource Center

The English Language Resource Center is located in the Languages Building on the Academic Plaza. 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.

Computer Laboratories

Specialized labs are available for students of English language, business, engineering, computer engineering and for other areas of the arts and sciences. Throughout the academic year, a variety of training classes are offered to help members of the university community (students, faculty, staff and administration) use the computing resources. The AUS computer network uses fiber-optic cables interconnecting the whole campus, including the residence halls and faculty housing.

The Office of Information Technology (IT) serves the computer related administrative, instructional and research needs of students, faculty and administrators. Assistance is provided for personal computer resources and for computer labs in several buildings around the campus. IT maintains a campus-wide network and 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 labs are equipped with all the standard equipment and the latest electronic technology equipment. Civil, electrical and mechanical engineering laboratories and workshops, located in the Engineering Buildings near the Academic Plaza, are also supplied with modern equipment to complement the high quality curricula designed for educating the engineers of the future.

Architecture and Design Digital Studios

Basic computer instruction takes place in digital classrooms. Second year students have one to one access to their personal workstations in digital studios. Multimedia, video and sound equipment is featured in the Advanced Digital Laboratory. The School of Architecture and Design uses the Macintosh operating system.

On-Campus Services

Campus Bookstore

Located on the ground floor of the Main Building, the Campus Bookstore carries all required textbooks, various other categories of books, art supplies, stationery and notebooks, gifts and many other items of use to students.

Dining Services

The university campus houses a student dining room and a coffee shop located behind the School of Architecture Building on the main Academic Plaza. Various meal plans are in the process of being developed. Some residence halls are equipped with vending machines of various snacks and beverage products. Most residence halls are equipped with kitchenettes including a refrigerator and hot plates.

Transportation and Parking

Parking lots are provided on university grounds for faculty, staff and students free of charge. Vehicles must be registered with the Business Services Office and must display a valid parking sticker permit. Visitor parking is also available in the University Parking Lots.

University Post Office and Mail Service

All mail coming to university offices and to those residing on campus arrives at:

P.O. Box 26666, Sharjah, UAE

Mail is distributed by the University Post Office and is delivered to all administrative offices at their respective locations. The post office also maintains individual post office boxes for the university community.

Student Accounts

Following their admission to the university, students handle all financial transactions, including the payment of their tuition and any other fees, through the Office of Student Accounts.

Financial Aid

There are three types of financial aid available to students. The first is for UAE nationals sponsored by governmental agencies and covers tuition and residence hall fees. The second is open to students of any nationality in the form of scholarships awarded on the basis of high scholastic achievement and financial need. In addition, students may be able to aid themselves financially through employment in university programs.

University Health Center (UHC)

The University Health Center (UHC) provides 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 happy and safe place to study, work and live.

Health Service Facilities

- Health care for students, faculty, administrative staff and dependents, including 24-hour care for students living in the dormitories and other campus residents
- Preventive care, vaccinations and immunizations
- For emergency care an ambulance is provided
- Follow-up treatment with day care, observation and referral to specialists
- Confidential and voluntary counseling and psychotheraphy for a wide range of emotional and psychological disorders
- Pre-registration medical check-ups for students
- Pre-employment check-ups for faculty and administrative staff

- Medical check-ups for visa purposes in co-operation with the Ministry of Health
- Advice and assistance in dealing with medical insurance coverage
- Oversees safety in university laboratories, sports facilities and dormitories
- Hygienic oversight of the cafeteria

The AUS Clinic

The clinic is staffed with highly qualified medical staff, 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

The UHC, being part of an educational institution, 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 & CPR courses
- Seminars on hazardous habits - drugs, smoking
- Newsletter on health related issues

Athletics and Recreation

The American University of Sharjah has a Sports Complex housing an olympic-size swimming pool, a health fitness center and various athletic courts including basketball, volleyball, tennis and squash. Athletic fields, basketball, volleyball and tennis courts are also located on the outer ring of the campus in addition to a new football field. The university has a leisure center with exercise and fitness equipment, a swimming pool and a children's playground in the housing complex for faculty. The university is establishing an intramural sports program that will be an exciting complement to a student's academic, social and cultural education. Involvement in intramural sports activity is a wonderful opportunity for students to make new acquaintances, develop new friendships and enjoy the benefits of physical activity and exercise.

Index of Course Descriptions by Field

Course Descriptions

Accounting

ACC 201 Fundamentals of Financial Accounting (3-0-3); every semester. An introduction to 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 (freshman) standing.

ACC 202 Fundamentals of Managerial Accounting (3-0-3); every semester. An introduction to the principles and concepts underlying managerial accounting. Course includes an introduction to management accounting information and cost accounting. Prerequisite: first year (freshman) standing.

ACC 301 Intermediate Financial Accounting I (3-0-3); every semester. 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 and FIN 201.

ACC 302 Intermediate Financial Accounting II (3-0-3); annually. 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); annually. Uses of accounting data for planning control and decision-making. Topics include budgets and cost concepts, techniques and behavior. Prerequisite: ACC 202 and FIN 201.

ACC 304 Auditing (3-0-3); annually. 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 303.

ACC 401 Advanced Financial Accounting (3-0-3); annually. Theory and practices of accounting for partnerships, business combinations and consolidated financial statements. Advanced topics in financial accounting. Prerequisite: ACC 302 and ACC 303.

Arabic Language

ARA 100 Arabic as a Second Language (I) (3-0-3); This course 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

ARA 103 Composition for Native Speakers of Arabic (3-0-3); every semester. This is a practical language-based class that aims to develop the writing skills of the native speaker of Arabic. The course will develop themes such as letter writing and also give attention to the development of personal style. An additional element to the course will be a historical look at styles of composition in Arabic.

ARA200 Arabic as a Second Language(II) (3-0-3); This is essentially an extension of course ARA 100 designed to develop further the student's knowledge and proficiency in Modern Arabic. The course materials will be taken from A Textbook for Beginning Arabic by Mahmoud Al Batal, et al. As with the previous course this one will also be video-driven. Prerequisite: equivalent of approximately 60 – 70 classroom hours of Arabic.

ARA 208 Selected Texts for Translation (I) (3-0-3);This course focuses on translation of a range of texts on such themes as science and the environment, business and economics, law, and current affairs. There will also be opportunities for each student to present a short talk on specific translation problems of a set of texts.

ARA 209 Arabic Morphology and Syntax (3-0-3); annually. The aim of this course is to survey Arabic morphology (sarf) and grammar (nahw). It includes two major activities which go hand in hand: studying and analyzing a basic (preferably ancient) text on morphology and grammar and applying this theoretical knowledge to chosen literary texts through the functional study of words and sentences.

ARA 210 Arabic Philology (3-0-3); annually. This course examines the contribution of the Arabs to the study of philology. It deals with major issues such as the definition of language, the phonology of Arabic, the tribal dialects, synonymy and antonymy, and linguistic borrowing. This classical survey is blended with the introduction of the basic principles and technical terms of modern linguistics.

ARA 211 Linguistic Issues in the Neoclassical Period (3-0-3); annually. In addition to looking in some depth at the prevalent linguistic issues of the period ca. 1850-1918, this course will also assess the role of some of the key figures involved in the intense academic debate via the literary journals of the time. It will also focus on the extent to which some of the literature of this era reflected the intellectual activities of scholars of the classical period.

ARA 212 Introduction to Arabic Sociolinguistics (3-0-3); annually. This course examines linguistic variation as it is reflected in the various Arabic dialects across the Arab World as well as within regions, and in many cases, within the same country. It emphasizes topics such as diglossia, bilingualism, linguistic purism, code-switching, language in education and language ethnicity.

ARA 300 Arabic as a Second Language (III) (3-0-3); every semester. This course builds on the earlier Arabic courses using more advanced materials from Mahmoud Al Batal's A Textbook for Beginning Arabic. Video materials will be used as the main focus for this course which builds on grammatical structures and conversational skills practised in earlier courses. Prerequisite: equivalent of approximately 125-150 classroom hours of Arabic. This course may also appeal to students who speak a native dialect of Arabic but who have not studied much written Arabic, or those who require fresh exposure to the written language.

ARA 307 Selected Texts for Translation II (3-0-3); annually. This course examines similar texts to those of ARA 208 but of a more complex nature.

ARA 308 Introduction to Stylistics and Metrics (3-0-3); annually. 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, rather than the traditional study of isolated examples. In metrics, the basic principles of the taf'ilat and their variations are introduced and applied to selected examples.

ARA 309 Arabic Lexicography (3-0-3); annually. In this course, an assessment will be made of the contributions to lexicography by Islamic scholars in the medieval period. It starts with the linguistic activity of the second century A.H. which resulted in several thematic books prior to the first dictionary. It

then examines the theoretical foundations set by Al Khalil bin Ahmad in Kitab Al 'Ayn and surveys the major lexicons up to Taj Al 'Arus. Beyond this, it will look at the underlying objectives of such a rich lexicographical tradition within the cultural framework of Islam.

ARA 310 The Development of the Arabic Language (3-0-3); annually. The main emphasis of this course will be on the modern language. It will assess the main principles of language change in Arabic during the past century or more, and will look at the role of the language academies in accommodating these changes. Particular attention will be given to the language of the media, in addition to general theories of language change.

ARA 311 Seminar on Arabic Language (3-0-3); annually. The topic and the instructor of the seminar may vary from year to year depending on staff interests. A range of different aspects of the Arabic language may be chosen. Selected topics will then be read in-depth outside of the classroom and discussed critically in class. Prerequisite: normally an average of 75 or above in the major.

ARA 407 Advanced Studies on Arabic Grammar (3-0-3); annually. This course examines in-depth the syntax and idiom of Modern Standard Arabic. Emphasis will be placed on the study of rules of sentence formation in Arabic as well as the patterns of coordination, complementation, predication and modification.

ARA 408 The Arabic Language and Modern Linguistics (3-0-3); annually. 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.

ARA 409 Luminaries in the History of the Arabic Language (3-0-3); annually. This rather unusual course will examine the contribution made by key individuals to the development of the Arabic language throughout the past 1200 years. It will assess their influence on its development, and also their own position within the intellectual strata of Islamic society, including the social role of the grammarian in medieval society.

ARA 410 Tutorial on the Arabic Language (3-6); annually. This course is offered on demand. The instructor and the student agree on the topic and the requirements of the course. Prerequisite: normally an average of 75 or above in the major.

ARA 411 Research Seminar on the Arabic Language (3-0-3); annually. In this course, students will be trained in research methodology through a series of theoretical and practical sessions, culminating in each student submitting an independent paper on research principles under supervision from the instructor. Detailed attention will be given to research methods, including the use of biographical dictionaries and encyclopedic works, followed by the preparation of the research paper. Students may not enroll for this course and ARA 405. Prerequisite: normally an average of 75 or above in the major.

ARA 412 Special Subject on the Arabic Language (3-0-3); annually. On a subject agreed by the supervisor the student will carry out independent research and submit a thesis of approximately 10,000 words on that subject. Unlike ARA 411, this course will give the student an option to write on a subject of his or her choice using primary and secondary sources. Prerequisite: normally an average of 75 or above in the major.

Arabic Literature

ARA 101 and 102 Readings in Arabic Heritage (3-0-3); every semester. 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); annually. 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); annually. This is a very intensive and wide-ranging survey course designed to illustrate to students from different backgrounds 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); annually. This course 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); annually. This course 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); annually. The course 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); annually. In this course, the renaissance of Arabic prose, from the nineteenth century to the present is surveyed. 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); annually. This course will look at the emergence of Arabic drama in the nineteenth century until the present day. It will also assess 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); annually. 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 302 Classical Arabic Prose from the Fourth to Seventh Century A.H. (3-0-3); annually. This course focuses on 'artistic prose' particularly the epistolary genre that formed the basis of most Arabic

prose writing during this period, especially during the fourth century A.H. It will look at the style of specific writers such as Al Sahib Ibn Al Abbad, Al Sabi' and Al Khwarizmi, and also at aspects of literary criticism as found in the works of scholars such as Ibn Al Athir. The social role of the secretary 'katib' will also be examined, as will the style of the 'maqamat' literature through the writings of the famous Al Hamadhani and Al Hariri.

ARA 303 Andalusian Literature (3-0-3); annually. This course takes a unique look at the literary output of scholars from Al Andalus in three main areas: poetry, prose and grammar. It assesses the rich collection of Andalusian literature by focusing on the muwashshah and zajal poetry, artistic prose (insha'), and the grammatical contribution of scholars such as Ibn Mada' Al Qurtabi and Abu Hayyan Al Gharnati.

ARA 304 Modern Arabic Poetry (3-0-3); annually. In this course, the renaissance of Arabic poetry from the nineteenth century to the present is surveyed, 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); annually. 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 306 Seminar on Arabic Literature (3-0-3); annually. The topic and the instructor of the seminar may vary from year to year depending on staff interests. A range of different aspects of Arabic literature may be chosen. Selected topics will then be read in-depth outside the classroom and discussed critically in class. Prerequisite: normally an average of 75 or above in the major.

ARA 401 Literary Criticism from the Arab Perspective (3-0-3); annually. 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); annually. This course is 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); annually. The purpose of this course is to familiarize students with the Sufi literature and Sufi traditions and doctrines.

ARA 404 Tutorial on Arabic Literature (3-6 credit hours); annually. This course is offered on demand. The instructor and the student agree on the topic and requirements of the course. Prerequisite: normally an average of 75 or above in the major.

ARA 405 Research Seminar on Arabic Literature (3-0-3); annually. Students may not enroll for this course and ARA 411. This course is similiar to ARA 411 but places a special emphasis on literary works. Prerequisite: normally an average of 75 or above in the major.

ARA 406 Special Subject on Arabic Literature (3-0-3); annually. This course is similar to ARA 412 but places a special emphasis on literature. Prerequisite: normally an average of 75 or above in the major.

Architecture

Courses listed below in the Program of Architecture are described in several degrees of depth: full descriptions are presented only for courses to be taught during the current academic year (1999-2000). 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 Architecture Design Studio I (10.5-0-5); annually. Studio-based investigation of the fundamentals of making architectural form with emphasis on design inquiry, exploration, and process. Concentrates on classic instances of form sources in architectural design: function, experience, structure, construction, and environment. Digital media are integral to the studio, and students receive instruction in software appropriate for design purposes. Prerequisites: DES 100, DES 112, DES 122, DES 132.

ARC 202 Architecture Design Studio II (10.5-0-5); annually. 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); annually. 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 lecture, seminar, field visits, and readings. Assignments involve written and graphic communication. Prerequisite: DES 100 and DES 112.

ARC 215 Descriptive Geometry (4-0-3); annually. 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 lecture and supervised applications. Prerequisites: DES 100, DES 112 or consent of the instructor.

ARC 220 Modern Foundations of Art and Architecture (3-0-3); annually. 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. Content closely coordinated with ARC 201. Prerequisite: DES 122.

ARC 222 Traditional Architecture of the Region (3-0-3); annually. Prerequisite: DES 122.

ARC 222F Field Research in Traditional Architecture (1-6-3); annually. Prerequisite: ARC 222.

ARC 231 Survey of Materials and Practices in Construction (2-3-3); annually. 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 (selected historical and contemporary instances) to demonstrate both the continuing evolution of the building process, and the timeless nature of the issues involved. Course format includes lecture and supervised applications.

ARC 240/CVE 272 Structural Principles: Statics and Strength of Materials (2-3-3); annually. 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); annually. 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. Prerequisites: ARC 202, ARC 220, and PHY 104.

ARC 302 Architectural Design Studio IV (12-0-6); annually. 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 Advanced Modeling and Rendering (4-0-3); annually. Prerequisites: DES 100, ARC 215, or consent of the instructor.

ARC 321 Seminar: Ideas in Architecture (3-0-3); annually. 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. Class includes lectures, discussions, readings, student presentations, and student projects. Prerequisite: ARC 220.

ARC 322 Seminar: Global Issues in Architecture (3-0-3); annually. 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. Extensive reading, research, discussion, and writing. Prerequisite: ARC 321.

ARC 330 Materials and Practices of Concrete Construction (2-3-3); annually. 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 final finishes. Lecture/presentation with extensive use of digital media and field visits. Prerequisite: ARC 231.

ARC 341/CVE 371 Structural Analysis: Conceiving Forces in Buildings (2-3-3); annually. 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/CVE 272.

ARC 342/CVE 372 Structural Design: Concrete, Steel, and Wood (2-3-3); annually. 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/CVE 371.

ARC 351 Environmental Energies and Building Form (2-3-3); annually. 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 370 Professional Training I (0-0-0); annually. Minimum of six weeks of on-job experience with an approved professional firm.

ARC 371 Computer Aided Design (4-0-3); Prerequisite: DES 100.

ARC 401 Architectural Design Studio V (12-0-6); annually. 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. Semester-long problem. Prerequisites: ARC 302, ARC 330, ARC 341/CVE 371, ARC 351 and ARC 370.

ARC 402 Architectural Design Studio VI (12-0-6); annually. 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. However, students are given increased freedom and responsibilities in determining the scope of their work and their methods of exploration. Semester-long problem. Prerequisite: ARC 401.

ARC 410 Furniture Design (4-0-3); The topics in this course explore the basic function and design of furniture and topics of human factors, i.e. anthropomorphic and ergonomics related to furniture design. Each student will develop a unique project of his/her own and will define, research, design and draw it, select material for it, build a study model and fabricate the final furniture piece. Prerequisite: ARC 202 or IDE 202.

ARC 422 Contemporary Architecture in Arid Regions (3-0-3).

ARC 423 Islamic Art and Architecture (3-0-3).

ARC 424 Evolution of Cities (3-0-3).

ARC 431 Prefabrication and Systems Building (2-3-3); annually. In-depth examination of the principles, practices, and presently available technologies related to the use of prefabricated elements in a systems approach to building. Includes prefabricated subsystems in standard contemporary construction procedures, such as steel frame construction and various roles of reinforced concrete. Emphasis on considerations of cost, available skills and materials, and the expressive characteristics of built form. Prerequisite: ARC 341/CVE 371.

ARC 440/CVE 480 Advanced Topics in Structural Design (3-0-3); Advanced topics in structural design for Architecture. Prerequisite: ARC 342/CVE 372.

\ARC 451 Lighting and Acoustics (2-3-3); This course focuses on the basic concepts of acoustics and illumination. It explains and demonstrates both the qualitative and quantitative aspects of sound and light in the built environment. The aim is to obtain an awareness and understanding of overall design decisions with respect to the nature of sound and light within the built environment. The first part of the course will address the architecture of sound, its terminology, process of transmission and practical applications. The second part of the course will focus on the architecture of light, its nature, sources and characteristics, calculation and application. Each part will address aspects of both the art and science of each discipline. Computer simulation and modeling will also be used as valuable research tools in this course. Prerequisite: ARC 202 or IDE 202, PHY 104.

ARC 452 Environmental Control Systems in Architecture (2-3-3); annually. An integrated presentation of environmental control systems (lighting, heating, ventilating, air conditioning, sanitary, and acoustics) as they influence one another, and as they constrain building planning and morphology.

ARC 460/ECO 460 Professional Practice I: Economics and Management (3-0-3); annually. Introduction to the principles and practices of the business and commercial aspects of professional practice in a global economy. Includes office management practices, basic business economics, accounting, and the development of sound business plans to assure profitability, and encourage growth. Taught in Department of Economics. Prerequisite: junior standing.

ARC 461 Site Planning (2-3-3).

ARC 462 Introduction to Landscape Architecture (2-3-3).

ARC 470 Professional Training II (0-0-0); annually. Minimum of eight weeks of on-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: ARC 370.

ARC 471 Advanced Computer Aided Design (4-0-3); Prerequisite: ARC 371.

ARC 472 Contract Documents (1-6-3); Prerequisite: ARC 302.

ARC 480 Special Topics in Architecture (3-0-3); Prerequisite: ARC 302.

ARC 490 Special Projects in Architecture (4-0-3); Prerequisite: ARC 302.

ARC 500 Final Project Research (2-10-5); annually. 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. Prerequisites: ARC 402, ARC 431, ARC 342/CVE 372, ARC 452 and ARC 470.

ARC 502 Final Project Studio (2-14-8); annually. 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. Prerequisites: ARC 500, ARC 510.

ARC 510 Topical Practicum in Architectural Design (10.5-0-5); annually. 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.

ARC 520 Architectural Criticism (3-0-3). Prerequisite: ARC 321.

ARC 530 Case Studies in Building Construction (2-3-3). Prerequisite: ARC 431.

ARC/CVE 561 Professional Practice II: Construction Management (3-0-3); annually. 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. Prerequisites: ARC 431, ARC 452 and ARC 460.

ARC 562 Professional Practice III: Building Law (3-0-3); annually. In-depth examination of the constraints imposed on the conduct of professional practice in Architecture by the current building laws 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).

ARC 580 Special Topics in Architecture (3-0-3); Prerequisite: ARC 402.

ARC 590 Special Projects in Architecture (4-0-3);Prerequisite: ARC 402.

Business Information Systems

BIS 201 Business Information Systems (3-0-3); every semester. This is a computer applications to business course. It covers spreadsheet applications using MS Excel and database applications using MS Access. Advanced features of Excel will be covered including linking, goal seek, what-if and sensitivity analysis, solver, etc. Students will be introduced to developing Macros in Visual Basic. The data base component will address the creation of tables, retrieving and presenting data, querying, working with forms, linking, etc. Students will be working on case assignments throughout the semester.

Business Legal Issues

BLW 301 Legal Issues in Business (3-0-3); annually. Examines business legal issues such as: legal concepts, philosophy, and functions of court sys-

tems. Survey of contracts, sales, agents, legal forms of business and the regulation of businesses. Prerequisite: third year (junior) standing.

Chemical Engineering

CHE 201 Principles of Chemical Engineering I (1-3-2); Systems of units, unit conversion, dimensional consistency of equations, precision, accuracy, error, 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 202 Principles of Chemical Engineering II (1-3-2); Steady-state energy balances with and with 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 201.

CHE 204 Chemical Engineering Thermodynamics I (2-3-3); Terms & definitions, zero law of thermodynamics, first law of thermodynamics, second law of thermodynamics. reversibility, the absolute zero, Carnot cycle, entropy and free energy, the use of standard free energies, enthalpies, and entropies. Thermodynamic properties of fluids, diagrams and tables. Ideal gas mixture, ideal solution, and Raoult's law, perfect gas. Third law of thermodynamics, phases and solutions, phase equilibrium and other applications. Thermochemistry. Prerequisite: PHY 101.

CHE 207 Fluid Flow (2-3-3); Basic equations of fluid flow, flow of fluids in pipes, flow and pressure measurements, pumping of fluids. Viscosity and the mechanism of momentum transfer. Newtonian and non-Newtonian fluids. Viscosity of gases and liquids. Velocity distributions in laminar flow, means of velocity measurement. Shell momentum balances. Common one-dimensional flow problems. The equations of change for isothermal systems. Dimensional analysis. Multi-dimensional steady state and two-dimensional potential flow. Boundary layer theory. Prerequisite: MTH 205.

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, scale-up to pilot units. Prerequisite: NGN111.

CHE 301 Heat Transfer (2-3-3);. Thermal conductivity and the mechanism of energy transport. Temperature distributions in solids and in laminar flow. The equations of change for non-isothermal systems. The equations of change for multi-component systems. Design procedures and details for counter-flow double-pipe heat exchangers, shell and tube exchangers, heat exchanger network systems, evaporators, vaporizers and re-boilers. Furnace calculation. Prerequisite: CHE 204.

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 and equilibrium constants for selected gas and liquid phase reactions. Prerequisite: CHE 204.

CHE 306 Chemical Processes (2-0-2); Production of sulfuric, hydrochloric and nitric acids. ammonia and phosphates production. Fertilizers. Cement production. Vegetable oils, Soaps and Detergents. Food production. Paints and coatings. Gas production. Electro-plating. Prerequisite: CHM 222.

CHE 321 Chemical Reaction Engineering (2-3-3); Temperature dependence of reaction rates. Temperature effects in batch reactors. Basic concepts in reactor design and ideal reactor models. Steady state continuous stirred tank reactors in series. Non-isothermal operation of flow reactors (including the adiabatic case) with some computer calculations involving heat transfer. Residence-time distributions. Catalysis, catalyst effectiveness factors. Prerequisite: CHM 331.

CHE 322 Unit Operations I (2-3-3); Vapor-liquid equilibrium, equilibrium stage operations. Binary distillation, flash distillation, continuous distillation with reflux, rectification in packed towers, batch distillation, multi-component distillation, steam distillation, azerotropic and extractive distillation. Evaporation, types of evaporators, single and multi-effect evaporators. Liquid extraction, leaching, and super-critical fluid extraction. Prerequisite: CHE 202.

CHE 322L Unit Operations I Laboratory (0-3-1); Practical experiments to illustrate the theoretical fundamentals of the topics given in course CHE 322.

CHE 323 Unit Operations II (2-3-3); Diffusivity and the mechanism of mass transport. Mass transfer coefficients, film theory, penetration theory, mass transfer through known areas, and the two-film theory, stage efficiencies.. Interface mass transfer. Continuous and stage-wise two-phases mass transfers. Gas absorption, adsorption processes, membrane separation processes and crystallization. Equipment design procedures. Prerequisite: CHE 322.

CHE 323L Unit Operations II Laboratory (0-3-1); Practical experiments to illustrate the theoretical fundamentals of the topics given in course CHE 323.

CHE 324 Process Design I (1-3-2); Introduction to design, flow sheeting, process flow diagram, mass and energy flow diagram. Piping diagram, design information and data. Design of equipment, plant layout and site location. Case studies involving applications of chemical engineering economic principles to the design of a selected chemical manufacturing process. Prerequisite: CHE 202.

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.

CHE 411 Unit Operations III (2-0-2); Particulate solids, size reduction of solids (principles and equipment), sedimentation, fluidization, filtration, cake filters, principles of cake filtration, clarifying filters, crossflow filtration, centrifuge, gas cleaning, cyclones. Humidification theory and calculation, water cooling and drying, principles of drying, and drying equipment. Prerequisite: CHE 207.

CHE 411L Unit Operations III Laboratory (0-3-1); Practical experiments to illustrate the theoretical fundamentals of the topics given in course CHE 411.

CHE 421 Process Control (2-3-3); General review of Laplace transforms. Linear open-loop systems. First order systems alone and in series. Higher order systems. Linear closed-loop systems. Controllers and final control elements. Closed transfer functions. Transient response. Stability. Development of mathematical models of chemical engineering systems. Analog and digital simulation. Numerical methods for digital simulation of chemical engineering processes. Steady-state simulation programs. Prerequisite: MTH 205.

CHE 430 Computer Methods in Chemical Engineering (1-3-2); Interpolation and approximation formula. Numerical integration with equally spaced base points. Smoothing and numerical differentiation techniques. Solution of non-linear algebraic equations. Solution of single and simultaneous ordinary differential equations. Initial and boundary value problems. Error propagation, stability and convergence. Prerequisite MTH 205.

CHE 432 Process Design II (1-3-2); Detailed design procedure for plate towers for distillation, design of liquid mixing system, design of gravity settlers. General design considerations, such as

materials of construction, site location, plant layout and safety considerations. CHE 322.

CHE 433 Instrumental Analysis (2-3-3); Introduction to the types of analytical methods, uncertainties in instrumental measurements and sensitivities and detection limits for instruments. An introduction to electro-analytical chemistry. Potentiometric methods. Coulometric methods, voltammetry and polarography, conductometric methods. An introduction to chromatographic separations. Gas chromatography. Prerequisite CHM 222.

CHE 434 Petroleum Refining Processes (2-3-3); Origin of crude oil, exploration, drilling and production, crude oil distillation. Cracking processes. Catalytic reforming processes. Other conversion processes and treatment methods. Material and energy balances and design of major equipment. Prerequisite CHE 322.

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); Petrochemical industry, raw materials, aliphatic and aromatic petrochemicals. Petrochemicals from methane, petrochemicals from normal paraffins, production of olefins, petrochemicals from aromatics. Polymerization processes, synthetic rubber, fibers and protein. Prerequisite CHM 222.

CHE 437 Gas Purification (2-3-3); Refinery gas, liquefied petroleum gases, 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 323.

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 323.

CHE 439 Wastewater Treatment (2-3-3); Physical properties of water, uses of water, wastewater, wastewater treatment by physical processes, biological treatment systems, advanced wastewater treatment, industrial wastewater treatment, effluent disposal and reuse and, treatment and disposal of sludge. Prerequisite CHE 306.

CHE 440 Desalination (2-3-3); General principles of desalination, sea water chemistry, scale format and prevention, multi-effect boiling. Submerged tube multi-effect boiling, multi-stage flash desalination. Vapor compression desalination. Dual-purpose power-water desalination co-generation plants. Prerequisite CHE 204.

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. The physical and chemical properties of polymers. Prerequisite CHM 222.

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/CHE 499 Design Project I & II (0-6-2); An in-depth study of a project of defined chemical engineering significance that is based on laboratory and computer oriented investigations. Students work in close accord with a faculty member on a project of mutual interest. Written reports and oral presentations are required for evaluation. These courses allow student an opportunity to demonstrate the ability to work with minimum supervision. Prerequisite CHE 306.

Chemistry

CHM 001 Preparatory Chemistry (3-0-0); annually. Topics include: activities of science, nature of matter, elements, compounds, chemical symbols and formulas, the mole, chemical reactions, stoichiometry, gases, liquids and solutions, acids and bases, the atomic model, chemical bonding, nuclear chemistry.

CHM 101 General Chemistry I (3-3-4); every semester. An introductory course covering the fundamental chemical principles, concepts and laws. Topics include reaction stoichiometry, types of chemical reactions, solution stoichiometry, gas laws, kinetic theory of gases, themochemistry, atomic structure and periodicity, the Bohr model, Lewis structures, ionic and covalent bonding, properties of gas, liquid and solid phases and their associated phase diagrams. Laboratory experiments illustrate principles discussed in the course. Prerequisite: CHM 001 or placement.

CHM 102 M General Chemistry II (3-3-4); every semester. Continuation of General Chemistry I. This course investigates the properties of solutions including colligative and chemical properties. Acid-base and complex ion equilibria, laws of thermodynamics, enthalpy and free energy, electrochemistry, 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); every semester. This course introduces the student to the extraordinary chemistry of ordinary things, the magic of chemistry and the building blocks of chemistry. Topics include secrets 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, DNA finger printing, global warming, acid rain, air and water pollution.

CHM 215 Organic Chemistry I (3-0-3) annually. This is the first of two intermediate courses in organic chemistry. It covers the chemistry of hydrocarbons and halogenated hydrocarbons. Topics include alkanes, alkenes, alkynes, aromatic hydrocarbons and alkyl halides. The following scheme is generally followed: nomenclature, origin, synthesis and reactions. Stereochemistry is included wherever appropriate. Particular emphasis is placed on synthesis and mechanisms. Prerequisite: CHM 102.

CHM 216 Organic Chemistry II (3-0-3); annually. This is the second of two intermediate courses in organic chemistry; it covers the organic functional groups. Emphasis is on the mechanisms for the preparation and reactions of these groups. Topics covered include spectroscopy (IR, UV and NMR), alcohols, ethers, epoxides, aldehydes, ketones, carboxylic acids and amines. Prerequisite: CHM 215 or CHM 221.

CHM 216L (0-3-1); annually. Experiments in purification, separation and synthesis of organic compounds. Prerequisite: CHM 221 or Corequisite: CHM 215 and CHM 216.

CHM 231 Physical Chemistry I (3-0-3); annually. This course investigates in greater 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.

CHM 331 Physical Chemistry II (3-0-3); annually. The course covers kinetics, electrochemistry, surface chemistry and transport properties. In kinetics emphasis is on the theory of reaction rates and methods of handling chemical kinetic data. The electrochemical section of the course examines the conventions, underlying theory, and practical applications of electrochemical cells. Prerequisite: CHM 231 or equivalent.

CHM 335 Physical Chemistry Laboratory (0-6-2); annually. This is an advanced laboratory course in Physical Chemistry. 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. Prerequisite: CHM 331.

CHM 350 Environmental Chemistry (3-0-3); annually. The course investigates the interaction between natural systems and human activity. Topics include biogeochemical cycles, aquatic chemistry, water pollution and treatment, atmospheric chemistry and air pollutants, photochemical smog, hazardous wastes, toxicological chemistry. It also includes issues of the ozone layer, global warming, acid rain, nuclear waste disposal and treatment of oil slicks. Prerequisite: CHM 102.

Civil Engineering

CVE 201 Civil Engineering Lab I (0-3-1); Techniques of engineering measurements and laboratory experimentation and recording. Calibration principles. Int. 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: second year (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. Int. to rock mechanics. Physical and engineering properties of rocks. Laboratory work on basic geologic identification and mapping techniques. Field trips and applications projects. Prerequisite: second year (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 Structural Analysis I (2-3-3); Structural Engineering. 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. Prerequisite: CVE 201 and third year (junior) standing.

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. Prerequisite: CVE 201 and third year (junior) standing.

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. Prerequisite: CVE 301, CVE 302.

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 approval of instructor.

CVE 331 Introduction to Geotechnical Engineering (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 303, CVE 331.

CVE 341 Water Engineering I (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 Environmental Engineering I (2-3-3); annually. 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, CVE 231, CVE 341.

CVE 361 Transportation Engineering (2-3-3); annually. 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. Int. to traffic analysis and transportation planning. Prerequisite: NGN 241, CVE 221, CVE 241, CVE 302, and CVE 331.

CVE 371/ARC 341 Structural Analysis: Conceiving Forces in Buildings (2-3-3); annually. 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); annually. 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); annually. 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 presenta-

tion. Experiments in water surface run off and subsurface infiltration and flow, experiments in closed conduit, open channel tests. Prerequisite: CVE 201, CVE 341 and third year (junior) standing.

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, in-elastic 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 approval 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 432 Structural Analysis II (2-3-3); Matrix structural analysis of: beams, frames, and trusses. Energy principles and virtual work method. Analysis of multi-story buildings. Structural stability. Computer-aided analysis of structures. Introduction to plastic analysis, structural dynamics and the finite element method. Use of an existing general purpose finite element analysis program. Prerequisite: CVE 301.

CVE 433 Selected Topics in Mechanics and Structural Analysis (2-3-3); Selected topics from the following: analysis of space structures, soil-structure interaction, elastic-plastic analysis, and anlysis of structures subjected to cyclic and dynamic loading. Applied elasticity. Failue theories and behavior models; plasticity; in-elastic deformations; Elastic and elasto-plastic stress-strain relations; and fracture mechanics. Buckling analysis of plates, shells, rings and arches. Analysis and design of beams and plates on elastic "Winkler" foundations. Prerequisite: CVE 431 and CVE 432.

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 matrerials and their use in innovative design solutions. Prerequisite: CVE 221 and CVE 302.

CVE 439 Advanced Mechanics of Materials (2-3-3); Three dimensional stress-strain relations, stress function, asymmetrical bending of homogenous and composite sections, shear flow and shear center, torsion of noncircular sections and multicell sections; curved beams and beams on elastic foundation; energy methods and theories of failure. Prerequisite: NGN 231.

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 andslope 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, drived 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 443 Selected Topics in Geotechnical Engineering (2-3-3); A selection of topics among the following: (i) soil stabilization using conventional stabilizers (cement, lime, asphalt, and chemicals; (ii) soil improvement methods using compaction, vibroprobes, preloading, vertical sand drains, soil reinforcement and grouting; (iii)properties and remediations of special soils such as: expansive soils, collapsible soils, sensitive organic soils, and sabkha soils; (iv) earthquake geotechnical engineering and soil dynamics including: wave propagation in soils and rocks, soil dynamic properties, seismic hazard zonation, site response analysis, liquefaction evaluation, dynamic stability of slopes and design of foundations and retaining structures for earthquake loading; (v) Rock slope engineering; (vi) Tunneling and underground excavation engineering, (vii) Steady and transient flow in porous media, applications in confined and unconfined seepage, and (viii) Yielding and failure of soils, plasticity theory and limit analyses, Cam clay models and critical state theory of soil behavior. Prerequisite: CVE 303, CVE 321 and CVE 331.

CVE 444 Rock Mechanics (2-3-3); Site investigation and subsurface exploration methods for rocks. Effect of geologic features on constructed facilities. Rock as an engineering material. Physical and engineering properties of rock. Classification, strength and theories of rock failure. Deformation in rock. Permeability of intact and rock masses. Stability of rock slopes. Design of foundations on rock, underground openings in rock, and rock slope cuts. Drilling and blasting in rock. Rock laboratory and field testing techniques. Course work includes laboratory assignments. Case studies. Prerequisite: NGN 223 and CVE 231.

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: CHE 102, NGN 241, 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. Prerequisite: CVE 441, or approval of instructor.

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 Coastal and Harbor Engineering I (2-3-3); Wave characteristics and transformation, wind generated waves, wave forces and concepts and theories of wave structure interaction. Water level fluctuations (tides). Planning and layout of port facilities. Coastal and ocean structures. Underwater systems. Naval architecture. Physical and mathematical fundamentals of ocean wave behavior. Design of selected coastal structures. Hydraulic considerations. Introduction to selected coastal engineering problems. Prerequisite: CVE 303, CVE 301 and CVE 341.

CVE 449 Coastal and Harbor Engineering II (2-3-3); Dynamics of offshore structures, prediction of loads due to wind, current and waves. Structural dynamics and design of ocean structures. Vibration of submerged structures. Mechanics of wave motion, wave refraction, diffraction, and reflection. Wave forcasting. Planning of coastal engineering projects. Design of seawalls, breakwaters, fixed offshore installations and pipelines. Dredging. Int. to design of ocean engineering structures and facilities. Prerequisite: CVE 448.

CVE 450 Environmental Engineering II (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 451 Contracts and Specifications (3-0-3); Law of contracts; formation principles. Performance or breach of contract obligation. Termination of agreement; pre-qualification. Contract for construction and engineering services. Specifications. Professional liability; insurance and bonds. Arbitration of disputes. Prerequisite: fourth year (senior) standing.

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 303, CVE 341 and fourth year (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: fourth year (senior) standing.

CVE 457 Selected Topics in Transportation and Surveying Engineering (2-3-3); Selected topics among the following: urban transportation planning, transportation system management, airport site selection, airport design and operations, and highway safety design. Geodetic astronomy. Remote sensing, lunar and satellite laser ranging systems. Very Long Baseline Interferometry (VLBI). Global Positioning System (GPS). Geographic Information System (GPS). Prerequisite: CVE 241, CVE 361 and fourth year (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 361.

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. Modelling 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 631 and fourth year (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: fourth year (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, and 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 210, CVE 301, and CVE 361.

CVE 466 Water Engineering II (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. Int. to design of dams, reservoirs, spillways, urban storm-water drainage, and flood damage mitigationSea water intrusion in coastal aquifers. Water engineering design projects. Prerequisite: CVE 303 and 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. Int. to contracting; bidding and awarding; labor and equipment costing and productivity; job costs; project cost control; materials procurement. Introduction to project management. Financial management in the construction industry. Prerequisite: fourth year (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: fourth year (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; annually. 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: fourth year (senior) standing.

CVE/ARC 561 Professional Practice II: Construction Management (3-0-3); annually. 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. Prerequisites: ARC 431, ARC 452 and ARC 460.

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 applica-

tions 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. Boolean algebra. Combinational logic design. Logic minimization techniques. Sequential logic design. State minimization Techniques. Sequential circuit implementation. Introduction to computer design. Analog signals interfacing.

COE 221L Digital Systems Lab. (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. Prerequisites: MTH 205.

COE 331 Microprocessors and Computer Systems (3-0-3); Microprocessor characteristics and architecture. Microprocessor programming. Memory interface and address decoding. I/O interface and programmable peripheral interfaces. A/D and D/A conversion. Interfacing with analog systems. Serial and parallel interfacing. Hardware interrupts, basic interrupt interface and programmable interrupt controllers. Direct memory addressing, systems design, computer interfacing and programming. Prerequisite: COE 221.

COE 331L Microprocessors and Computer Systems Lab. (0-3-1); Prerequisite: 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; I/O management; deadlock avoidance; file system design. Security issues. Examples from commonly-used operating systems (e.g. Windows and UNIX). Prequisite: 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; defined types, stacks, queues; searching, hashing, sorting; recursion; procedure specifications, exceptions, testing, debugging. Prerequisite: COE 331.

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. Prerequisites: 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. Prerequiste: 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. Prerequisites: COE 331 and COE 351.

COE 498 Design Project I (0-6-2); An open-ended, in-depth design project of computer engineering significance that includes the design of a system, process or hardware component to achieve functional objectives, representative of problems in modern high-tech industry. Students work in close accord with one or more faculty members, preferably in a team environment. The project outcomes must demonstrate that students have attained the necessary level of competency for entry into the computer engineering profession. Prerequisite: Fourth year standing.

COE 499 Design Project II (0-9-3); Continuation of the work done in Design Project I. Prerequisite: COE 498.

Computer Science

CMP 101 N Computer Literacy and Information Access (0-3-1); every semester. This course introduces students to the use of computers. The hardware and system software of computers are described. Commonly-used software applications (word processing, spread sheets, databases, etc.) as well as communication (e-mail, World Wide Web, etc.) are thoroughly discussed. Students will have extensive hands-on training during supervised laboratory sessions.

CMP 102 Fortran Programming (3-1-3); annually. 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); annually. 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); annually. Design and analysis of programs in C. An introduction to computing using structured programming concepts. Prerequisite: CMP 101 or consent of the advisor.

CMP 106 PL/1 Programming (2-1-2); annually. Elementary and intermediate programming techniques in PL/1. Computer solution to numeric problems and non-numeric problems.

CMP 107 COBOL Programming (2-1-2); annually. Elementary and intermediate programming techniques in COBOL. Computer solution to business oriented problems.

CMP 110 Visual Basic (2-2-3); annually. The course 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. Prerequisite: CMP 101.

CMP 120 Introduction to Computer Science I (3-0-3); annually. Introduction to programming and program structure using C++ or Java. Fundamentals of object oriented programming. Working with objects and classes. Inheritance. Graphic programming. Event Handling. User interface components. The student is expected to complete several projects. Prerequisite: CMP 105 or equivalent.

CMP 220 Introduction to Computer Science II (3-0-3); annually. Advanced programming with Java / C++: This course is a continuation of the topics covered in CMP 120. The student is expected to complete several projects. Prerequisite: CMP 120.

CMP 213/MTH 213 Discrete Mathematics (3-0-3); annually. See MTH 213. Prerequisite: MTH 103.

CMP 232 Data Structures (3-0-3); annually. 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.

CMP 240 Introduction to Computer Systems (3-0-3); annually. Introduction to computer structure. Registers, machine instructions and formats; number and character representation; execution control and addressing techniques. Basic input-output programming; files; procedures, segmentation, and linkage, recursion and re-entrancy; floating-point and string operations. Symbolic and machine-level debugging. Prerequisite: COE 221.

CMP 310 Introduction to Operating Systems (3-0-3); annually. Study of supervisory programs. System services and file systems; CPU scheduling; memory management; virtual memory; disk scheduling. Deadlock characterization, prevention, and avoidance; concurrent processes; semaphores; critical sections; synchronization. Distributed systems and communication protocols. Prerequisite: CMP 120.

CMP 315 Computer Networks (3-0-3); annually. The theory and application of inter-computer communication. Local- and wide-area networks; data transmission and error correction; OSI and TCP/IP layering protocols; ethernet, token ring, token bus, and other network technologies; network topologies; the client-server model; bridges and multi-protocol routers; the internet. Applications include electronic funds transfer and distributed databases.

CMP 320 Database Systems (3-0-3); annually. 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); annually. Detailed study of two-dimensional graphics and introduction to issues from three-dimensional graphics. Graphics hardware and applications. Study of graphics primitives in two dimensions: lines, attributes, windowing, clipping, transformations. Overview of other topics: three-dimensional transformations, modeling, color science, rendering. Prerequisite: CMP 213.

CMP 324 File Processing (3-0-3); annually. External storage devices. Sequential, Indexed Sequential and Direct file organizations. Tree-structured, multilist, inverted, cellular multilist, and hybrid file organizations. File systems. External sorting and merging. The protection problem. Introduction to database systems. Prerequisite: CMP120.

CMP 330 Computer System Architecture (3-0-3); annually. Advanced study of the architecture of computer systems. Common 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; cache design; instruction pipelines, arithmetic pipelines, and their scheduling, RISC and CISC architectures, common multiprocessor architectures. Prerequisite: CMP 240.

CMP 334 Organization of Programming Languages (3-0-3); annually. 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, coroutines, 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); annually. An introduction to theoretical computer science. Topics include regular expression and finite state concepts; basic automata theory; formal grammars and languages; computability; Turing machines; elementary recursive function theory. Prerequisite: CMP 213.

CMP 337 Parallel Computing (3-0-3); annually. 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); annually. 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.

CMP 385 Professional and Ethical Issues in Computer Science (1-0-1); annually. Student presentations and discussions of case studies relating to computer ethics. (Participation in the computer science seminar series required). Prerequisite: third or fourth year (junior or senior) standing in computer science or permission of instructor.

CMP 410 Compiler Construction (3-0-3); annually. 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 scan, 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); annually. 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, MTH 104 and STA 201.

CMP 421 Image Processing (3-0-3); annually. 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); annually. Introduction to the types of problems and techniques in Artificial Intelligence. Problem-solving methods. Major structures used in Artificial Intelligence programs. Study of knowledge representation techniques such as predicate logic, nonmonotonic logic, and probabilistic reasoning. Examples of expert systems. Introduction to natural language understanding and various syntatic and semantic structures. Study learning as a form of problem-solving through problem decomposition and interaction among subparts. Study techniques relevant to expert systems. Introduction to computer understanding of images. Prerequisite: CMP 335.

CMP 425 Information Theory (3-0-3); annually. 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. Consent of the instructor.

CMP 434 Programming Languages (3-0-3); annually. 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); annually. 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); annually. 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); annually. 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); annually. 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: CMP105.

CMP 440 Software Engineering (3-0-3); annually. 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. Consent of the instructor.

CMP 450 Hypermedia Computing (3-0-3); annually. Hypermedia is the integration of text, graphics, animation, sound and video into a single computer application. This course gives students a broad understanding of the technical aspects of hypermedia application development as well as the conceptual issues that affect this technology. Each student develops an individual hypermedia project based on Hypercard on IBM computer. Prerequisite: Senior standing and permission of instructor.

CMP 460 Introduction to Simulation and Modeling (3-0-3); annually. 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); annually. 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 permission of instructor.

CMP 480 Topics in Computer Science (3-0-3); annually. Topics of current interest in computer science not covered in existing courses. May be repeated under a different subtitle. Prerequisite: Senior standing and permission of instructor.

CMP 490 Independent Study (variable credit: 1-6 credit hours); annually. Involves investigation under faculty supervision beyond what is offered in existing courses. Prerequisite: Overall GPA of at least 2.00, junior or senior standing, and consent of instructor.

CMP 495 Project in Computer Science (3-0-3); annually. Faculty supervised projects by students on special topics of current interest. Both oral and written presentation on the topics. Prerequisite: Senior standing and consent of instructor.

Cultural Studies

CSC 201 Western Cultural Studies I (3-0-3); every semester. This course 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.

CSC 202 Western Cultural Studies II (3-0-3); every semester. 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 the Western civilization what it is. It deals with readings that cover theology, politics and literature. CSC 201 is not a pre-requisite for taking the course.

Design

DES 100 Digital Media in Design (4-0-3); annually. Intended to introduce digital media as an integral part of design processes and communication. Covers care and operation of hardware, an introduction to the function and features of the Macintosh operating system, appropriate use of keyboard, mouse and other input devices, creation of digital documents, spreadsheets and use of relational databases and equipment such as printers and scanners. Introduces students to the integrated use of software appropriate for word processing and spreadsheets (Office 98), database (Filemaker Pro), precise drawing (PowerCADD), modeling (Form Z), imaging (Photoshop), and page and document layout (PageMaker, QuarkXpress). (Formerly ARC 211 or CMP 103 or ARC 230)

DES 111 Descriptive Drawing I (6-0-3); annually. This basic course introduces the student to the fun-

damental principles of descriptive drawing. Various conceptual approaches are explored and assignments encourage the student to develop an understanding of image generating techniques and materials. (Formerly AA 111)

DES 112 Descriptive Drawing II (6-0-3); annually. This drawing course will further introduce the student to the principles of drawing and emphasis will be given to the development of an individual approach to image generation. Various techniques and materials will be explored and assignments will encourage the development of skills needed to effectively communicate visual information. Prerequisite: DES 111.

DES 121 History of Material Culture I (3-0-3); annually. 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); annually. 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, the conceptual and critical skills and the techniques of design. Students learn to observe the world critically and meticulously and to analyze both the broad structure and the small details of visual phenomena; they master skills needed to conceptualize and communicate their observations through the traditional means (drawing, painting and drafting) and through digital and other media. Class assignments, critiques and presentations will enable students to develop an aesthetic awareness and teach them the skills of design. (Formerly AA 131)

DES 132 Design Foundations II (6-0-3); annually. This course continues the introduction of principles of design, with an emphasis on testing aesthetic and perceptual assumptions. Students develop problem-solving techniques through individual design solutions. While DES 131 concerns itself primarily with discovery and critical understanding of the phenomenal world, DES 132 is concerned with manipulation and synthesis, and the design and creation of unique two and three dimensional design concepts. Prerequisite: DES 131. (Formerly AA 132).

Economics

ECO 201 Principles of Microeconomics (3-0-3); every semester. 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 approaches to economics.

ECO 202 Principles of Macroeconomics (3-0-3); every semester. 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); annually. Theory of relative prices of commodities and productive service under perfect and imperfect competition. Theory of the firm and consumer demand.

ECO 302 Intermediate Macroeconomics (3-0-3); annually. Concepts and theory of national income determination, employment, inflation, and economic growth.

ECO 303 International Economics (3-0-3); annually. Introduction to the economics of international trade and finance, including why countries trade, commercial trade policies and their effects, balance of payments and the economics of foreign exchange markets, and the operation and effects of fixed and flexible exchange rates.

ECO 305 Development Economics (3-0-3); annually. Market and non-market growth models. The colonial and neo-colonial legacy. New strategies of development.

ECO 306 Economics of Middle East (3-0-3); annually. 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.

ECO 320 Theories of Political Economy (3-0-3); alternate years. Analysis of political economic theories including old and new institutionalists, neo-Richardians, and modern Marxist perspectives. Emphasis on interdependence of political, economic and social forces in shaping contemporary social problems.

ECO 401 Public Economics (3-0-3); annually. 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.

ECO 403 Economics of Oil and Gas (3-0-3); alternate years. The microeconomics of oil and gas. Issue of world oil and gas supply and demand; pricing; economics of downstream and upstream operations; marketing; the role and structure of OPEC and AOPEC; international political economy of oil.

ECO 404 Economics of Energy, Resources, and Environment (3-0-3); alternate years. An introduction to the policy issues associated with the changing role of energy and other resources in modern economics. Emphasis on valuation of renewable and nonrenewable resources. Analysis of energy utilization and environmental policy, and resource extraction and development. Particular emphasis on role of energy in Gulf economies.

ECO 407 History of Economic Ideas (3-0-3); alternate years. 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.

ECO 409 Introduction to Econometrics (3-0-3); alternate years. 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, and analysis of variance. Index numbers and time series analysis.

ECO/ARC 460 Professional Practice I: Economics and Management (3-0-3); annually. Introduction to the principles and practices of the business and commercial aspects of architectural practice in a global economy. Includes office management practices, basic business economics, accounting, and the development of sound business plans to assure profitability, and encourage growth. Attention is given to the processes and skills required to establish an independent architectural office. Taught in Department of Economics. Prerequisite: ARC 370, ARC 401.

ECO 470 Internship in Economics (3-0-3); every semester. Applied work in economics with businesses or government organizations in the Emirates. Students are supervised by professor and workplace supervisor.

ECO 480 Senior Seminar in Economics (3-0-3); annually. Intensive investigation of special topics in economics chosen by professor. Students must present a research paper and participate actively in seminar discussions.

ECO/ARC 460 Professional Practice I: Economics and Management (3-0-3); annually. Introduction to the principles and practices of the business and commercial aspects of professional practice in a global economy. Includes office management practices, basic business economics, accounting, and the development of sound business plans to assure profitability, and encourage growth. Taught in Department of Economics. Prerequisite: ARC 370, ARC 401.

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. Current, voltage, resistance, capacitance, inductance, DC, AC, ideal and real sources, linear and non linear elements, diodes, transistors, operational amplifiers, transducers, analog and digital representation of signals, logic gates, computer aided tools such as Pspice and Matlab. Every student has to assemble an electronic or electromechanical system such as an analog/digital multimeter or a DC power supply where electrical/electronic shop experience is emphasized. Prerequisite: NGN 111.

ELE 211 Electric Circuits I (3-0-3); Introduction to circuit analysis. Electric circuits elements. Ohm's and Kirchhoff's laws. Superposition. Thevenin's and Norton theorems. Nodal and mesh analysis. Dependent and independent sources. Op-Amps. First and second order circuit transient analysis. Prerequisite: PHY102.

ELE 212 Electric Circuits II (3-0-3); Sinusoidal steady-state analysis. Steady-state power calculations. Balanced three-phase circuits. Mutual inductance. Resonance. Laplace Transform in circuit analysis. Fourier series analysis. Two-port networks. Prerequisite: ELE 211.

ELE 212L Electric Circuits Lab (0-3-1); Prerequisite: ELE 211. Corequisite: 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. Power amplifiers. Frequency response characteristics. 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); Differential amplifiers. Operational amplifiers. Feedback and stability. Oscillators. Active filters. Pulsed waveforms and timing circuits Prerequisite: ELE 241.

ELE 341L Electronics II Lab(0-3-1); Prerequisite: ELE 341.

ELE 351 Electric Machines (3-0-3); Principles of electromagnetism. Single and three-phase transformers. Electromechanical energy conversion. DC machines. Synchronous and asynchronous machines. Prerequisite: ELE 212 and ELE 311 or NGN 225.

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 & 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 (3-0-3); Power unit system. Symmetrical components. Transmission-line parameters and steady-state operation. Power flows. Symmetrical and asymmetrical faults. Fundamentals of power system protection. Prerequisite: ELE 351.

ELE 371L Electric Machines and Power Systems Lab (0-3-1); Prerequisite: ELE351. Corequisite: ELE 371.

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 Electronics 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 & ELE 341.

ELE 433 Medical Electronics 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); Ultra-sound imaging. Introduction to medical radiology and x-ray imaging. Computerized tomography. Principles of magnetic resonance imaging. Prerequisite: ELE432.

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: Fourth year student.

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 waveguides and components. Microwave linear beam tubes. Microwave transistors and tunnel diodes. Avalanche transit-time devices. Gunn diodes. Prerequisite: ELE 361.

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 361.

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: Fourth year Student.

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 & ELE 361.

ELE 476L Instrumentations and Control Systems Lab (0-3-1); Various instrumentations and control applications. Prerequisite: Fourth year Student.

ELE 498 Electrical and Electronic Engineering Design Project I (0-6-2); An open-ended, in-depth design project of significance in electrical or electronic engineering that includes the design of a system, process or component to achieve functional objectives, representative of problems encountered by practicing electrical engineers. Students work in close accord with one or more faculty members, preferably in a team environment. The project outcomes must demonstrate that students have attained the necessary level of competency for entry into the electrical and electronic engineering profession. Prerequisite: Fourth year student.

ELE 499 Electrical and Electronic Engineering Design Project II (0-9-3); Continuation of ELE 498. Prerequisite: ELE 498.

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, 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 articles. 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 and strain transformation. Design and deflection of beams and shafts. Buckling of columns. Energy methods. 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. Prerequisites: PHY 102.

NGN 231 Materials Science (2-3-3); Introduction to material science, relationships between structure & 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: PHY 101 and MTH 104.

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: fourth year (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: fourth year (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: fourth year (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 maintainance management. Reliability and cost benefit analysis. Term project. Prerequisite: NGN 463.

English Communication Skills

COM 001 Fundamentals of Writing (0); every semester. This course is for students who need instruction on the basics of English writing, including sentence structure and the mechanics of writing. By the end of the course, students will be able to write a coherent, unified paragraph and will also be familiar with academic essay writing.

COM 101 N Academic Writing (3-0-3); every semester. This course introduces first year students to the writing tasks they will need at the university. Instructional emphasis is placed on the process of writing academic compositions, including brainstorming for ideas, outlining, writing a first draft, reading the draft, editing for grammatical mistakes, revising the draft, rereading it, etc.

COM 102 N Writing and Reading Across the Curriculum (3-0-3); every semester. This course gives students the chance to practice in-depth various methods of academic writing. The focus of instruction is on reading and writing across a range of academic disciplines as well as on introducing students to methods of reporting research.

COM 203 Genre Analysis (3-0-3); every semester. This course introduces students to a variety of literature genres including poetry, drama, and fiction. Students read and write about and to writing about a number of literary topics.

COM 204 Advanced Academic English (3-0-3); every semester. In this course, students focus on improving their ability to communicate effectively in an academic setting. Opportunities are given to students to summarize, critique and synthesize readings; to write essays; to present information orally to the class; and to write a formal research paper.

COM 205 English for Media (3-0-3); every semester. This course is intended for Architecture and Design students. Course content focuses on the understanding and use of English in areas pertinent to the visual arts: aesthetics, criticism, design, painting, film and advertising.

COM 206 English for Business (3-0-3); every semester. This course is intended for Business and Management majors only. Its purpose is to help students write and speak more effectively in business contexts. Emphasis is placed on written and spoken communication skills and on preparing, writing and presenting reports.

COM 207 English for Engineering (3-0-3); every semester. This course is 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.

COM 208 Public Speaking (3-0-3); every semester. This course introduces students to the art of public speaking, debate and argument; it also reinforces oral communication skills presented to the students during their first year English courses. Students gain confidence as public speakers by learning the techniques of making effective presentations and by gaining extensive practice in public speaking.

COM 209 Dramatic Expression (3-0-3); every semester. This course is intended to give students an opportunity to perform publicly in a variety of formats, including poetry reading, acting, miming and singing.

COM 210 Writing for the Media (3-0-3); spring semester. This course is intended for Multimedia and Visual Communication students. The course covers the intermediate analysis of and practice with forms of media writing: news stories, interviews, headlines, captions, scripting for TV, radio and advertising. May also include hands-on projects designed for use by a local newspaper or television/radio station and advertising copy.

English Language

ENG 123 Introduction to Language Study (3-0-3); every semester. This course introduces the student to the study of language structure and function. The areas of phonology, morphology, syntax and semantics, language acquisition, variation, evolution and language teaching will be explored.

ENG 126 History of the English Language (3-0-3); annually. This course is an introduction to the development of the English Language from its Indo-European roots to the present day. The study of linguistic change in English through the various periods (Indo-European; Germanic, Old, Middle and Modern English) covers phonological, morphological, syntactic, lexical and semantic changes.

ENG 222 Phonetics and Phonology (3-0-3); alternate years. This course examines the nature of the rules governing the sound systems of language with special emphasis on the English sound system. Students will also learn how to transcribe spoken Arabic and analyze phonetic differences in Arabic dialects as well as solve phonotactic problems in language. Prerequisite ENG 123.

ENG 224 English Grammar (3-0-3); annually. This course focuses on the fundamental rules of English grammar as they relate to sentence structure. Emphasis is placed on the study of patterns of argumentation and predication. Rules of sentence combination through coordination, complementation, relativization and modification are examined. Prerequisite ENG 123.

ENG 226 Morphology (3-0-3); alternate years. This course examines inflectional and derivational rules in language. Students will study processes of word formation and grammatical rules at the word level and learn methods used in linguistics to segment and identify morphemes and allomorphs in English and other languages. Prerequisite ENG 123.

ENG 234 Language in Society (3-0-3); alternate years. This course 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 236 Bilingual Education. This is a practical course introducing the student to issues which affect language instruction in a bilingual setting. Research findings about the effects of bilingualism on the individual and society are discussed.

ENG 320 Theory and Practice in English Language Teaching (3-0-3); alternate years. This course relates theories in foreign language learning to their implementation in teaching methods. Instructional materials from several areas in language teaching are examined in detail. Syllabus design and assessment are intoduced. Students are expected to demonstrate, observe, and evaluate different teaching methods in classroom situations.

ENG 322 Semantics and Pragmatics (3-0-3); alternate years. 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 324 Reading and writing in ESL/EFL (3-0-3); alternate years. This course 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 discussed. Effective instructional strategies based on current research are examined.

ENG 330 Psycholinguistics (3-0-3); alternate years. This course introduces the student to the

study the psychology of language by exploring the relationship between Language and the mind. It examines the processes involved in comprehension and production of language as well as stages in child language acquisition. Students are expected to conduct research to introduce them to data collection techniques and language data analysis. Prerequisite ENG 224.

ENG 334 Second Language Acquisition (3-0-3); alternate years. The focus of this course is on cognitive, social and affective factors influencing second language acquisition and bilingualism. The role of individual differences in SLA is also examined. Theories of second language acquisition/learning are discussed and stages in SLA learning are compared to First language acquisition development . Prerequisite ENG 224.

ENG 336 Discourse Analysis (3-0-3); alternate years. 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 420 Seminar in English Language (3-0-3); alternate years. The content of this course changes from year to year. The focus will be on various topics the English language. Prerequisite: consent of the instructor and a GPA of at least 77 in the major.

ENG 422 Advanced Grammar (3-0-3); alternate years. This course offers a linguistic perspective to the study of syntax. The structure of phrases and means of ordering and combining constituents within the sentence are studied in addition to further exploration in the nature of grammatical categories and relations in language. Prerequisite ENG 224.

ENG 424 Language history and change (3-0-3); alternate years. This course looks at the evolution of language, with special emphasis on English, and examines processes involved in language change through human history. Family trees and comparative reconstruction are explored.

ENG 426 Tutorial in English Language (3-6); on demand. The instructor and the student agree on the topic and the requirements for satisfactory completion of the course. Prerequisite: an average of 77 or above in the major and consent of the instructor.

English Literature

ENG 106 Introduction to Fiction (3-0-3); annually. This course examines contemporary fiction, the insights of various fiction writers about our modern world, and how these writers use the techniques of fiction to convey these ideas. The course will include about fifteen short stories and one short novel. It is intended both for English majors and for non-majors needing to fulfill their communication or humanities requirement.

ENG 107 Special Topics in Ancient Literature (3-0-3); occasionally. This course examines Ancient Literature in English from the non-Western World. It is specifically designed for students who are beginning their study of Ancient Literature.

ENG 108 Introduction to Drama (3-0-3); annually. This course introduces the genre of drama. It explores the elements of dramatic literature by reading contemporary plays. It emphasizes dramatic theory, the types of drama and how these types of drama reflect the social, political, and cultural conditions in which they were written. This course is designed for non-major students who are interested in becoming familiar with drama and fulfilling their requirements for Humanities.

ENG 109 Introduction to Poetry (3-0-3); annually. This course introduces the genre of poetry. It explores the variations of poetic style, form, and subject matter. It also teaches how to read and understand poetry by beginning with accessible contemporary American and British poetry. This course is designed for non-major students who are interested in becoming familiar with poetry and fulfilling their requirements for Humanities.

ENG 110 Survey of English Literature I (3-0-3); annually. This course is a survey of English literature (poetry, prose, and drama) from the Anglo-Saxon, Medieval, Renaissance, Restoration, and the Age of Reason literary periods. Representative texts will be studied in relationship to their social, political and historical background.

ENG 111 Survey of English Literature II (3-0-3); annually. This course is a survey of English literature (poetry, prose, and drama) from the Romantic, Victorian, and Modern literary periods. Representative texts will be studied in relationship to their social, political and historical background.

English 200. Creative Writing and Editing (3-0-3); annually. 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. Fulfils writing requirement for majors.

ENG 201 Expository Writing (3-0-3); every semester. The course focuses on reading and analyzing expository prose and on the techniques of writing critical research papers. Students will submit at least twenty pages of expository writing.

ENG 203 Poetry and Prose. 1500-1660 (3-0-3); annually. This course examines the poetry and prose from 1500 to 1660, with attention to the generic forms such as lyric, epic, pastoral, sonnet and blank verse associated with the English Renaissance. Students will read major works of Sidney, Spenser, Marlowe, Ralegh, Shakespeare (excluding drama), Donne, Jonson, Herrick, Carew, Herbert, Marvell, Bacon, and Milton.

ENG 204 Shakespeare Drama and Poetry (3-0-3); annually. This course offers both a generic and chronological selection of Shakespeare's sonnets and plays. Students will closely examine individual works in relation to the poetic forms, theatrical practices and the cultural-historical conditions of the time of their production. Whenever possible, video or live presentations of the plays will be provided to supplement instruction of the material. Students should expect to write at least one, if not two analytical essays on the material being studied.

ENG 207 The Beginnings of the Novel (3-0-3); annually. This course traces the development of the English novel from its beginning- early eighteenth century- to its coming of age in the works of Jane Austen. Readings will include works by Defoe, Richardson, Fielding, Smollett, and Sterne.

ENG 209 The Romantic age (3-0-3); annually. This course traces the development of English Romanticism, beginning with Blake Wordworth and Coleridge. It then follows the trajectory of the second generation Romantics, focusing on Byron, Shelly and Keats. Romanticism is viewed as a movement that, in spirit and practice, sought to topple classical and Neoclassical Enlightenment through patterns. Aspects of American Romanticism are also emphasized. English majors must take either this class or ENG 212.

ENG 211 The Nineteenth Century English Novel (3-0-3); annually. The course traces the development of the English novel and the social, historical, and political context of such writers as Jane Austen, Charles Dickens, George Eliot, Charlotte and Emily Bronte, Anthony Trollope, and Thomas Hardy. Four novels will be included in this course.

ENG 212 The Victorian Age (3-0-3); annually. This course examines the poetry and prose of major Victorian writers with attention to the social, political, and philosophical backgrounds. Also it provides an in-depth analysis of the literary forms such as criticism, dramatic monologue, lyric poetry, narrative poetry, polemical prose, and novel. Students will read writers such as Tennyson, R. Browning, E. Browning, Carlyle, Mill, Newman, Arnold, and Rosetti.

ENG 214 Studies in Twentieth Century Literature (3-0-3); annually. This course examines the literary trends of British and American poetry, fiction, and drama in from 1900-1945 and will explore the significance of such movements as realism, symbolism, and modernism. It will include fic-

tion writers such as Henry James, Viginia Woolf, James Joyce, D.H. Lawrence, Edith Wharton, F. Scott Fitzgerald, and William Faulkner; playwrights such as Bernard Shaw, Sean O'Casey, and Eugene O'Neill, and poets such as W.B. Yeats, Wallace Stevens, T.S. Eliot, William Carlos Williams, and Robert Frost.

ENG 216 Introduction to Literary Theory and Criticism (3-0-3); annually. This course introduces students to a variety of current critical practices and theoretical approaches to the study of literature. It offers practical applications of the theoretical texts under examination. Among the theories studied are structuralism, post-structuralism, new historicism, reader response theory, feminist theory, and deconstruction. Students should expect to write at least one analytical essay on the material being studied.

ENG 218-1 Special Topics in American Literature I (3-0-3); annually. This course shows the development of American literature from the 17th Century to 1860, with a focus on the philosophical, social, and political issues that shaped its styles and ideas. It will include the work of Bradstreet, Taylor, Jefferson, Franklin, Douglass, Poe, Thoreau, Emerson, Hawthorn, and Melville.

ENG 218-2 Special Topics in American Literature II (3-0-3); annually. This course shows the development of American literature from 1860-1945 with a focus on how American writers developed their styles and responded to the social and political problems of their society. It will include Dickinson, Whitman, Twain, O'Neill, Cather, Hemingway, Wright, and Faulkner.

ENG 312 East and West (3-0-3); alternate years. The course examines the representation of the Middle East, India, and China in the works of North American and European writers and/or the representation of Europe and North America in the work of Asian and Middle Eastern writers who write in English. Depending on the specialization of the instructor, it may focus on either the 18th Century or the 20th Century. The 20th Century approach would include such writers as Rudyard Kipling, E.M. Forster, Lawrence Durrell, Allbert Camus, John Hersey, Brian Kiteley, Wagieh Ghali, Anita Desai, Anton Shamas, and Ahdaf Soueif. A term paper will be required.

ENG 315 Literature of our Time (3-0-3); alternate years. This course focuses on British and North American poetry, fiction, and drama from 1945 to the present and is a continuation of English 214. It will examine the differences between literary movements such as modernism and post-modernism and how both movements affected contemporary realism. It will include fiction writers such as Toni Morrison, Eudora Welty, Saul Bellow, Margeret Atwood, John Barth, Alice Munro, and Thomas Pynchon, poets such Seamus Heaney, Ted Hughes, and Adrienne Rich, and playwrights such as Harold Pinter, Samuel Beckett, Arthur Miller, and Tennessee Williams. A term paper will be required.

ENG 318 World Literature Today (3-0-3); alternate years. This course examines modern European and South American fiction that his been translated into English and has influenced contemporary fiction in English. It will focus primarily on post-modernism and magic realism as literary movements and include the work of such writers as Jorge Luis Borges, Gabriel Garcia Marquez, Isabel Allende, Carlos Fuentes, Umberto Eco, Italo Calvino, and Gunter Grass. A term paper will be required.

ENG 410-1 Seminar in English Literature (3-0-3); alternate years. (Prerequisite: consent of the instructor is required). This course 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.

ENG 410-2 Seminar in American Literature (3-0-3); alternate years. This course will focus on the work of a major American writer and the critical assessment of that writer. Some of the writers to be

studied may be Herman Melville, Walt Whitman, Emily Dickinson, Mark Twain, William Faulkner, Willa Cather, Ernest Hemingway, Eudora Welty, Robert Frost, or Toni Morrison, as decided by the instructor. A critical paper will be required.

ENG 415 Tutorial in English Literature (3-6 credits); on demand. This course will focus on 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. The topic may be in either British or American literature.

Environmental Studies

(See Chemistry)

Finance

FIN 201 Corporate Finance (3-0-3); every semester. 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 202, MTH 201 and STA 201.

FIN 301 Financial Statement Analysis (3-0-3); annually. The foundation capstone course that 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. Students work in teams and present their analyses using visual, multimedia systems. Prerequisite: ACC 202, MTH 201 and STA 201.

FIN 302 Financial Markets and Institutions; annually. 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); annually. 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. Case studies, computer simulation and on-line data are used throughout the semester to enhance the learning process. Prerequisite: FIN 201 and FIN 301.

FIN 305 Commercial Banking (3-0-3); annually. An introduction to commercial bank management. This course covers the structure and internal organization of commercial banks and it 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 400 Portfolio Management (3-0-3); annually. This course provides the theoretical and operative framework for portfolio and advanced investment management. Students apply port-folio 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 301.

FIN 401 Advanced Financial Management (3-0-3): annually. Investment, financing and dividend-policy decisions of the financial manager. Case studies and problems are some of the tools used that enable the student to make and see the effects of financial decisions. Prerequisite: FIN 302.

French

FRN 101 French For Beginners (3-0-3); annually. 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.

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. Prerequisites: DES 112, DES 122 and DES 132.

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. Prerequisite: HRM 201.

HRM 301 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 302 Issues in Heritage Management II (3-0-3); A follow-up to Issues in Heritage Management, 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 301.

HRM 331 Traditional Regional Material and Climate (3-0-3); This course 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, and conservation and preservation intervention strategies. Discrete techniques to incorporate contemporary requirements regarding sanitary and air conditioning are explored. Instruction combines ongoing 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 400 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 Major Students Only)

HRM 370 Internship in Heritage Management (0-0-0); Minimum of six weeks of on-job experience with an approved institution or agency. Prerequisite: Consent of the director.

HRM 401 Final Project (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 Major Students Only)

HRM 421 Senior Seminar I in Arts and Heritage Management (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 422 Senior Seminar II in Arts and Heritage Management (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.

History

HIS 204 The Modern Arab World (3-0-3); annually. 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.

HIS 205 : World History (I) up to 1500 (3-0-3); annually. 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.

HIS 206 World History (II) 1500 – Present (3-0-3); annually. This course 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.

HIS 207 History of Modern Palestine (3-0-3); annually. This course is 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.

HIS 208 Women in History (3-0-3); annually. This course is 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.

HIS History of UAE (3-0-3)

Information Systems

(See Management Information Systems)

Intensive English

IEP 001 Novice Level (0); every semester. 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 (0); every semester. 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 (0); every semester. 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 (0); every semester. 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 (0); every semester. 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.

Interior Design

IDE 201 Interior Design Studio I (10.5-0-5); This project-oriented course is designed to equip students with the fundamental planning tools of the design trade. Students will apply basic principles of gathering, quantifying and organizing design information for proper planning use. With this in mind, and with the knowledge acquired in Fundamental Design, they will further explore and develop interior design solutions in basic graphic, 3-dimensional and computer generated forms. Prerequisite: DES 112.

IDE 202 Interior Design Studio II (10.5-0-5); The objective of this course is to strengthen student skills in the practical application of design principles, process, and practice. Students are encouraged to investigate critical design concepts, criteria, and concerns, and then, translate these values into viable and meaningful graphic, 3-dimensional and computer generated solutions. Students will analyze and synthesize form, function, scale, light, color, organization, etc. in relation to a given design project in the class. Prerequisite: IDE 201.

IDE 203 Material and Methods of Interior Design (2-3-3); This course emphasizes students gaining knowledge of the aesthetic, practical and technical aspects of major interior finish materials including their application, fabrication, installation and maintenance. It also provides an overview of how the available finish materials and techniques will provide choices available to the designer. Students will also examine how these choices affect the interior form, function and spatial quality; above all, how these choices respond and correspond to human physical and psychological needs. (Formerly ARC 223).

IDE 204 Interior Construction (2-3-3); Practically everything we touch, that is built in our environment, begins as an idea that is then drawn on paper so that it can be manufactured. This course covers the production and coordination of basic interior detailing, millwork and cabinetry elements with the general construction of interior space. Detailing, as a primary design element, is integral to design development, technical drawings, specifications and scheduling. Prerequisite: IDE 203.

IDE 301 Interior Design Studio III (12-0-6); This course focuses on advanced concepts used in the development and application of planning techniques and spatial concepts. It concentrates specifically on the design of medium-scale residential and commercial projects. An emphasis is placed on research and analysis of existing structures, contextual development of interior solutions, building constraints, accessibility standards and specialized product and materials specifications. Prerequisite: ARC 202 or IDE 202.

IDE 302 Interior Design Studio IV (12-0-6); The focus of this course is 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 320 History of Interior Design (3-0-3); This course presents an overview of interior design historical development as a collective expression of art, architecture, science and culture, however, as by-product of its own time and as a resource for stimulating new ideas. The history of interior design draws upon several different fields of scholarly study. It is based 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.

IDE 370 Professional Training (0-0-0); Minimum of six weeks of on-job experience with an approved professional firm.

IDE 401 Interior Design Studio V (10.5-0-5); The focus of this course is for students to use the advanced programming, planning and application of volumetric concept procedures and techniques in the design of large-scale projects. The course also covers: the consideration for interior solutions and design documentation in mix-tenant public buildings; client selections and applied research; specialized product and materials specifications; furniture and furnishing selection and presentation methods relative to client context. In addition, the course assists students in preparing for their final portfolios, including the entire body of projects completed to date. Prerequisite: IDE 302.

IDE 402 Final Project Research (2-10-5); This is an independent design research study for the Final Project Studio VI (IDE403). Individual students select unique design topics with guidance and approval from the faculty advisory group and prepare, through comprehensive and complete research, programs for the course. Prerequisite: IDE 302.

IDE 403 Final Project Studio VI (2-14-8); Individual design resolution based upon the research findings initiated in the Final Project Research (IDE 402) course. This 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 402.

IDE 404 Interior Design Project Management (3-0-3); The 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 including client need and programming, project scheduling and budgeting, preliminary design, design development, construction documents composition, consultant collaboration, construction progress evaluation, post occupancy and follow up is highlighted in detail. Prerequisite: ARC 460.

IDE 502 Color and Light (2-3-3); This is an introductory course in fundamentals, principles and art of lighting and color, and their visual and physical effects in interior architecture. The content explores light and color as important elements in interior space through the study of sight and light, color and light, terminology, light sources, fixtures, material color and related assignments.

IDE 503 Exhibition Design and Research (4-0-3); The purpose of this course is to equip students with the essential research, planning and design tools to perceive, prepare and produce an exhibition environment such as museum and gallery interiors for a variety of art and artifacts.

IDE 504 Special Project (3-0-3); This is a specialized project and research oriented course with topics of interest including the cultural and historical influences of decoration, Middle Eastern traditional interior, modern residential interiors, historical preservation, specialized interiors, i.e. a hospital, a handicapped facility, a prison, an elderly home, a hotel, a theater, etc.

International Business

INB 201 Fundamentals of International Business (3-0-3); every semester.. 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.

Management

MGT 101 Fundamentals of Management (3-0-3); every semester. Current management theories, research and practice. Course content represents a synthesis of behavioral sciences providing a broad framework for management. Topics include organizational goals and responsibilities, models, decision theory, planning, control organization, motivation, leadership, group behavior, conflict and organizational change. Prerequisite: first year (freshman) standing.

MGT 301 Organizational Behavior (3-0-3); every semester. Current management theories, research and course content represent a synthesis of behavioral sciences providing a broad framework for management. Topics include organizational goals and responsibilities, models, decision theory, planning control, organization, motivation, leadership, group behavior, conflict and organizational change. Prerequisite: MGT 101.

MGT 302 Managing Human Resources (3-0-3); annually. Understanding the principles and operations of personnel administration and industrial relations systems in organizations by analyzing and applying theoretical concepts to functional situations. Usually offered every term. Prerequisite: MGT 301.

MGT 303 Management and Leadership Development (3-0-3); annually. Develops the managerial leadership and organizational perspectives essential to the success of small to large businesses and individual managers. Development of the management and organization, and the leadership, creativity and innovation are stressed. Enhancing the manager's Communication and negotiation skills is a critical dimension to developing effective managers. Developing an understanding of management Philosophy and values, and their practical impacts on managing a business is stressed. Prerequisite: MGT 301 and MGT 302.

MGT 306 Entrepreneurship (3-0-3); annually. Students study how to identify and evaluate entre-

preneurial opportunities in a global context. Applications cover the creation and management of stand-alone ventures and those developed within corporations. Various simulation and case study techniques are employed to provide the student with an entrepreneurial environment. Prerequisite: FIN 301.

MGT 403 Project Management (3-0-3); annually. Students examine business decision-making theories and practices appropriate to information systems development and re-engineering projects involving large-scale, complex systems. They use tools to facilitate the monitoring and prioritizing of external and internal project activities such as modeling decisions, evaluating risks, defining opportunities and identifying alternative courses of action and reaction to unplanned events. Prerequisite: FIN 301 and MIS 201.

MGT 406 Business Policy and Strategy (3-0-3); annually. Integration of knowledge in functional areas of business and in the simulation of management experiences. Various methods of simulating a management environment are employed, including live case studies and computerized management problems. Students will analyze a corporation chosen by the faculty of the School of Business and Management and will present their findings to members of the UAE business community and to members of the AUS faculty. Prerequisite: fourth year (senior) standing.

Management Information Systems

MIS 201 Fundamentals of Management Information Systems (3-0-3); every semester. 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. Prerquisite: CMP 101.

MIS 202 Advanced MIS (3-0-3); annually. This course addresses, in particular, emerging issues in management information systems, be they related to hardware, software, telecommunications, application philosophies, or combinations of these. In recent years, the MIS discipline has been changed by technologies such as groupware, client/server architectures, object oriented techniques in data modeling and systems development, workflow automation, the Internet, Intranet and Electronic Commerce and other emerging technologies. A number of these topics, not necessarily all of those listed above, will be covered in the course in an attempt to identify their characteristics and their applicability in the world of business. The course will have a practical orientation and the use of case studies. Prerquisite: MIS 201.

MIS 301 Fundamentals of Database Management (3-0-3); annually. This beginning course on database management is part of the MIS core curriculum and is critical to your future success in other MIS courses and career as an MIS professional. Nearly all MIS-related work involves data in someway. The course 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; The Relational Model. Prerquisite: MIS 201, BIS 201.

MIS 302 Advanced Database Management (3-0-3); annually. This advanced course on data management is part of the MIS core curriculum and is critical to students' success in MIS career as an MIS professional. Nearly all MIS-related work involves data in someway. The course addresses the 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; Organizational Memory Technologies; and, Managing organizational Memory. Prerquisite: MIS 301.

MIS 303 Introduction to Systems Analysis (3-0-3); annually. 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. Prerquisite: MIS 201.

MIS 401 Business Data Communications (3-0-3); annually. This course 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. Prerquisite: MIS 201.

MIS 402 Knowledge Management and Expert Systems (3-0-3); annually. Through this course the student will gain insight into how to capture, maintain, disseminate and apply knowledge within an organization and its stakeholders. The class will explore the theoretical foundations of knowledge and its value to the organization. Hands-on exercises will help to understand how today's technology, social structures and best management practices can be combined to better manage an organization's corporate brain. Students will gain improved insights into the nature of organizational relationships and how they can be exploited to maximize knowledge transfer. The nature of intellectual capital and valuation of an organization's knowledge assets will also be examined. Covered also are topics relating to emerging technologies such as data warehousing, data mining, artificial intelligence, Internet, object-oriented and multi-dimensional databases, and advanced search engines which can be used to provide new, powerful tools to capture, distribute, and use knowledge better. Prerquisite: MIS 201.

MIS 403 Applied Systems Design (3-0-3); annually. This course builds on previous courses and allows students to apply the tools studied in MIS 303. The class 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. Prerquisite: MIS 303.

MIS 404 Internet Business Applications (3-0-3); annually. 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. Prerquisite: MIS 401.

Marketing

MKT 201 Fundamentals of Marketing (3-0-3); every semester. Students are introduced to 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 government are explored. Prerequisite: ACC 201, ECO 201 and ECO 202 .

MKT 301 Consumer Behavior (3-0-3); annually. 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. Students learn to analyze consumer decisions for products or services and to determine effectiveness of information provided by government and other organizations. Prerequisite: MKT 201 and STA 202.

MKT 302 Marketing Research (3-0-3); annually. This course 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 STA 202.

MKT 303 Strategic Marketing (3-0-3); annually. 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.

MKT 304 Sales Management (3-0-3); annually. 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.

Mathematics

MTH 001 Preparatory Mathematics (3-0-0); a pre-Calculus course; every semester. Polynomials, functions, exponents and logarithms, coordinate geometry and graphing, conic sections, trigonometry, complex numbers, vectors and their addition, sequences and series, elements of statistics and probability.

MTH 002 Preparatory Business Mathematics (3-0-0); every semester. 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 100 Fundamentals of Logic and Geometry (3-0-3); every semester. This course 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 2 and 3 dimensions; linear transformations and quadratic forms.

MTH 101 Mathematics for Business I (3-0-3); every semester. Coordinate systems and graphs. Matrices, linear systems and applications. Elementary introduction to linear programming. Set theory, counting techniques, permutations and combinations. Elementary introduction to probability. Topics in the mathematics of finance. Greater emphasis is placed on techniques and applications than on theory and derivations. Prerequisite: MTH 002 or Placement Test.

MTH 102 Mathematics for Business II (3-0-3); every semester. The derivative, rules for differentiation and their applications to optimization. Definite and indefinite integrals, methods of integration, applications. Functions of more than one variable, partial differentiation, applications to optimization. Greater emphasis is placed on techniques and applications than on theory and derivations. Prerequisite: MTH 101.

MTH 103 Calculus I (4-1-4); every semester. 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); every semester. Transcendental functions, exponential and logarithmic functions, trigonometric functions. Techniques of integration, indeterminate forms, infinite series, power series, Taylor and Maclaurin 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); every semester. An introduction to those parts of geometry and calculus needed for architecture. This

course comprises a review of trigonometry , areas, and volumes of elementary geometric figures, and the analytic geometry of lines, planes and vectors in 2 and 3 dimensions. In the calculus it covers the elements of differential and integral calculus, including applications of the derivative to maximum and minimum problems, and methods of finding areas, and volumes by integration. The course has a computer laboratory component.

MTH 203 Calculus III (4-1-4); every semester. 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); every semester. Theory, methods of solution, and applications of ordinary differential equations with an emphasis on first order equations and linear equations. Additional topics from power series solutions, Laplace transforms, linear systems and numerical methods. Prerequisite: MTH 104.

MTH 213/CMP 213 Discrete Mathematics (3-0-3); annually. The course covers logic, counting, relations and functions, graph theory and Boolean algebra. Prerequisite: MTH 103.

MTH 221 Linear Algebra (3-0-3); annually. Systems of linear equation, algebra of matrices. Linear transformations, determinants, vector spaces, inner product spaces, eigenvalues and eigenvectors, diagonalization and orthognality. Special matrices. Applications. Prerequisite: MTH 104.

MTH 311 Advanced Calculus I (3-0-3); annually. 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); annually. Introduction to the theory of numbers motivated by applications. Primes and divisibility; the Euclidean algorithm; linear congruencies and the Chinese Remainder Theorem; Fermat's Little Theorem; continued fractions and Farey sequences. Applications to cryptology, computer arithmetic, random number generators and primality testing. Possible additional applications to computer science, physics, communication, music. Prerequisite: MTH 213.

MTH 314 Combinatorics (3-0-3); annually. Techniques for counting configurations of objects. Recurrence relations; principle of inclusion-exclusion; graphs, trees and circuits. Additional topics chosen from Polya's Theorem, generating functions and network flows. Prerequisite: MTH 213.

MTH 320 Modern Algebra I (3-0-3); annually. Study of group theory and introduction to rings. 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 instructor.

MTH 321 Modern Algebra II (3-0-3); annually. Elementary properties of rings, integral domains, ideals, homomorphisms, quotient rings and fields. Rings of polynomials and factorization of polynomials over a field; unique factorization domains; Einstein's irreducibility criterion; field extensions; the isomorphism extension theorem; the primitive element theorem; geometric constructions by ruler and compass; introduction and illustrations of Galois theory. Prerequisite: MTH 320.

MTH 325 Coding Theory I (3-0-3); annually. Introduction to coding theory, linear codes, Hamming codes, Hamming distances, Hamming weights, error probability, Shannon's theorem, dual codes, weight distribution of linear codes, cyclic codes, BCH codes, convolutional codes, encoding and decoding. Prerequisite: MTH 221 or the consent of the instructor.

MTH 341 Numerical Computing (3-0-3); annually. An introduction to the numerical algorithms fundamental to scientific computer work. Includes elementary discussion of error; root finding; approximation of functions; numerical integration and differentiation; solving initial value problems in ordinary differential equations. The algorithmic approach and the efficient use of the computer are emphasized. Prerequisite: CMP 105 and MTH 205 or consent of instructor.

MTH 342 Numerical Linear Algebra (3-0-3); annually. Direct and iterative methods for solving general and special systems of linear equations. Includes LU decomposition, Choleski decomposition, nested dissection, Jacobi, Gauss –Seidel, successive overrelaxation, alternating directions, and conjugate gradient iterative methods. Singular value decomposition. Iterative methods for algebraic eigenvalue problem. Prerequisite: MTH 221.

MTH 351 Methods of Applied Mathematics I (3-0-3); annually. First-order ordinary differential equations. Linear second order equations with constant coefficients. Homogeneous and non-homogeneous second-order equations. 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. Corequisite: MTH 203.

MTH 352 Methods of Applied Mathematics II (3-0-3); annually. 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); annually. 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); annually. 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); annually. 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); annually. 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); annually. 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); annually. 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 specturm, vector norms and related matrix norms, the condition number of a matrix. Prerequisite: MTH 221.

MTH 426 Differential Geometry (3-0-3); annually. Theory of curves and surfaces in Euclidean space.

Frenet formulas, curvature and torsion, arc length; first and second fundamental forms, Gaussian curvature, equations of Gauss and Codazzi, differential forms, Cartan's equations; global theorems. Prerequisite: MTH 411.

MTH 431 Dynamical Systems (3-0-3); annually. 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); annually. Theory of partial differential equations and boundary value problems with applications to the physical sciences and engineering. Detailed analysis of the wave equation, the heat equation and Laplace's equation using Fourier series and other tools. Prerequisite: MTH 351 and MTH 352.

MTH 441 Numerical Solutions of Ordinary Differential Equations (3-0-3); annually. Theory of numerical techniques for linear and nonlinear initial and boundary-value and eigenvalue problems. The discussion of the numerical techniques will focus on consistency, accuracy, stability, stiffness, numerical efficiency, etc. Stiff equations and multiple time scales. Prerequisite: MTH 342.

MTH 442 Numerical Solutions of Partial Differential Equations (3-0-3); annually. 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 443 Numerical Solutions of Partial Differential Equations (3-0-3); annually. Computationally efficient schemes for solving PDE numerically; stability and convergence of difference schemes, method of lines; fast direct and iterative methods for elliptic equations. Prerequisite: MTH 442.

MTH 451 Methods of Applied Mathematics III (3-0-3); annually. 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 452 Methods of Applied Mathematics IV (3-0-3); annually. Review of the theory of residues and contour integrals. Asymptotic analysis of selected ordinary and partial differential equations. Perturbation techniques. Connection with eigenvalue problems. Prerequisite: MTH 451.

MTH 460 Mathematical Logic (3-0-3); annually. 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); annually. Topics of current interest in mathematics not covered in existing courses. May be repeated under a different subtitle. Prerequisite: third or fourth year (junior or senior) standing and permission of instructor.

MTH 470 Modeling and Simulation (3-0-3); annually. 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); annually. 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); annually. Theory and applications of discrete optimization algorithms. Transportation problems and network flow problems; integer programming; computer implementation. Prerequisite: MTH 382.

MTH 490 Independent Study (1-6); annually. Involves investigation under faculty supervision beyond what is offered in existing courses. Prerequisite: third or fourth year (junior or senior) standing and consent of instructor.

MTH 495 Seminar in Mathematics (3-0-3); annually. Investigation of and an oral report on a mathematical topic under the direction of a faculty member. Within the first four weeks of the semester enrolled, the student must submit an outline of the proposed work to the Mathematics Advisory Committee for approval. Prerequisite: third or fourth year (junior or senior) standing and consent of instructor.

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 102.

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: PHY 102.

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-requisites 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. Turning moment diagrams and flywheels. Cams. Balancing of rotating and reciprocating masses. 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. Problems will be drawn from all fields of interest to mechanical engineers. The computational techniques include: solution of linear and transcendental simultaneous equations, solutions of ordinary and partial differential equations, numerical integration and dif-

ferentiation, 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.

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 241.

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 241.

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: fourth year (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: fourth year (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: fourth year (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. Delamination, matrix cracking, and durabililty. Introduction to analysis of plates. Analysis of laminated beams. Design examples. Computer programs. Prerequisite: NGN 223, NGN 231.

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, impeller and diffuser design optimum design of compressor inlet, 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 energy systems.

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

Multimedia

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 WorldWide Web, designing for web pages, interactive applications and CD-ROM design development. Prerequisites: ARC 211 or CMP 103 or DES 100, DES 112 and second year (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 202S Multimedia Superstudio (10.5-0-8); A concentrated, high intensity introduction to multimedia combining the material of MUM 201 and MUM 202 into one course. Prerequisites: DES 112, DES 132 and DES 100 or equivalent.

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. Prerequisites: DES 112, DES 132.

MUM 211 Sound and Video II (6-0-3); A continuation of MUM210 covering video recording, non-linear editing, production and post-production processes and techniques. Prerequisite: MUM 210.

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 310 3-D Advanced Modeling and Animation (6-0-3); Studies in 3-D modeling, design and rendering for third and fourth year students.

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 370 Professional Training for Multimedia (0-0-0). Minimum of six weeks of on-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.

Philosophy

PHI 201 Introduction to Philosophy (3-0-3); every semester. This course introduces students to basic doctrines and concepts in philosophy. The focus is on the analytical reading of selections from Western philosophers whose writings have had a major impact on the development of philosophical discourse. Furthermore, the course deals with the relationship of philosophy to other disciplines, such as history, theology, politics, ethics, science and literature. It also outlines the major and perennial issues in the study of philosophy.

PHI 202 Introduction to Islamic Philosophy (3-0-3); annually. This course is an introductory survey of the works of major philosophers in Islam, such as Al Ghazali, Ibn Rushd, the Sufis, and a few others. Emphasis will be placed on the analysis of their religious and philosophical doctrines.

Physics

PHY 001 Preparatory Physics (3-0-0); every semester. 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 (3-0-0); annually. 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, straight-forwardly descriptive and without complex mathematics. The course covers selected topics in classical mechanics, electricity and magnetism, waves and light, and modern physics.

PHY 101 General Physics I (3-3-4); every semester. 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. Prerequisite or corequisite: MTH 103 Calculus I.

PHY 102 General Physics II (3-3-4); every semester. A continuation of General Physics 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); every semester. This course 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); annually. 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 waveforms: amplitudes and frequencies. Taught in the Department of Physics. Prerequisite: MTH 111 or consent of the instructor.

PHY 201 Modern Physics I (3-0-3); annually. A course designed for science and engineer majors to introduce topics in relativity, quantum theory, atomic and nuclear physics, and solid state and semi-conductor 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.

Political Science

POL 201 Introduction to Political Studies (3-0-3); annually. This course is designed to introduce students to the science of politics. It aims at explaining the nature of government and politics and exposing basic ideas, concepts, doctrines, principles and schools of thought that help in the understanding of the structures and processes of political units. The course will cover numerous topics, including the nature and scope of political studies, the nature of the state, the forms of government, public administration, the nature of foreign policy, relations between states, the international system and international organizations.

POL 202 International Relations (3-0-3); annually. This course examines the basic factors and considerations which determine or influence relations among governments and states, such as the United Nations Charter, foreign policy, national economic and political power, and military and trade conflicts.

POL 203 Islamic Political Philosophy (3-0-3); annually. This course surveys Islamic political thought from the time of Prophet Mohammad until the early years of the twentieth century. Emphasis will be placed on the establishment and growth of institutions in the Islamic state and on Ibn Khaldun's views on history and the state.

POL 204 International Political Economy (3-0-3); annually. This course examines the effect of econom-

ic conditions of major world powers on foreign policy directions and decisions. Emphasis will be placed on such concepts as imperialism, global economic systems and international market considerations.

POL 209 Comparative Arab Political Systems (3-0-3); annually. Comparative analysis of Arab state political institutions and systems. Factors leading to change in systems as a result of the process of globalization.

POL 305 Political Development and Modernization (3-0-3); annually. A survey of major issues and controversies in political development and their relevance to nation building in developing countries. Various Components of this course include the impact of military rule, political parties and elites on political change and modernization. Prerequisite: POL 201.

POL 406 Islamic Political Institutions (3-0-3); annually. A survey of the Shari'a in contemporary political practice, against the background of its historical evolution.

Psychology

PSY 101 General Psychology (3-0-3); every semester. This course includes a general survey of Psychology. 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.

PSY 102 Social Psychology (3-0-3); every semester. This course 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.

PSY 201 Abnormal Psychology (3-0-3); annually. This course will examine 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.

Public Administration

PBA 101 Introduction to Public Administration (3-0-3); every semester. The nature of public administration. Basic concepts, processes, approaches and fields of public administration are introduced so that the student will develop a sense of appreciation of the role of public administration in modern society.

PBA 201 Government Management (3-0-3); every semester. An introduction to the theory and practice of managing governmental agencies at the national level. Concentrates on administrative structures and processes. Examines the development of the domestic and the Arab state and UAE federal bureaucracy and the potential for change in future directions on administration, hiring, and programs. Usually offered every fall. Prerequisite: POL 120.

PBA 203 Public Management (3-0-3); every semester. Problems of management in public agen-

cies: the activities of public managers; the different kinds of government agencies, their settings and tasks; the administrative methods used by public managers; and the applicability of these methods under various conditions.

PBA 205 Intergovernmental Relations (3-0-3); annually. The political, fiscal, and administrative relationships which help to shape the complex intergovernmental system. Federal, emirate, local, and other jurisdictions are examined concerning their effect on intergovernmental systems. Prerequisite: POL120.

PBA 301 Public Management Skill Modules (1-2); every semester. Focuses on leadership, communication, techniques of motivation, delegation of work skills, etc.

PBA 302 Comparative Public Administrative Systems (3-0-3); every Spring. An examination of governmental administrative systems in Europe, North America, The Arab world, Asia, and Africa. The focus is on these institutions as subsystems of national and international economic and political systems. The emphasis is on the comparative analysis of administration in varied industrialized nations, and the nations of Third World.

PBA 304 Public Budgeting (3-0-3); annually. A survey of the principles and problems of financial organization and management in the public service with emphasis of fiscal planning, formulation and execution of the budget, financial accountability, control and other aspects related to the role of the budget in development.

PBA 306 Public Personnel Administration (3-0-3); annually. Policies and managerial processes for dealing with governmental personnel including staffing, personnel development, classification, performance appraisal, and labor-management relations.

(To be cross listed with MGT Managing Human Resources).

PBA 310 Research in Public Administration (3-0-3); annually. Introduction to research methods in public administration. Presents various analytical frameworks and methodological tools including data collection and analysis in public administration research.

PBA 402 Local and Regional Administration (3-0-3); annually. Survey of the structure, function and process of administration in the local, regional and national levels and the relations among them. It also examines the issues of centralization-decentralization and issues of balanced development at all levels.

PBA 407 Legal Issues in Public Administration (3-0-3); annually. An introduction to legal issues facing public mangers. After an introduction to the legal basis of public administration, including the empowerment process, administrative procedures, and judicial review, students focus on legal issues in client relations, administrative ethics, personnel management, and general administration.

PBA 408 Development Management (3-0-3); alternate years. The problems of administering public programs in developing countries and the methods by which development projects are carried out.

PBA 409 Organizational Planning and Control (3-0-3); alternate years. An introduction to planning theory. Efforts at governmental planning in the United States, the Arab World and the UAE. Techniques used to develop and implement organization planning and control systems, and individual and group resistance to planning and the implications of this for public administration. Prerequisite: PBA 203 or 205 or equivalent.

PBA 410 Public Program Evaluation (3-0-3); alternate years. Introduction to the elements of policy and program analysis for public program managers Normative criteria for program evaluation; systematic strategies for assessing and measuring the effects of program elements and policy changes; and logic and limitations.

PBA 411 Foundations of Policy Analysis (3-0-3); alternate years. Distributional effects, externalities, and the role of risk and uncertainty in policy analysis. Criteria for choice, normative roles for analysis, and using information and social welfare criteria in making policy decisions.

PBA 412 International Organizations (3-0-3); annually. A survey of International Organizations; their structure, function, scope and relevance to the UAE and its economy.

PBA 413 Public Financial Analysis (3-0-3); annually. How to analyze the financial health of state and local governments and other public organizations and develop remedies for financial problems. Financial condition is related to expenditure, revenue, and borrowing decisions; the economic base and needs of the community; capital markets; public employees and the overall economic system.

PBA 415/ECO 415 Economics and Public Policy (3-0-3); annually. Economics of environmental policy, education, welfare, healthcare, transportation, etc. Prerequisite: ECO 101 and 102.

PBA 417 Public Finance (3-0-3); offered occasionally. Investigates the theoretical basis and working knowledge of the techniques needed to examine and evaluate public sector activity. Includes the role and size of the public sector, budget structure, and intergovernmental relations. May also include issues of development finance and debt management.

PBA 497 Internship in Public Administration (3-6); every semester. A program of placement of the public administration major as an intern in governmental, non-governmental, not-for-profit or private sector agencies. A report, analytical in nature, on an aspect of the interns experience will be submitted at the conclusion of the internship.

Sociology

SOC 309 UAE Legal and Political Institutions (3-0-3); annually. The study of the legal and political institution of the UAE. Investigation of the federal, emirate and local institutions, their relationships and the process of policy making.

Statistics

STA 201 Introduction to Statistics (4-0-4); every semester. Descriptive statistics; probability distributions, estimation; hypothesis testing; non-parametric tests; analysis of variance; mean and variance tests; regression and correlation; and the use of statistical computer software.

STA 360 Engineering Statistics (3-0-3); every semester. Calculus-based survey of statistical techniques used in engineering. Data collection and organization, basic probability distributions, sampling, confidence intervals, hypothesis testing, process control, simple regression techniques, design of experiments. Emphasis on examples and applications to engineering, including product reliability, robust design and quality control. Prerequisite: MTH 203.

STA 361 Probability and Statistics I (3-0-3); annually. Introduction to descriptive statistics, random variables and probability distributions. Topics include descriptive statistics, data collection, graphical methods, measures of location, measures of dispersion; sample spaces, probability rules, conditional probability, Bayes' theorem; discrete and continuous random variables, probability distributions, mathematical expectation, Tchebyshev's theorem; common discrete and continuous probability distributions with applications. Prerequisite: MTH 104.

STA 362 Probability and Statistics II (3-0-3); annually. Introduction to statistical inference. Topics include joint, conditional and marginal distributions; covariance; functions of random variables, moment generating functions, sampling distributions, central limit theorem; point and interval estimation; hypothesis testing; contingency tables and goodness of fit test. Prerequisite: MTH 104 and STA 361.

STA 380 Applied Statistics with Applications in Economics (3-0-3); annually. Estimation, inference, multiple regression and correlation. Elementary decision theory. Applications in Economics such as organization and interpretation of economic data, analysis of price, production and income data. Prerequisite: STA 201.

STA 450 Introduction to Stochastic Processes (3-0-3); annually. Study of random processes selected from: Markov chains, birth and death processes, radom walks, Poisson processes, renewal theory, Brownian motion, Gaussian processes, white noise, spectral analysis, applications such as queuing theory, sequential tests. . Prerequisite: STA 362.

STA 460 Applied Time Series Analysis (3-0-3); annually. A study of univariate and multivariate time series models and techniques for their analyses. Emphasis on methodolgy rather than theory. Examples are drawn from a variety of areas including business and economics,. Prerequisite: STA 362.

STA 470 Applied Multivariate Statistics (3-0-3); annually. Introduction to multivariate analysis emphasizing statistical applications. Topics include matrix theory, multivariate distributions, test of hypotheses, multivariate analysis of variance, principal components, discriminant analysis, canonical correlation, multivariate regression, and related topics. Prerequisite: STA 362.

STA 480 Sampling Techniques (3-0-3); annually. Theory of probability sampling designs; unrestricted random sampling, stratified sampling, cluster sampling, multistage or subsampling, ratio estimates, regression estimates, double sampling. Prerequisite: STA 201.

Translation

TRA 101 Introduction to Translation (3-0-3); every semester. This course aims to introduce students to basic theoretical concepts and techniques of translation and to help them develop elementary skills. Initiation to translation will be achieved by comparing translated texts. Arabic and English will be considered both as source and target languages.

TRA 102 Practical Issues in Translation (3-0-3); every semester. This course addresses, in some detail, the problems associated with various aspects of translation. Some of the topics addressed include the definition of translation, its role in society, its various types and techniques, types of dictionaries and thesauruses, antonyms, idioms and fixed expressions, and proverbs. A functional review of translation into and from Arabic is also presented.

TRA 201 Theoretical and Practical Issues in Translation (3-0-3); every semester. This course addresses, in some detail, the problems and issues associated with the different types of translation. Some of the topics addressed are what translation is; its role, its various types and techniques; types of dictionaries, lexica, thesauruses, dictionaries of synonyms, antonyms, idiomatic expressions and proverbs; and a functional review of translation into and from Arabic.

TRA 203 Translation Practicum (3-0-3); every semester. This course involves students in translation exercises from English to Arabic and Arabic to English. Probing examination of model translations by accomplished translators will be undertaken through studying both the original and the translated texts.

TRA 301 Advanced Translation (3-0-3); annually. This course provides a close examination of

major translation theories, both traditional and linguistic. It also examines the application of these theories to the practice of translation, both literary and technical, in Arabic and in English.

TRA 305 Cross-Cultural Issues in Translation (3-0-3); every semester. This course deals with the role of culture in translation. Some of the topics addressed are meaning equivalence, translation strategies and how culture affects meaning.

TRA 403 Special Topics in Translation (3-0-3); annually. This course examines translation practices based on modern linguistic theories beyond grammatical analysis. Notions of thematic structure, naturalness, acceptability and information flow in a text will be explored. It may also look at how modern linguistic theory (LFG) has been used in Machine Translation.

TRA 405 Tutorial in Translation (3-0-3); every semester. This course is offered on demand. The instructor and the student agree on the topic requirements of the course.

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. Prerequisites: 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 211 Drawing for Visual Communication (6-0-3); annually. Building on skills introduced in foundation drawing, this course encourages the student to utilize a wide variety of illustration media. Class projects focus on drawing from life, location drawing and visualizing concepts and ideas within the genre of commercial illustration. Prerequisites: DES 112 and DES 132. (Formerly GRA 211)

VIS 212 Journalistic Illustration (6-0-3); Though firmly based on observational drawing, this course also introduces the student to the process of photographic reference gathering techniques. Research with camera and pencil form a large part of the course content and projects encourage students to report on subjects of local interest. Prerequisites: DES 112 and DES 132.

VIS 221 Photography Basics (6-0-3); annually. Introduction to basic photo skills and to some of the issues associated with the practice and the 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 is applied. Prerequisites: DES 112 and DES 132 or consent of the instructor. (Formerly PHO 200)

VIS 222 Multiples I (Printmaking) (6-0-3); annually. Students are introduced to a variety of techniques in traditional and alternative printmaking methods. These include, but are not limited to, intaglio, linocuts, monoprints, 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 is applied. Prerequisite: VIS 211 or consent of the instructor. (Formerly DES 200)

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. Prerequisites: VIS 211 or VIS 212. (Formerly GRA 211)

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); annually. 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 is applied. Prerequisite:VIS 221. (Formerly PHO 300)

VIS 322 Multiples II (Printmaking) (6-0-3); annually. 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 is applied. Prerequisite: VIS 222 or DES 200.

VIS 340 Intensive Studio Practice (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. Prerequisites: DES 112 and DES 132.

VIS 341 Intensive Studio Practice (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. Prerequisites: 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. Prerequisites: DES 112 and DES 132 or consent of the instructor.

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 practice of, and other issues relating to digital and analog technologies and 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. Prerequisites: DES 112 and DES 132 or consent of the instructor.

VIS 370 Professional Training (0-0-0); Minimum of six weeks of on-job experience with an approved professional firm. Prerequisite: Consent of the director.

VIS 401 Senior Graphic Design Studio V (6-0-4); A senior level studio course in which the student will develop an 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 a four-year study in graphic design and the portfolio will embody that achievement. In this course, students are required and 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); annually. Students at this level will work in traditional and non-traditional methods in printmaking and 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 and consent of the instructor.

VIS 422 Senior Portfolio in Multiples/Photography (6-0-3); annually. 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.

Full-time Faculty

1999 –2000 Academic Year

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

Abu-Yousef, Imad, Ph.D., McGill University,1996; Assistant Professor of Chemistry

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

Al Ahmad, Walid, Ph.D., K.U. Leuven,1999; Assistant Professor of Computer Sciences

Al Assaf, Yousef, Ph.D., Oxford University,1988; Associate Professor of Mechanical 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 Sciences

Al Hasani, Nadia, Ph.D., University of Pennsylvania, 1990; Associate Professor of Architecture

Al Hassan, Golley Nawar, Ph.D., Nottingham University, 1994; Assistant Professor of English

Al Homoud, Azm, Ph.D., Massachusetts Institute of Technology, 1990; Associate 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 Business Administration

Almohamad, Hussam, Ph.D., University of Paris XI, Centre d'Orsay, 1985; Associate Professor of Computer Science

Al Nashash, Hasan, Ph.D., Kent University,1988; Associate Professor of Electrical Engineering

Aouadi, Samir, Ph.D., University of British Columbia, 1989; Assistant Professor of Physics

Atiyah, Wadih, M.B.A., Ph.D., American University, Washington, D.C., 1995; Director, School of Business and Management

Ayoubi, Issam, Ph.D., Texas Tech University, 1989; Assistant Professor of Mathematics

Badry, Fatima, Ph.D., University of California, Berkeley, 1983; Professor of English and Linguistics

Bantey, Paul, B.F.A., The University of Arts, 1981; Instructor in Visual Design

Birks, Peter, Ph.D., Queensland University of Technology, 1998; Instructor of Information Systems

Blythe, Stephen, Ph.D., University of Arkansas, 1979; Associate Professor of Accounting

Boyter, Mark, M.A.T, School for International Training, 1998; Instructor in Intensive English

Buechel, Polly, M.A., TESOL, Monterey Institute of International Studies,1997; Instructor in Intensive English

Bulos, Bassim Raif, Ph.D., Columbia University, 1972; Associate Professor of Physics

Burchett, Richard, Ph.D., University of California, Riverside, 1994; Assistant Professor of Psychology

Byas, Karl, B.S., University of North Carolina,Charlotte,1990; Lecturer in Digital Media

Caesar, Judith, Ph.D., Case Western Reserve University,1976; Assistant Professor of English

Conley, Robert, M.A., San Diego State University, 1994; Instructor in Intensive English

Cook, Robert D., Ph.D., University of California at Los Angeles, 1967; Professor of Chemistry and Dean, College of Arts and Sciences

Dahm, Bob, M.A., Syracuse University, 1998; Assistant Professor of Computer Design

Donegan, Mary Lou, M.A., Education Tesol Certificate, University of California, Berkeley, 1993; Instructor in Intensive English

Driscoll, Tina Joyce, M.A., University of Warwick, 1997; Instructor in Intensive English Program

Ekholm, Dene, M.B.A., Fairleigh Dickenson University, 1974; Executive in Residence

El Kadi, Hany, Ph.D., University of Alberta, 1993; Assistant Professor of Mechanical Engineering

El Keib, A Rahim, Ph.D., North Carolina State University, 1984; Professor of Electrical Engineering

Everett, Louis J., Ph.D., Texas A and M University, 1983; Associate Professor of Mechanical Engineering and Associate Dean

Fallon, James, Ph.D., University of Texas at Austin, 1980; Associate Professor of English and Linguistics

Farah, Anthony, M.A., Central Michigan University, 1994; Instructor in Information systems

Fay, Mary Ann, Ph.D., Georgetown University, 1996; Assistant Professor of History

Fernalld, Holly, M.A., Colorado State University, 1998; Instructor in Intensive English

Frasco, Gregg, Ph.D., Cornell University, 1988; Assistant Professor of Economics

French, Roderick S., Ph.D., George Washington University, 1971; Professor of Philosophy and Chancellor

Giesen, Leslie, TESOL, American University of Beirut, 1983; Instructor in Intensive English

Giesen, Martin, Ph.D., Heidelberg University, 1973; Professor of Art History and Dean, School of Architecture and Design

Gill, Jaswinder, M.Ed., University of British Columbia, 1991; Instructor in Intensive English

Glebov, Jacqulyn, M.A., Northern Arizona University, 1997; Instructor in Intensive English

Griffiths, Melody, M.Ed., TESOL, Seattle University, 1998; Instructor in Intensive English

Gully, Adrian, Ph.D., University of Exeter, 1991; Associate Professor of Arabic Language and Literature

Hajja, Mowaffaq, Ph.D., Purdue University, 1978; Professor of Mathematics

Hameed, Moh'd Salah, Ph.D., University of Manchester, 1970; Professor of Chemical Engineering

Hasan, Asad, Ph.D., Kansas State University, 1993; Assistant Professor of Physics

Hasson, Allen, Ed.D., Arizona State University, 1967; Assistant Professor of English

Hatim, Basil, Ph.D., University of Exeter, 1981; Professor of English Translation

Hawker, Ronald, Ph.D., University of British Columbia, 1998; Adjunct Lecturer in Material Culture

Henriksen, Mogens, Ph.D., P.E., Texas A and M University, 1971; Professor of Mechanical Engineering and Dean, School of Engineering

Henry, Patrick, M.A., Columbia University, 1989; Instructor in Intensive English

Hicks, John, M.A., University of Nebraska, 1982; Instructor in Intensive English

Hogan, Stephanie, M.A., Indiana University, 1996; Instructor in Intensive English

Holt, Dale, Ph.D., Claremont Graduate University, 1973; Assistant Professor of Public Administration

Jabbour, Rabih, Ph.D., University of Arizona, 1998; Assistant Professor of Chemistry

Jumean, Fawwaz, Ph.D., City University of New York, 1973; Professor of Chemistry

Kandil, Hamdy Abdallah, Ph.D., Old Dominion University, 1993; Assistant Professor of Chemical Engineering

Karake-Shalhoub, Zeinab, Ph.D., George Washington University, 1987; Professor of Information Systems

Khan, Masood M., M.S.M.E., Colorado State University, 1991; Instructor in Digital Design / Engineering

Khoury, Suheil, Ph.D., Michigan State University, 1994; Assistant Professor of Mathematics

Kuehn, Kermit, Ph.D., University of Nebraska-Lincoln, 1993; Assistant Professor of Management

Kuehn, Ralph, D.B.A., Florida State University, 1981; Professor of Information Systems

Logan, Barbara, M.A., TESOL, School of International Training,1991; Instructor in Intensive English

Lund, Kimberley, M.A., University of Arizona, 1993; Assistant Professor of Applied Arts

Magee, Craig, M.A., University of Nevada, Las Vegas, 1998; Instructor of English

Magrath, Amanda, M.A., Portsmouth University, 1998; Instructor in Intensive English

Manzoul, Mahmoud A, Ph.D., West Virginia University, 1985; Associate Professor of Computer Engineering

Mattingly, Joseph, Ph.D., University of Michigan, 1986; Associate Professor of English

Melanie, Ann, M.F.A., East Carolina University, 1995; Assistant Professor of Computer Graphics and Design

Mitchell, Kevin, M.Arch., University of Washington, 1996; Assistant Professor of Architecture

Mond, Robert, M.A., United States International University, 1990; Instructor in Intensive English

Mottola, Louis, Ph.D., University of Northern Colorado, 1972; Associate Professor of Management

Mourtada, Sabbah Nada, Ph.D., Sorbonne (Paris II), 1997; Assistant Professor of Political and International Studies

Mroczek, Judith, M.B.A. George Washington University, 1989; Instructor in Accounting and Finance

Nassir, Ghazi, Ph.D., Florida State University, 1989; Assistant Professor of English

Nay, Eric M., M.Arch., Cornell University, 1996; Assistant Professor of Architecture

Norton, Daniel, M.A., University of South Florida, 1991; Assistant Professor of English

Olson, Dennis, Ph.D., University of Wyoming, 1982; Professor of Finance

Qaddoumi, Nasser, Ph.D., Colorado State University, 1998; Assistant Professor of Electrical Engineering

Ragette, Friedrich, Ph.D., Vienna Technical University, 1971 Visiting Professor of Architecture

Randle, Jay W., M.A., North Carolina State University, 1971; Associate Professor and Head of Architecture

Sabet, Mehdi, M. Arch., Virginia Polytechnic Institute, 1978; Associate Professor of Interior Design

Sadek, Ibrahim, Ph.D., University of California, Santa Barbara, 1983; Professor of Mathematics

Sadri, Morteza, Ph.D., University of Washington, 1985; Assistant Professor in Management

Sayess, Sara, M.B.A., Wharton School, 1983; Instructor of Management

Saifi, Ali, Ph.D., University of Sussex, 1978; Associate Professor of Mathematics

Sawyer, David N., Ph.D., University of Wisconsin, 1969; Visiting Assistant Professor of Chemical Engineering

Seyouri, Diana, M.S., Boston University, 1994; Instructor in Marketing

Shannon, John, Ph.D., The Ohio State University, 1995; Assistant Professor of English

Shaw, Pelly, M.A., University of British Columbia, 1991; Instructor in Intensive English

Sheil, Philip, M.F.A., University of Alberta, Calgary, 1995; Assistant Professor of Applied Arts

Shepard, Alona, M.A., University of Georgia, 1977; Instructor in English

Siry, Israa Rifat, M. Phil., Keele University, 1994; Instructor in Physics

Skelton, Brian, M.A., Colorado State University, 1998; Instructor in Intensive English

Skinner, Samuel Ballou, Ph.D., University of North Carolina, Chapel Hill, 1970; Professor of Physics

Springer, Tracy, M.A., University of Illinois, 1994; Instructor in Intensive English

Stanton, Jennifer, M.A.T., School for International Training, 1996; Instructor in Intensive English

Stewart, Douglas, M.A., University of Nevada, 1991; Instructor in Intensive English

Switzer, Iris, M.A.T, School of International Training, 1998; Instructor in Intensive English

Tabsh, Sami W., Ph.D., University of Michigan, 1990; Assistant Professor of Civil Engineering

Taylor, Dawn, M.A., Southeast Missouri State University, 1996; Instructor in Intensive Englis

Techel, Florian, M.Arch., Ball State University, 1991; Assistant Professor of Digital Design

Tucker, Lewis R., Ph.D., Penn State University, 1975; Assistant Professor of Marketing

Van Wyk, Dirk, M.A., University of Calgary, 1970; Associate Professor of Visual Communication

Vinson, Michael, Ph.D., University of Chicago, 1991; Assistant Professor of Physics

Vlaun, Carol, M.S. TESL State university of New York at Albany, 1983; Instructor in Intensive English

Walker, Peter, Ph.D., University of Lancaster, 1970; Professor of Mathematics

Wallace, Noelle, M.A., University of California, Davis, 1987; Instructor in Intensive English

Weathers, Michelle, M.A., University of Southern California, 1987; Instructor in Intensive English

Weiss, Gregor, M. Arch., University of California, Berkeley, 1984; Associate Professor of Architecture and Design

Weston, Cara, M.A., University of British Columbia, 1995; Instructor in Intensive English

Willoughby, John, Ph.D., University of California, Berkeley, 1985; Associate Professor of Economics

Wilson, Deborah, M.A., TESOL and French, School for International Training, 1981; Instructor in Intensive English

Yafawi, Mahmoud, M.A. English Literature, American University of Beirut, 1997; Instructor in Intensive English

Zoubi, Taisier, Ph.D., University of North Texas, 1992; Professor of Accounting

Zsargo, Rita, M.A., School for International Training, 1996; Instructor in Intensive English

STUDENT RESPONSIBILITY FOR CATALOG INFORMATION

Students are held individually responsible for the information contained in this catalog. Failure to read and comply with faculty and University regulations will not exempt students from whatever penalties they may incur.


HE AMERICAN UNIVERSITY OF SHARJAH

Admissions, Registration & Degree Programs

- Admissions
- Registration
- University Degree Requirements
- University Graduation Requirements
- Non-degree Study
- Audit

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 the student's success in the degree programs.

The Office of Admissions and Registration 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 and Registration
P.O. Box 26666
Sharjah, United Arab Emirates
Website: www.aus.ac.ae
E-mail: registration@aus.ac.ae

Admission is valid 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 considered upon request for the following semester only.

University Divisions and Degree Programs

The **College of Arts and Sciences** offers:

- Bachelor of Arts degrees (B.A.) in:
  - Arabic Language and Literature
  - English Language
  - English Literature
  - Public Administration
  - Translation
- Bachelor of Science (B.S) in:
  - Computer Science

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

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

The **School of Business and Management** offers a Bachelor of Science in Management Information Systems (B.S.M.I.S.) and a Bachelor of Science in Business Administration degree (B.S.B.A.) with concentrations in:

- Accounting
- Finance
- Management
- Management Information Systems
- Marketing

The **School of Engineering** offers programs leading to the degree of Bachelor of Science in the following degree programs:

- 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.)

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
- TOEFL scores
- A non-refundable application fee of Dirhams 150 or 42 US Dollars

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.

Admissions Requirements

To be considered for admission as a first year (Freshman) student, a candidate must hold a recognized secondary school certificate and pass the International TOEFL with a minimum score of 173.

Secondary 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, the School of Business and Management and all majors in the School of Architecture and Design except for Architecture.

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.

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 as 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, two subjects at the A-level and five at the O-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, the Lebanese Baccalaureate Part II, the French Baccalaureate (II) and the German Abitur entitle their holders for consideration for admission with Freshman status.

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

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.

Proficiency Tests

Test of English as a Foreign Language

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 at the university.

Students who enter the program at level 001 must complete two requirements by the end of their first semester. They must attain a 97 on the TOEFL, and they must complete the semester with a grade of C (2.0) or higher. Failure to do so will result in dismissal from the program.

Placement Tests

All applicants to the first year 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 test are required by the different majors. Depending on their major, students must take the placement tests according to the chart below:

Major	English	Eng'g Math	Bus. Math	Physics	Computer
Engineering (any major)	yes	yes	no	yes	no
Business (any major)	yes	no	yes	no	yes
Architecture/Interior design	yes	yes	no	no	optional
Multi-media/ Visual Communication/ Heritage Management	yes	no	yes	no	no
English, Arabic & Translation	yes	no	no	no	optional
Computer Science	yes	yes	no	yes	yes
Public Administration	yes	no	yes	*	yes
Undeclared Major	yes	*	*	*	yes

**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.

- Transfer from one department to another in the same school or college at the university.
- Transfer from the school or college to another within the university.
- 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 Admissions and Registration 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 including his/her transcript of record. The deadline for submitting applications is the same as that for new applicants.

Applicable credits may be granted for courses that are required for the new major.

3. Transfer from other institution 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 this university.
- 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 secondary 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.)

Transfer applicants may be given transfer credit for courses required in their majors if they obtained grades of not less than B 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 Admissions and Registration. 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.

Admission of University Employees

Employees of the American University of Sharjah who meet the minimum admissions requirements and received at least the minimum scores necessary on the English proficiency test and on other required tests are given admission by the Director of Admissions and Registration at the university as part-time students. However, prior to their admission, they must secure the permission of their immediate supervisor in the unit in which they are employed. The maximum course load allowed per semester for this category of students is 3 credits.

Registration

Orientation Program

Prior to registration, the university 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.

Registration

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

Registration involves three main steps:

- Advisors' consultation
- Selection and registration of courses
- 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 the Director of Admissions and Registration before registration begins.

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.

The selection of courses must be undertaken initially by the registrants themselves. During this stage they prepare drafts of their semester schedule and present it for discussion with their respective advisor. A special form for this purpose is provided by the Office of Admissions and Registration. 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 to meet with their advisor:

- The Letter of Admission
- Identity card or passport
- Draft of their semester schedule

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:

- Cashiers checks
- Certified personal checks on local banks
- Cash
- Credit Cards

Deferment of Fees

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

- A letter 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 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.

Credit Hour and Residence Requirements

All bachelors degrees require completion of at least 120 credit hours (140 in engineering programs and 170 in architecture) of course work. At least 45 of the last 60 must be completed in residence at the American University of Sharjah. 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.

Grade Point Average

Students enrolled in a degree program must maintain an overall grade point average of at least 2.00 on a scale of 4 (a C average) in order to remain in good standing to graduate.

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 (2.00) or better is required for each major, major related or minor course. Course grades lower than C (2.00) in the major will have to be repeated or an equivalent course will need to be taken to satisfy the major requirement involved.

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 have the option of constructing 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.

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 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 school/college 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 adviser 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.

A grade of C (2.00 GPA) or better is required for each course used to satisfy the requirements of the minor.

Specific course requirements for minors are listed under departmental programs. Students should consult their advisers and/or the department about the procedure for declaring a minor. Minors are noted as comment on the student's permanent record (transcript) at the time of graduation, but will not appear on the diploma.

University Graduation Requirements

Every student must successfully complete the following requirements to graduate:

- *Arabic Language and Culture Requirement*
- *English Language Competency*
- *Mathematics and Statistics Requirement*
- *Computer Literacy and Information Access Requirement*
- *Oral Communication or Dramatic Expression Requirement*
- *Science Requirement*
- *Humanities Requirement*
- *Social Science Requirement*

Arabic Language and Culture Requirement

All students must satisfy the Arabic language and culture requirement by passing with a C grade (2.00) or better any one (1) of the following Arabic courses:

- ARA 100 Arabic for Non-Native Speakers
- ARA 101 Readings in Arabic Heritage I
- ARA 102 Readings in Arabic Heritage II
- ARA 103 Composition for Native Speakers of Arabic
- ARA 201 Arabic Literature in Translation
- ARA 204 Early Islamic and Umayyad Poetry
- ARA 206 Modern Arabic Prose
- ARA 304 Modern Arabic Poetry
- ARA 401 Literary Criticism

Students who transfer to the American University of Sharjah may also satisfy the requirement in the following way:

Transferring 3 hours of acceptable college level Arabic credits with a grade of C or better. Arabic course credits acceptable for transfer must be approved by the chair of the Arabic Department.

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 in all their courses.

All matriculating students must take the English Placement Test to determine which COM course they are to be placed into. To graduate, all students must satisfy the English language competency requirement by completing, with a C grade (2.00) or better, 12 credits in Communications/ English courses. Successful completion of a course occurs if, and only if, a grade of C or higher is attained.

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/ENGL courses by the end of their sophomore year.

The English Language Competency requirements may also be satisfied through examination or through a combination of examination and course work with the following results:

- An Advanced Placement English Test score of 4 or 5 and passing an additional 9 credit hours of Communication courses at the 200 level or higher with a C grade (2.00) or better.
- A CLEP (College Level Examination Program) College Composition exam score of 75% and passing an additional 6 credit hours of

Communication courses at the 200 level or higher with a grade of C (2.00) or better.

Students who transfer to the American University of Sharjah may also satisfy the requirement in one of the following ways:

- Completing the CLEP College Composition exam with a score of 75% and passing an additional 9 credit hours of Communication/ English courses at the 200 level or higher with a grade of C (2.00) or better.
- Transferring up to 3 credit hours of acceptable Communication credits and passing an additional 9 credit hours of Communication/ English courses at the 200 level or higher with a grade of C (2.00) or better.
- Transferring 6 credit hours of acceptable Communication credits and taking an additional 6 credit hours of Communication/ English courses at the 200 level or higher.

Mathematics and 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 (Sophomore) Year.

Students must satisfy the Mathematics and Statistics requirement by passing with a grade of C (2.00) or better:

- STA 201 Introduction to Statistics and one (1) of the following courses in Mathematics:
  - MTH 100 Fundamentals of Logic and Geometry
  - MTH 101 Mathematics for Business
  - MTH 103 Calculus I
  - MTH 111 Mathematics for Architecture

Students enrolled in professional curricula that integrate the theory and application of statistics may satisfy the statistics requirement through successful completion of designated courses offered by one of the professional schools. Students who elect to complete the requirement in this way should first verify with the Registrar that the alternative course is acceptable. Periodic assessments will be made to validate that student learning outcomes in the designated courses are at least equivalent to those attained by completion of STA 201. Students may also pass the Mathematics and Statistics requirement by passing the respective Mathematics and Statistics competency exam or with an AP standing.

Computer Literacy Requirement

All American University of Sharjah students must be computer literate and know how to access information through digital technology. Students must satisfy the Computer Literacy and Information Access Requirement by passing CMP 101 Computer Literacy (1 credit hour), CMP 103 or DES 100 with a grade of C (2.00) or better. Students may receive a waiver for CMP 101 by passing a university-administered computer skills placement test. Students may also fulfill the computer literacy requirement by passing one or more courses from a list of approved courses in which information technology is integrated. The list of courses approved for this purpose is on file with the Registrar. The university will conduct regular assessments of students who take these courses to ensure that the computer literacy standard is met by all graduates.

Oral Communication Requirement

American University of Sharjah graduates are expected to be well-rounded students who are likely to become leaders in their communities. In preparation for their future role in business, government or non-governmental agencies and in their communities, they will be required to acquire skills in public speaking, debating, dramatic expression and other forms of public communication. Students must satisfy the Public Speaking requirement by passing with a grade of C (2.00) or better:

- COM 208 Public Speaking
  OR COM 209 Dramatic Expression

Science Requirement

All American University of Sharjah 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 (2.00) or better:

- CHM 101 General Chemistry I
- CHM 102 General Chemistry II

OR CHM 103 Chemistry for Everyday Life
- PHY 100 Conceptual Physics
- PHY 101 General Physics I
- PHY 102 General Physics II
- PHY 103 Astronomy
- PHY 104 Physics for Architecture
- CVE 272 Structural Principles

General Education Requirement

Students may satisfy the General Education Requirement by completing at least 12 credit hours or four (4) courses in the Humanities and Social Sciences curricula.

Six credit hours must be taken from the Humanities set and six from the Social Sciences set:

Humanities
- Arabic Literature
- Cultural Studies
- English Language
- English Literature
- History
- History of Material Culture
- Philosophy
- Translation

Social Sciences
- Anthropology
- Economics
- Political Science
- Psychology
- Sociology

Non-degree Study

Non-degree status is the designation used for students who are enrolled in credit courses at the American University of Sharjah and 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 & Registration on the dates assigned for regular full-time students. An applicant should hold a secondary school certificate and get the approval of the pertinent dean or director.

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 Admissions and Registration. Information on university degree programs and non-degree programs is available at the Office of Admissions and Registration. Part-time, non-degree students will be given access to computer laboratories but not a computer account number. They would 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 2.00 GPA.

Transferring from Non-degree to Degree Status

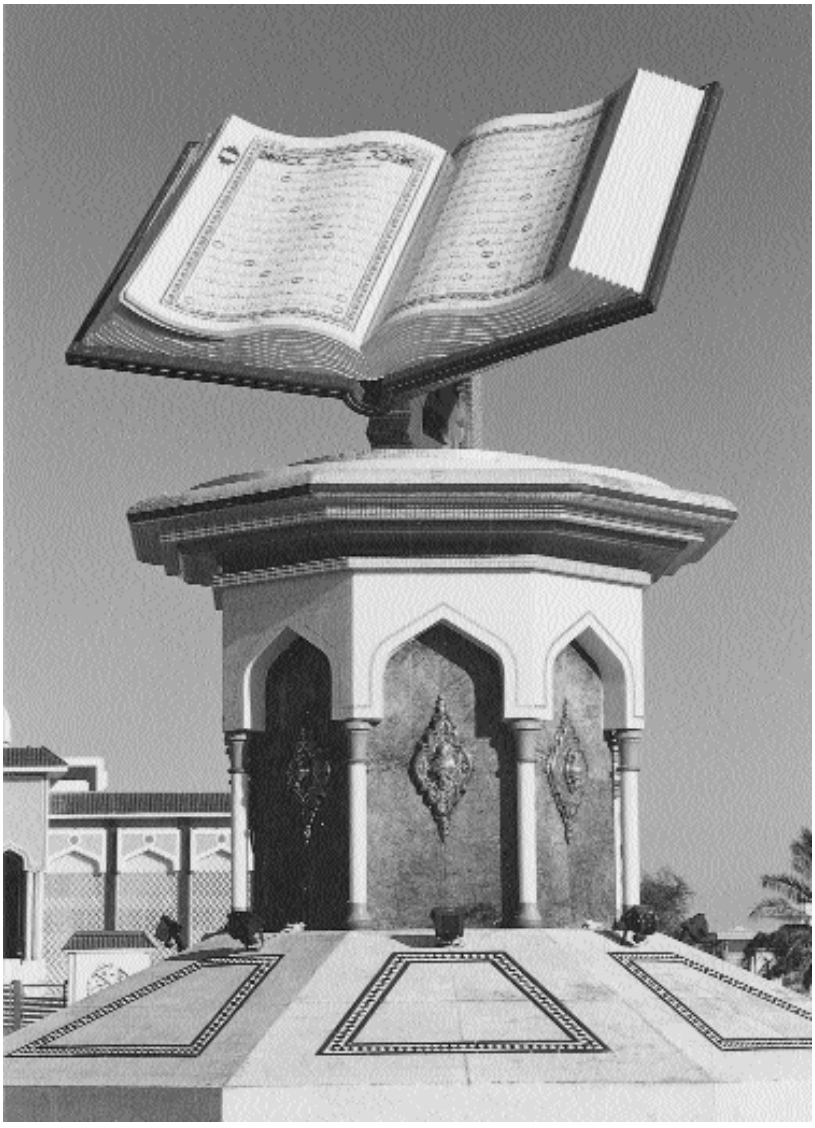
Students wishing to transfer from non-degree status to degree status may apply to have their non-degree credit hours applied toward a degree program. To apply to a degree program, students must have completed 15 credit hours with a cumulative GPA of 2.0 and submit the appropriate application forms and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

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. An auditor is not required to take active part or to pass examinations. A student who takes a course as an auditor may not repeat it later for credit. 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 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.



Academic Regulations

- Academic Advising
- Academic Policy
- University Honors and Awards
- Student Academic Integrity Code

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, but students have the responsibility 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 taste.

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 110 Survey of English Literature I and ENG 111 Survey of English Literature II.

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 consider 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 such 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 classes, ordinarily classes meet three days a week in 50-minute sessions. The university operates on a five-day schedule, from Saturday through Wednesday. Thursday and Friday are the weekend days.

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. Nonrecurring 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 years required 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

Credit Hours Completed	*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 continue on probation beyond one semester may carry a maximum load of 12 credits in the next one.

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.

Special and Part-Time Students

The category of part-time students is restricted to the following (approval of the Director or the academic advisor is required):

- American University of Sharjah staff members who are working for a degree
- Those who need fewer than 12 credits to complete work for an undergraduate degree
- Those who are granted permission by the student's dean for health or family reasons
- Those who are enrolled as non-degree students

Academic Policy

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	Less than Satisfactory
D	equals a grade of 1.00	Poor
F	equals a grade of 0	Fail
WF	equals a grade of 0	Administrative Withdrawal Fail

The grade of *WF* is assigned by the instructor or the dean in lieu of an F when the student never attends class or stops attending the class rendering assessment of academic performance impossible.

Grades not calculated in the Grade Point Average:

I	Incomplete
IP	In Progress
AUD	Auditor; No credit
P	Pass
W	Withdrawal
WP	Administrative Withdrawal without a penalty
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. Teachers will provide students with written statements on the syllabus of their policies with respect to absences.

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 class.
- Three occasions of lateness count as one absence. Lateness is defined by the instructor.
- In the event a student misses more than 10% of the sessions in a class for any reason, the instructor will inform the student's dean who will issue a warning letter to the student with a copy to his/her parents and the instructor.
- Once the student has missed an additional 5% of the class sessions after the warning, the instructor, with the approval of the dean, will initiate withdrawal of the student from the course. A grade of WF will be entered on the student's permanent record and will be calculated in the GPA.

Instructors are to keep attendance records and to draw the students' attention to attendance requirements noted in the course syllabus. The specific application of the attendance guidelines is at the instructor's discretion.

Although their are no excused absences, doctor's certification of a serious illness should be brought to the attention of the university physician who will inform the Office of Admissions and Registration (OAR). The OAR staff will then contact the student's instructors to inform them of the expected length of class absence.

Incomplete Grades and Make-Up Examinations

The work for a course must be completed on the day when the semester ends. No incomplete grade or 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 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.

Placement on Academic Probation

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 will 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 (2.00 GPA).

The load of a full-time student who is on probation shall not be less than 12 or more than 15 credit hours.

Removal of Probation and Dismissal

Probation will be removed at the end of any semester in which the student passes in all courses and attains a cumulative GPA of 2.00.

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 2.00 or whose average in any semester falls to 1.00 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

For raising one's average or meeting 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 twice. However, to take the same course for a third time, the student needs the approval of the relevant faculty departmental administrative committee. 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 records. Students interested in dropping or adding courses should consult first with their respective advisors who will then report authorized changes to the Office of Admissions and Registration.

Withdrawal from Courses

Students are permitted to withdraw from courses after submitting the approriate withdrawal form. However, maintaining a minimum of 12 credits is required. Withdrawal from courses must occur no later than the end of the 6th week of classes. A Grade of W will be recorded in the transcript for the course from which the student has withdrawn.

As of the 7th 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 for justifiable reasons, the following refund schedule will be applied:

Before the first day of classes	90% of fees
During the drop and add period	50% of fees
After the drop and add period	zero

Readmission after Dismissal

When, in accordance with university regulations, a student is dropped, 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 must also approve the request.

The visited 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 Admissions and Registration 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 Office of Admission and Registration. Transcripts will be released on the signed request of the student concerned. The university will only issue 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. They 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 of the missing language 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 Admission and Registration during the registration period of the last expected term of study. Only after an application for graduation has been filed can the Office of Admission and Registration 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 applied 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 and 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

Each school or college 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 3.50 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. 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:

A. 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 without using quotation marks - a distinctive name, a phrase, a sentence, or an entire passage or essay. It may also involve misrepresenting the sources that were used. The issue of plagiarism applies to all student assignments.

B. 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 unauthorised 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.

C. Dishonesty in Examination 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.

D. 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 classes. 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.

E. Deliberate Falsification of Data

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

F. Interference with Other Students' Work

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

G. Copyright Violations

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

H. 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

A. 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 or director 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 has 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.

B. 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 or director of the school or college in which the alleged violation has occurred.

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 director (or their appointed designee) of the college in which the offense has occurred. The dean or director will notify the student's dean of the offense, if the student is enrolled in another college. Through this process, the university can monitor multiple occurrences of such errors of judgment by particular students.

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 dishonesty. The report should be supported by such documentation as is appropriate and handed to the dean or director (or their appointed designee).

b. The dean or director (or their 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 director (or their appointed designee) will also notify the chair of the department or unit in which the offense occurred and the student's dean or director (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. As and when appropriate, the dean or director (or their 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 director (or their 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 or director may request a meeting with the student at any time.

Other Adjudication Issues

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

b. If the student fails to attend the scheduled meeting, the time and place of which have been made known in advance to him or her, college may hear the case in the student's absence or move for a continuance.

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

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

C. Penalties

1. Students are advised that violations of the Academic Integrity Code will be treated seriously, with special attention to repeat offenders. In assigning a penalty, the dean or director will take into account both the seriousness of the offense and any particular circumstances involved. After a second determination of guilt is established through formal review, a student may be suspended or dismissed.

2. 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 for the course in which the offence occurred.

   e. 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.

   f. 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.

   g. 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.

3. Penalties (a) - (c) are levied by the dean or director hearing the case only with the concurrence of the faculty member bringing the charge. Penalties (d) - (g) are levied by the dean or director hearing the case only with the concurrence of the student's dean or director. If consensus cannot be reached, the Vice Chancellor for Academic Affairs, or his/her representative will adjudicate.
4. If the penalty levied is (f) or (g), the dean or director of the college or school to which the student belongs will take the appropriate academic action. Disciplinary actions (e) - (g) 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.
5. 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.

D. Notifications and Appeals

1. The dean or director (or their appointed designee) will notify the student in writing of the finding 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 or director if the student is a member of another major teaching unit.
2. In cases concerning notation to the permanent record [penalties (e) - (g) in 2. c 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.

E. Suspension and Dismissal

The decision as to whether suspension or dismissal is appropriate in a given instance will necessarily depend on the circumstances of each case and usually on the total academic record of the student involved.

1. Suspension is effective for not less than the session in which 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 or director when the original action was implemented.
2. Dismissal is a penalty invoked in cases of serious infraction 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.
3. 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.

F. 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 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.

Tuition and Expenses

- **Tuition Fees**
- **Late Registration Fees**
- **Student Housing Fees**

Tuition Fees For Academic Year 1999-2000

- College of Arts and Sciences
  Dhs. 35,000
- Intensive English Program
  Dhs. 35,000
- School of Business and Management
  Dhs. 40,000
- School of Engineering
  Dhs. 40,000
- School of Architecture and Design
  Dhs. 40,000

Student Activities Fee

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

Other Costs and Fees

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

Late registration is permitted under special circumstances and with the permission of the advisor. An additional fee of Dhs. 200 is charged.

Student Housing Fees

There are four campus residence halls for men and two for women. Students who secure visas to the United Arab Emirates through the University and whose parents do not reside in Sharjah are required to reside on campus. For others, residence on campus is optional. The housing fees are as follows:

Private (Single occupancy with private bath and kitchenette)	Dhs. 12,500 per year
Semi-Private (A private room with a shared bath and kitchenette)	Dhs. 10,000 per year
Sharing (Double occupancy with a shared bath and kitchenette)	Dhs. 6,300 per year
Single (Double occupancy with a common bath - for men only)	Dhs. 6,300 per year
Double (Double occupancy with a common bath - for men only)	Dhs. 4,000 per year

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

Office of Student Affairs

- Dean of Students
- Services and Facilities
- Student Activities
- Residential Life
- Student Code of Conduct

Dean of Students

Dean of Students

Aqil Kazim

Assistant Dean for Woman

Moza Al-Shehi

The Office of Student Affairs is responsible for the welfare of students at the American University of Sharjah. This office is primarily in charge of cultivating an environment that enriches and supports student development at the university. Its objectives are mainly advanced through nonacademic and extracurricular activities.

The Office of Student Affairs assists students in developing and maintaining positive self-esteem, individual assertiveness skills, social awareness and self-discovery. Its goal is to enhance the positive and proactive attitude of each student toward his or her society and the world. The Office also provides a friendly environment that supports and welcomes international students on campus. In short, the Office of Student Affairs creates a campus environment sensitive to student concerns and experiences.

The university is a community of individuals working together to create the ultimate conditions for learning. The relationship that governs the interaction of those on campus is primarily educational and is guided by a sense of mutual respect and responsibility. Each individual, as a voluntary associate, is expected to honor his or her responsibilities and commitments. The legally established principles, rules and regulations of the university constitute the basic standards and guidelines for conduct on and off campus. They are also commitments that all are expected to respect, honor and promote when choosing to join the community. The Office of Student Affairs enforces the rules and regulations concerning student life at the university and has the moral and legal responsibilites of upholding and promoting the highest of 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.

To ensure such high standards, the university reserves its right, through due process, to take disciplinary action against students. Such action will be taken if a student violates institutional standards of behavior or academic regulations and procedures.

Role of the Dean and Office

The Dean of Students serves as the head of the Office of Student Affairs and collaborates with the campus academic units and officers of the university to promote positive student development. The role of the Dean of Students and the Office of Student Affairs is to ensure that a variety of events and activities are implemented for students. These student programs are designed to promote students' moral, spiritual, social, cultural and physical development through established objectives. These specific objectives are:

- To provide enrichment experiences for all students by developing student programs, encouraging student participation and providing students with opportunities to develop skills in leadership and responsibility.
- To develop and stimulate interaction among students, faculty and staff in areas of common interest.
- To assist in providing a system of counseling.
- To ensure that housing, food and healthcare services are commensurate with the needs and well being of the students.
- To organize social, cultural and entertainment activities for the students and the community.
- To assist students from abroad by providing a comprehensive orientation program.
- To handle cases of student misconduct and chair the hearing board for misconduct.

Services and Facilities

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

Student Employment

Students at the American University of Sharjah have the opportunity for employment at the University. Students may work a maximum of 10 hours per week and are paid on a biweekly schedule. Interested students may seek information regarding employment from the Office of Student Affairs.

Disability Support Services

The campus of the American University of Sharjah is designed with ramps and elevators for the disabled. The staff of the Office of Student Affairs works with persons having temporary or permanent disabilities to promote their full participation in academic programs and campus activities.

Counseling and Educational Services

The counseling, learning and career center promotes the academic, social and emotional well being of students so they can stay in school, succeed and graduate. Counseling services supports students personal and educational development by helping them gain the tools and insights necessary to thrive emotionally, socially and intellectually. Learning services provide instruction and services for developing skills, strategies and behaviors that improve learning outcomes. The primary purpose of career services is to aid students in developing, evaluating and effectively initiating and implementing career plans. These services include assessment and counseling, consultation and teaching. Professional confidentiality is strictly maintained in all student counseling.

AUS Sports & 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 U.A.E sports through athletic championship, 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:

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

AUS Sports Complex

The Sports Complex facilities are as follows

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

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

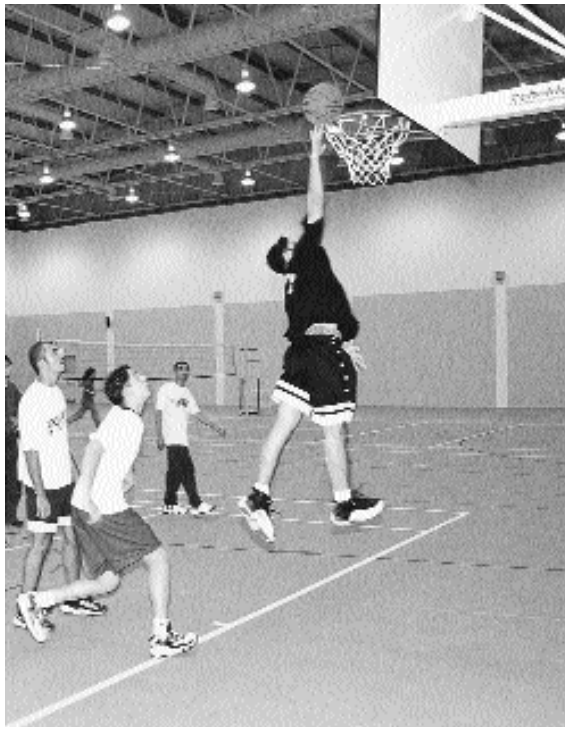
Fitness Center: the 15m x 15m room features both free weights and a wide range of exercise machines.

Exercise Hall: this room includes aerobics equipment, also to be used for self-defense events.

Squash Courts: two courts.

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

Gymnastic Hall: this room includes gymnastic equipment, mats, bars and others.



Student Activities

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. A Student Union Charter was drafted by students and then approved by the Administrative Committee of the Board of Trustees in 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.

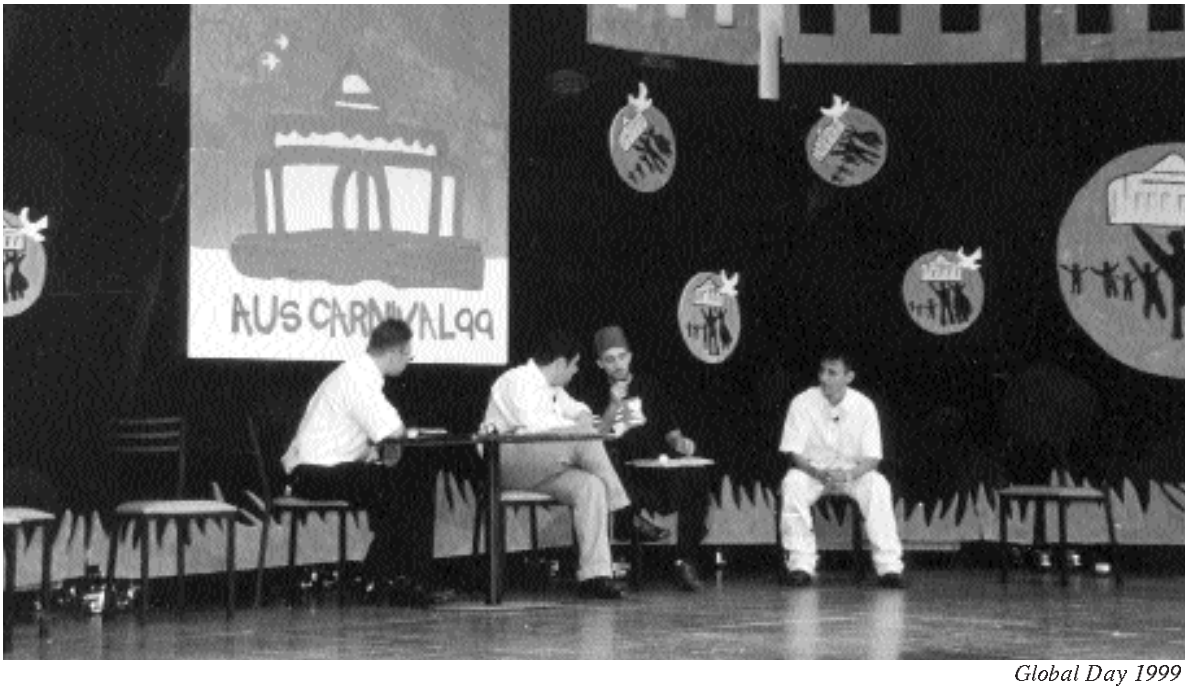
Student Clubs & Organizations

Students enhance and enrich their collegiate academic experience by becoming involved in student-sponsored clubs and organizations. The Office of Student Affairs supports numerous student clubs and organizations on campus by assisting and advising them with program planning and implementation. These clubs and organizations help students to develop and enhance their talents. They span a wide range of interests that includes sports, music, literature, recreation, culture & social issues.

These clubs are geared towards serving the student population by helping local and international students adjust to the university atmosphere. They are also aimed at enriching the diverse student population with the local culture and traditions of this country.

AUS has the following registered clubs as of the Spring Semester 1999:

- Environmental & Humanitarian Club
- Publishing Club
- Movie Club
- Computer Club
- Arts & Architecture Club
- Media Club



Global Day 1999

- Drama Club
- Music Club
- Heritage Club
- Photography Club
- Islamic Cultural Club
- Comedy Club
- Festivities Club
- Adventure Club
- Women's Club
- Business Club
- Literary Club
- Poetry Club
- AUS Radio Station (E.A.R.S.) Club
- Festivities Club
- International Community Club
- Leopard Club
- Scuba Diving Club
- Engineering Council
- Sculpture Club

All students are encouraged to form clubs that can promote their interests and hobbies and shape their extra curricular activities.

Student Orientation

The Office of Student Affairs conducts a student orientation day for new and returning students at the beginning of each semester. The AUS Chancellor, deans and directors introduce the students to the AUS policies and regulations and the various majors available. Tours around campus are also organized. Older students play a major role during the orientation program.

Media

Student publications represent and serve the student population at AUS. These publications can introduce students to the world of journalism, editing and writing. Students can contribute to the following AUS publications:

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. The reason for its present fame is, sadly, that it is on the brink of extinction. The Leopard Newspaper is an official biweekly university newspaper and a voice of

AUS students. All students are encouraged to contribute to the newspaper. They can write articles, poems and features, conduct interviews and submit animated characters to the paper.

Realms: It 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.

Student Center

The Student Center is located below the student cafeteria and has several meeting rooms, the student lounge, the Leopard Mini Mart, activity rooms and a multi purpose room. The student lounge is furnished to provide students with a relaxing atmosphere and equipped with two televisions and a sound system. The activity rooms are equipped with billiard and snooker tables and table tennis. The multipurpose room facilitates various student activities like movie nights, symposia and speeches.

The Student Center provides diverse social, cultural, recreational and educational programs and activities for the community of the American University of Sharjah. The Student Activities & Student Center assist students and student organizations in designing, building and maintaining educational environments that will enhance their personal growth and facilitate the attainment of their organizational purpose.

The main objective of the Student Center is to meet the needs of AUS students through a variety of programs and services to facilitate their success and adjustment to the University. These programs and services include organizing conferences, workshops, discussion groups, film series in addition to the coordination with Student Government and Student Clubs.

Student Employment: The Student Affairs Office keeps a student employment data bank. This process involves the filling of a request for employment and an interview with the candidate. The student record will be added to the student employment data bank for consideration when the Student Affairs receives request for student employment by any of the AUS departments or from private and public institutions.

Community Services

The AUS Community Services is the link between different groups of students and different needs in the society. It is a way to show students the value of serving others and the community by involving them personally in social events that can enrich their life experiences.

The role of Community Services is to give students an opportunity to apply academic knowledge in real-life settings, to broaden their understanding of the employment market, and to recognize their link to and responsibility towards their local community and their society.

Career Development Programs (CDP)

The American University of Sharjah has recently begun a career preparation program that aimed at giving AUS students breadth and specialization through elaborating their academic knowledge with field experiences.

The career program will provide students, with training opportunities offered by a qualified and professional staff of government, private, local and foreign institutions. More than 150 students have enrolled in the Career Development Programs for the spring 1999 Semester and the CDP are targeting the enrolment of 500 students for next fall.

Residential Life

The AUS Residence Halls are a great place for students to meet and get to know each other. Some students travel thousands of miles from their family homes, the people they meet and live with will temporarily replace their families, and might become their life long friends. At AUS students will go through approximately four years of personal growth and learning. The dorm experience will help by teaching them lessons in independence and tolerance towards each other. It will perhaps be one of the few chances of being exposed to so many different cultures and backgrounds in one place.

In addition, the dorms offer students all kinds of resources and facilities such as, study rooms, computer labs, dining areas, recreational areas and TV rooms amongst other things. Moreover, living on campus means making the most of what AUS has to offer, such as sports and dining facilities, libraries and laboratories, as well as the many activities that happen throughout the days.

The University also offers a convenient bus shuttle service between the dorms and other areas on campus. Transportation facilities are also available for the students from campus to the cities of Sharjah, Dubai, Abu Dhabi and Al Ain.

To ensure the security of all students, all dorms are protected by patrolling security and have dorm supervisors there for the safety and comfort of all the residents. The men's and women's dorms are segregated and have curfew hours that all residents are expected to abide by. All dorm residents are expected to spend all their nights there, unless they have a written permission from their parents.

A new addition has been introduced to the dorms, in the form of Student Dorm Associations. These are committees made up of dorm residents that help organize and implement various dorm activities and coordinate between the dorm residents and the administration.

Student Code of Conduct

Members of the American University of Sharjah community live, work, and study together in an institutional framework in pursuit of truth and the dissemination of knowledge. Freedom of inquiry and intellectual endeavor can flourish only in a community in which the participants are united in their mutual search for intellectual growth.

If the purpose of the university and its community are to be realized and advanced, the rights, responsibilities, and reasonable standards of conduct essential to a university community must be set forth. (The full text of the student code of conduct is available from the Office of Student Life.)

Rights and Responsibilities

1. 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.
2. No disciplinary sanctions may be imposed upon any member of the university community under authority of the university without fair and due process provided.

3. 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

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, 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 contract, 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 in 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 duty.

o. Distributing any printed materials (including in electronic form) in the name of the American University of Sharjah, or from any registered organization on campus without the prior approval of 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. To abuse computer equipment, (e.g. computer stalking and harassment, stealing, deleting information, and internet theft or knowingly introducing a computer virus) or to gain unauthorized access to computer resources on campus. (See university policy on the abuse of Internet Technology)

w. To tamper with telephone equipment, or to falsely use telephone credit cards or otherwise fraudulently use campus telephones.

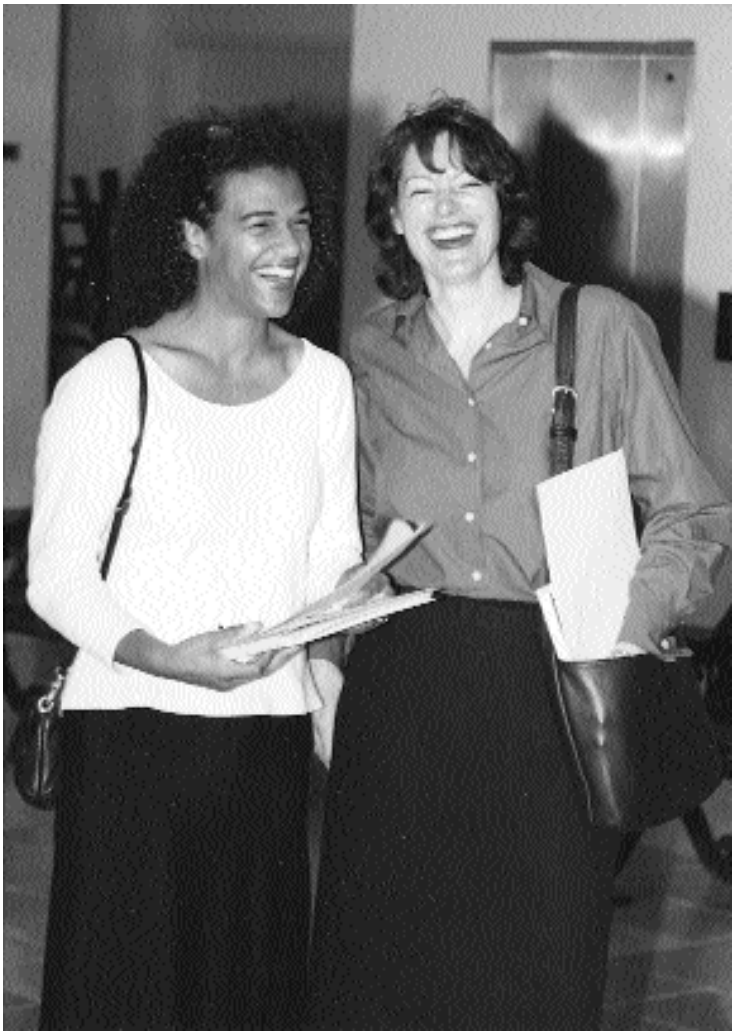
x. Failing to comply with direction of university officials acting in performance of their duties.

y. Violations of traffic laws including reckless driving and parking in unauthorised spaces.

z. Violations of Sharjah or UAE law.

Regulations for Student Conduct in American University of Sharjah Residence Halls

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**.



College of Arts and Sciences

Dean and Faculty

Dean

Robert D. Cook

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 hail 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

Fatima Badry (English and Linguistics)
Mowaffaq Hajja (Mathematics)
Basil Hatim (English and Translation)
Fawwaz Jumean (Chemistry)
Ibrahim Sadek (Mathematics)
S. Ballou Skinner (Physics)
Peter Walker (Mathematics)

Associate Professor

Zayid Abdulhadi (Mathematics)
Reda Alhajj (Computer Science)

Yussef Abu-Muhanna (Mathematics)
Hussam Almohamad (Computer Science)
Basim Raif Bulos (Physics)
James Peter Fallon (English)
Adrian Gully (Arabic)
Joseph Mattingly (English)
Ali Sayfy (Mathematics)
John Willoughby (Economics)

Assistant Professor

Husein Abdul-Hamid (Statistics)
Bassam Abu Al Foul (Economics)
Imad A. Abu-Yousef (Chemistry)
Walid Al Ahmad (Computer Science)
Afaf Badr Al Bataineh (Arabic)
Nawar Al Hassan Golley (English)
Taher Abualrub (Mathematics)
Marwan Abukhaled (Mathematics)
Ahmad Al Issa (English)
Samir Aouadi (Physics)
Isam Ayoubi (Mathematics)
Richard Burchett (Psychology)
Judith Ceasar (English)
Mary Ann Fay (History)
Gregg Frasco (Economics)
Asad Hasan (Physics)
Allen Hasson (English)
Dale Holt (Public Administration)
Rabih Elie Jabbour (Chemistry)
Suheil A. Khoury (Mathematics)
Nada Mourtada-Sabah (Political Science)
Daniel Norton (English)
Ghazi Q. Nassir (English)
John Shannon (English; Intensive English)
Alona Thaxton Shepard (English)
Michael Vinson (Physics)
Pauline Vinson (English)

Instructor

Mark Boyter (IEP)
Polly Buechel (IEP)
Robert Conley (IEP)
Mary Lou Donegan (IEP)
Holly L. Fernalld (IEP)
Leslie Giesen (IEP)
Jaswinder Gill (IEP)
Jacqulyn Glebov (IEP)
Melody Griffith (IEP)
Patrick Henry (IEP)
John Hicks (IEP)
Stephanie Hogan (IEP)
Barbara Logan (IEP)
Amanda Magrath (IEP)
Craig Magee (English)
Robert Mond (IEP)
Isra Haj Sirri (Physics)
Pelly Shaw (IEP)
Brian Skelton (IEP)
Tracy Springer (IEP)
Jennifer Stanton (IEP)
Douglas Stewart (IEP)
Iris Switzer (IEP)
Dawn Taylor (IEP)
Carol Vlaun (IEP)
Noelle Wallace (IEP)
Michelle Weathers (IEP)
Cara Weston (IEP)
Deborah Wilson (IEP)
Mahmoud Yafawi (IEP)
Rita Zsargo (IEP)

The Intensive English Program (IEP)

Director

John Shannon

English is the medium of instruction at the American University of Sharjah. Competence in that language 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.

Faculty

Instructor Sandra Aderson, Mark Boyter, Polly Buechel, Robert Conley, Mary Lou Donegan, Holly Fernalld, Leslie Giesen, Jaswinder Gill, Jacqulyn Glebov, Melody Griffith, Patrick Henry, John Hicks, Stephanie Hogan, Robert Kennedy, Barbara Logan, Amanda Magrath, Robert Mond, Pelly Shaw, Brian Skelton, Tracy Springer, Jennifer Stanton, Douglas Stewart, Iris Switzer, Dawn Taylor,Carol Vlaun, Noelle Wallace, Michelle Weathers, Cara Weston, Beth Wiens, Deborah Wilson, Mahmoud Yafawi, Rita Zsargo.

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. Placement into one of the five proficiency levels of the program is based on placement and standardized proficiency test scores.

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 below.

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.

IEP Program Organization

Level	Instruction	Self-Access	Total Time	University 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)

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 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 experi-

enced 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.

In addition, students who enter the program at level 001 must complete two requirements by the end of their first semester. They must attain a 400 on the TOEFL and they must complete the semester with a passing grade (C or higher). 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.

Arabic

Chair

Adrian Gully

The Arabic Language and Literature major provides the student with a broad knowledge of Arabic language and literature. The student will learn theories of how the language was developed and gain an appreciation of Arabic/Islamic culture. In addition, students will study critiques written in more recent times which shed new light on major classical and contemporary issues. The major covers a time span of around thirteen hundred years and examines the three main periods of Arab/Islamic culture: the medieval or classical; the neo-classical; and the modern eras. The main objective of this degree is to further student awareness of the historical value of Arabic language and literature and how they relate to the development of Arab intellectual thought and to our present society.

Faculty

Associate Professor Adrian Gully

Assistant Professor Afaf Al Bataineh

B. A. in Arabic Language and Literature

Admission to the Program

Formal admission to the major by the department requires a cumulative grade point average (GPA) of 2.00 and a GPA of 2.00 or higher in two Arabic courses.

University Graduation Requirements

A total of 120 credit hours, including:

- Forty-six to forty-eight credit hours of university requirements
- Twelve credit hours of college requirements
- Thirty-three credit hours of Arabic Language and Literature
- Twelve credit hours of related field courses
- Seventeen credit hours of free electives

College Requirements

Twelve credit hours (or four courses) from among the following:

- CSC 203 Islamic Cultural Studies I
- CSC 204 Islamic Cultural Studies II
- HIS 101 Survey of Islamic History I
- HIS 102 Survey of Islamic History II
- HIS 203 Early History of the Arabs
- HIS 204 The Modern Arab World
- PHI 202 Introduction to Islamic Philosophy
- PSY 101 General Psychology
- PSY 102 Social Psychology
- SOC 201 Globalization
- SOC 203 Arab Culture and Society
- SOC 204 Socio-Economics of Arab States
- SOC 205 UAE Society
- POL 201 Introduction to Political Studies
- POL 202 International Relations

Requirements for the Major

- ARA 101 Readings in Arabic Heritage I
- ARA 102 Readings in Arabic Heritage II
- ARA 103 Composition for Native Speakers of Arabic

Any 12 credit hours (or four courses) from among the following Arabic Language courses:

- ARA 209 Arabic Morphology and Syntax
- ARA 210 Arabic Philology
- ARA 211 Linguistic Issues in the Neoclassical Period
- ARA 212 Introduction to Arabic Socio-linguistics
- ARA 308 Introduction to Stylistics and Metrics
- ARA 309 Arabic Lexicography
- ARA 310 The Development of the Arabic Language
- ARA 311 Seminar on Arabic Language
- ARA 407 Advanced Studies in Arabic Grammar
- ARA 408 The Arabic Language and Modern Linguistics
- ARA 409 Luminaries in the History of the Arabic Language
- ARA 410 Tutorial on the Arabic Language
- ARA 411 Seminar in Arabic Language

OR any six credit hours (or two courses) from the above list plus

- ARA 412 Senior Thesis on Arabic Language (six credit hours)

And, any 12 credit hours (or four courses) from the following Arabic Literature courses:

- ARA 202 Arab-Islamic History and the History of Arabic Literature
- ARA 203 Pre-Islamic Poetry
- ARA 204 Early Islamic and Umayyad Poetry
- ARA 205 Poetry in the Abbasid Age
- ARA 206 Modern Arabic Prose
- ARA 207 Arabic Drama
- ARA 301 Classical Arabic Prose until the end of the Third Century A.H.
- ARA 302 Classical Arabic Prose from the Fourth to Seventh Century A.H.
- ARA 303 Andalusian Literature
- ARA 304 Modern Arabic Poetry
- ARA 305 Literature of the Arabian Gulf
- ARA 306 Seminar on Arabic Literature
- ARA 401 Literary Criticism from the Arab Perspective
- ARA 402 Qur'anic Studies
- ARA 403 Sufi Literature
- ARA 404 Tutorial on Arabic Literature
- ARA 405 Research Seminar on Arabic Literature

OR any six credit hours (or two courses) from the above list, plus the following:

- ARA 406 Senior Thesis on Arabic Literature* (6 credit hours)

** The senior thesis option can only be taken either on Arabic Language or Arabic Literature.*

Related Requirements

Twelve credit hours (or four courses) in related fields from among the following. Please note that at least one of the courses must be taken from each of the related areas.

English Language:

(at least one of the following courses)

- ENG 123 Introduction to Language Study
- ENG 222 Phonetics and Phonology
- ENG 226 Morphology
- ENG 234 Language in Siciety
- ENG 322 Semantics and Pragmatics
- ENG 328 Contrastive Linguistics
- ENG 334 Second Language Acquisition

English Literature:

(at least one of the following courses)

- ENG 201 Expository Writing
- ENG 207 The Beginnings of the Novel
- ENG 216 Introduction to Literary Theory and Criticism
- ENG 312 East and West
- ENG 315 Literature of our Time
- ENG 318 World Literature Today

Translation:

(at least one of the following courses)

- TRA 101 Introduction to Translation
- TRA 201 Theoretical and Practical Issues in Translation
- TRA 301 Translation Practicum I
- TRA 302 Advanced Translation

Minor in Arabic Language and Literature

A total of 18 credit hours including:

Course Requirements

- ARA 101 Readings in Arabic Heritage 1
- ARA 102 Readings in Arabic Heritage 2
- ARA 103 Composition for Native Speakers of Arabic

Any six credits (two courses) from among the following courses:

- ARA 204 Early Islamic and Umayyad Poetry
- ARA 206 Modern Arabic Prose
- ARA 209 Arabic Morphology and Syntax
- ARA 210 Arabic Philology
- ARA 211 Linguistic Issues in the Neoclassical Period
- ARA 309 Arabic Lexicography
- ARA 407 Advanced Studies in Arabic Grammar

And, any one of the following courses:

- ARA 302 Classical Arabic Prose from the Fourth to Seventh Century A. H.
- ARA 408 The Arabic Language and Modern Linguistics
- ARA 409 Introduction to Arabic Sociolinguistics
- 410 Seminar on Arabic Language

Computer Science, Mathematics and Statistics

Chair

Peter Walker

Faculty

Professor Mowaffaq Hajja, Ibrahim Sadek, Peter Walker

Associate Professor Zayid Abdulhadi, Yusef Abu-Muhanna, Reda Alhajj, Hussam Al Mohamad, Ali Sayfy,

Assistant Professor Husein Abdul-Hamid, Taher Abualrub, Marwan Abukhaled, Walid Al Ahmad, Suheil A. Khoury, Isam Ayoubi

The Department of Computer Science, Math 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 program focuses on teaching the theory,

design and application of computer science. The program prepares students to work as operating system designers, 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.

B.S. in Computer Science

The main objectives of the program are:

- 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 Program

Formal admission to the major in computer science by the department requires a cumulative grade point average (GPA) of 2.00 or better.

University Graduation Requirements

A total of at least 126 credit hours, including:

- Forty-six to forty-eight credit hours of university requirements (URE)
- Eighty credit hours of major requirements (MRE)

• To satisfy the requirement for the B.S. in Computer Science the student must successfully complete a project in Computer Science by taking CMP 495.

Requirements for the Major (80 credit hours)

The program of study for a computer science major must include all of the following requirements with grade C or better in each course:

Core Requirements (50 credit hours)

- MTH 104 Calculus II
- MTH 203 Calculus III
- MTH 221 Linear Algebra
- MTH 341 Numerical Computing
- CMP 105 C Programming
- CMP 120 Introduction to Computer Science I
- CMP 213 Discrete Structures/MTH 213 Discrete Mathematics
- CMP 220 Introduction to Computer Science II
- CMP 232 Data Structures
- COE 221 Digital Systems
- CMP 240 Introduction to Computer Systems
- CMP 310 Introduction to Operating Systems
- CMP 320 Database Systems
- CMP 334 Organization of Programming Languages
- CMP 335 Formal Languages and Computability I
- CMP 340 Analysis of Algorithms

Elective Requirements (24 credit hours)

Students should take 24 credit hours as computer science elective courses out of which 18 credit hours must be chosen from at least 3 of the following areas, approved by the student's advisor:

Computer Systems:

- CMP 315 Computer Networks
- 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 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 480 Topics in Computer Science
- CMP 490 Independent Study
- CMP 495 Project in Computer Science

The student **must** also take a minimum of two upper level Math courses of 6 credit hours in Applied Mathematics. These courses must be approved by the student's advisor.

Free Elective Requirements (6 credit hours)

A minimum of 6 additional credit hours of 200 – 400 level courses in disciplines outside the program of computer science such as: computer engineering, electrical engineering, etc. The free elective courses must be approved by the student's advisor.

Minors in Computer Science for Business and Engineering Students

Requirement for Business: MTH 102, MIS 201, CMP 105, CMP 120, and CMP 232.

Requirement for Engineering: MTH 104, MTH 203, CMP 105, CMP 120, and CMP 232.

In addition to the above requirements, students must choose any three courses of the following

Computer Science courses: CMP 310, CMP 315, CMP 334, CMP 340, CMP 440, and CMP 460.

Proposed Sequence of Study

Bachelor of Science in Computer Science

(B.S. in Computer Science)

FIRST YEAR (34 credit hours)				
Term	**Course #**	**Course**	**Credit Hours**	**Fulfills**
Fall	CMP 105	C Programming	3	CRE
	MTH 103	Calculus I	4	URE
	PHY 101/CHM101	General Physics I/General Chemistry I	4	URE
	COM XXX	Communication I	3	URE
		General Education Requirement-Humanities	3	URE
		Total	**17**	
Spring	CMP 120	Introduction to Computer Science I	3	CRE
	MTH 104	Calculus II	4	CRE
	PHY 102/CHM 102N	General Physics II/General Chemistry II	4	URE
	ARA XXX	Arabic Language Requirement	3	URE
	COM XXX	Communication II	3	URE
		Total	**17**	

SECOND YEAR (32 credit hours)				
Term	**Course #**	**Course**	**Credit Hours**	**Fulfills**
Fall	MTH 203	Calculus III	4	CRE
	CMP 220	Introduction to Computer Science II	3	CRE
	CMP 213	Discrete Mathematics	3	CRE
		General Education Requirement-Humanities	3	URE
	COM XXX	Communication III	3	URE
		Total	**16**	
Spring	CMP 232	Data Structures	3	CRE
	COE 221	Digital Systems	3	CRE
	MTH 221	Linear Algebra	3	CRE
	COM XXX	Communication IV	3	URE
	STA 201	Introduction to Statistics	4	URE
		Total	**16**	

Abbreviations: **URE:** University Requirement, **CRE:** Core Requirement, **ERE**: Elective Requirement, **FRE:** Free Elective Requirement, **ELC:** Elective

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

THIRD YEAR (30 credit hours)				
Term	**Course #**	**Course**	**Credit Hours**	**Fulfills**
Fall	CMP 240	Introduction to Computer Systems	3	CRE
	CMP 310	Introduction to Operating System	3	CRE
	CMP 320	Database Systems	3	CRE
		General Education Requirement-Social Sciences	3	URE
	COM 208/209	Public Speaking/Dramatic Expression	3	URE
		Total	**15**	
Spring	CMP 334	Organization of Programming Language	3	CRE
	CMP 335	Formal Languages & Computability I	3	CRE
	MTH 341	Numerical Computing	3	CRE
	CMP XXX	Computer Elective	3	ERE
		General Education Requirement-Social Sciences	3	URE
		Total	**15**	

FOURTH YEAR (30 credit hours)				
Term	**Course**	**Course**	**Credit Hours**	**Fulfills**
Fall	CMP 340	Analysis of Algorithms	3	CRE
	CMP XXX	Computer Elective	3	ERE
	CMP XXX	Computer Elective	3	ERE
	MTH XXX	Math Elective	3	ERE
		Free Elective	3	FRE
		Total	**15**	
Spring	CMP XXX	Computer Elective	3	ERE
	CMP 495	Project in Computer Science	3	ERE
	CMP XXX	Computer Elective	3	ERE
	MTH XXX	Math Elective	3	ERE
		Free Elective	3	FRE
		Total	**15**	

English

Chair

Fatima Badry

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 structures and functions, and to foster an appreciation for its literary tradition. 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.

Faculty

Professor Fatima Badry, Basil Hatim

Associate Professor James Peter Fallon, Joseph Mattingly

Assistant Professors Ahmed Al Issa, Judith Caesar, Christine Coombe, Allen Hasson, Ghazi Q. Nassir, John Shannon, Nawar Al Hassan Golley, Daniel Norton, Alona Shepard, Pauline Vinson

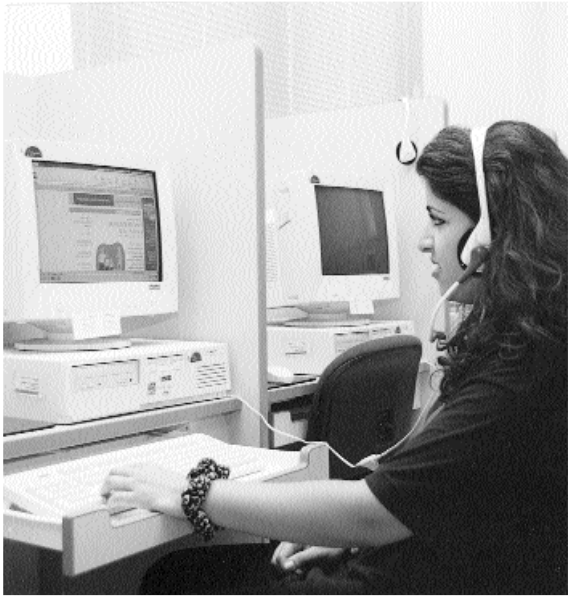
Instructor Craig Magee

The English Communication Program

The English Communication Program consists of a sequence of four graded academic English courses: COM 001, 101N, 102N, and 203 or 204; five specialized courses: COM 205, 206, 207, 210, and 211, and two oral communication courses: 208 and 209. The course that students start with is determined by an English Placement Test which all students must take once they have been admitted to the university. All students regardless of their scores on the TOEFL, SAT verbal or any other acceptable standardized test, must take the placement test to enter the sequence of English Communication courses. Successful completion of a course occurs if, and only if, a grade of C or higher is attained. Students whose grades fall below that level are required to repeat the course. Finally, all students are required to complete four courses in the Department of English as well as one of the oral communication courses (COM 208 or 209).

B.A. in English Language

Language is more than communication. It is a rule governed shared system that allows humans to communicate symbolically, to store and retrieve information from memory and to develop their own sense of identity and culture. In a sense, language opens a window into an individual's mind and expresses the cultural values of its users. A major in English Language provides students with a solid foundation in the structure of English. It also allows them to explore the relationship between language and the mind and that between language and society. Graduates of the program are prepared for further study in linguistics, electronic and print journalism and Teaching English as a foreign language, depending on their own interests and credentials.



Admission to the Program

Formal admission to the major by the department requires a cumulative grade point average (GPA of 2.00 and a GPA of 2.00 or higher in two English language courses.

University Graduation Requirements

A total of 120 credit hours, including:

- Forty-six credit hours of university requirements (URE)
- Twelve credit hours of college requirements (CRE)
- Forty-five credit hours of major requirements (MRE)
- Seventeen credit hours of free electives

College Requirements

Twelve credit hours (or four courses) from among the following:

- ARA 101 Readings in Arabic Heritage
- ARA 201 Arabic Literature in Translation (non native speakers of Arabic only)
- ARA 209 Arabic Morphology and Syntax
- PHI 201 Introduction to Philosophy
- PHI 202 Introduction to Islamic Philosophy
- POL 201 Introduction to Political Studies
- POL 202 International Relations
- PSY 101 General Psychology
- PSY 102 Social Psychology
- SOC 101 Introduction to Sociology
- SOC 202 Communication and Society

Requirements for the Major

A total of 45 credit hours, including:

- Thirty-three credit hours of English Language
- Twelve credit hours of related courses in English Literature and Translation

Course Requirements

All of the following courses must be taken:

- ENG 123 Introduction to Language
- ENG 126 History of the English Language
- ENG 222 Phonetics & Phonology
- ENG 224 English Grammar
- ENG 226 Morphology
- ENG 322 Semantics & Pragmatics
- ENG 330 Psycholinguistics
- ENG 420 Seminar in English Language

And nine credit hours (three courses) from the remaining English language courses.

Related requirements

- ENG 110 Survey of English Literature I
- ENG 201 Expository Writing *OR* ENG 214 Studies in Twentieth-Century Literature *OR* ENG 216 Introduction to Literary Theory and Criticism

And six credit hours (two courses) from the remaining literature and translation courses.

Minor in English as a Foreign Language

A total of 21 credit hours:

- ENG 123 Introduction to Language
- ENG 220 Bilingual Education
- ENG 324 Reading and writing in ESL/EFL
- ENG 334 Second Language Acquisition
- ENG 320 Theory and practice in English language teaching

And six credit hours (two courses) from the remaining English Language courses

Proposed Program & Sequence of Study

Bachelor of Art in English Language

(B.A. in English Language)

FIRST YEAR (31 credit hours)				
Term	**Course #**	**Course**	**Credit Hours**	**Fulfills**
Fall	COM 001, 101 OR 102	English Communication Skills	3	URE
	MTH 001, 100 OR 103	Mathematics for Business I Calculus I	3	URE
	CMP 101	Computer Literacy and Information Access	4	URE
	CHM 103	Chemistry and Everyday Life	3	URE
	ARA 100 OR 101	Arabic Language for Non-Native Speakers Composition for Native Speakers of Arabic	3	URE
		Total	**16**	
Spring	COM 101, 102, 203 OR 204	English Communication Skills	3	URE
	STA 201	Introduction to Statistics	3	URE
	CSC 201	Western Culture Studies	3	URE
	PHY 103 OR 100	Conceptual Physics	3	URE
	ARA 201	Arabic Literature in Translation	3	URE
		Total	**15**	

SECOND YEAR (30 credit hours)				
Term	**Course #**	**Course**	**Credit Hours**	**Fulfills**
Fall	COM 203 OR 204	English Communication Skills	3	URE
	ENG 123	Introduction to Language Study	3	CRE
		Elective	3	URE
	ENG 222	Phonetics & Phonology	3	URE
	POL 201	Introduction to Political Studies	3	MR
		Total	**15**	
Spring	COM 208 OR 209	Public Speaking/Drama Exposure	3	URE
	ENG 201	Expository Writing	3	URE
	ENG 224	English Grammar	3	MR
		Elective	3	URE
	ENG 126	History of English Language	3	MR
		Total	**15**	

THIRD YEAR (30 credit hours)				
Term	**Course #**	**Course**	**Credit Hours**	**Fulfills**
Fall	ENG 110	Survey of English Literature I	3	MR
	ENG 226	Morphology	3	MR
	ARA 209, 310	Arabic Morph & Syn/The Dev. of Arabic	3	MR
	SOC 101	Introduction to Sociology	3	URE
		Elective	3	ELC
		Total	**15**	
Spring	PSY 101	General Psychology	3	CRE
	ENG 334	Second Language	3	MRE
	ENG 322	Semantics & Pragmatics	3	MRE
	TRA 101	Introduction to Translation	3	URE
		Elective	3	ELC
		Total	**15**	

FOURTH YEAR (30 credit hours)				
Term	**Course #**	**Course**	**Credit Hours**	**Fulfills**
Fall		Elective	3	ELC
	ENG 330	Psycholinguistics	3	MRE
	ENG 442	Advanced Grammar	3	MRE
	ENG 234	Language and Society	3	MRE
	ENG 107	Introduction to Fiction	3	MRE
		Total	**15**	
Spring		Elective	3	ELC
	ENG 420	Seminar	3	MRE
	ENG 336	Discourse Analysis	3	MRE
	ENG 214	Studies in English Literature	3	MRE
	TRA 201	Theoretical & Practical Issues	3	MRE
		Total	**15**	

B.A. in English Literature

A major in English Literature provides the student with a historical and critical context for evaluating literary works. The texts studied are primarily written in English, but also include translation of major European authors, as well as representative authors and styles from Asia. Literature majors begin their studies with a survey of English Literature and then move on to classes which concentrate on a particular motif, genre, critical approach, country, author or time period. Coordination with other disciplines in the Arts and Sciences (especially Arabic language and literature, history and art history) allows students to study the literature, political history and architecture of a particular place or epoch in-depth during one semester.

Admission to the Program

Formal admission to the major by the department requires a cumulative grade point average (GPA) of 2.00 and a GPA of 2.00 or higher in two English Literature courses.

University Graduation Requirements

A total of 120 credit hours, including:

- Forty-six credit hours of university requirements (URE)
- Twelve credit hours of college requirements (CRE)
- Forty-five credit hours of major requirements (MRE)
- Seventeen credit hours of free electives

College Requirements

Twelve credit hours (or four courses) from among the following:

- ARA 101 Readings in Arabic Heritage
- ARA 201 Arabic Literature in Ttranslation (non native speakers of Arabic only)
- ARA 209 Arabic Morphology and Syntax
- PHI 201 Introduction to Philosophy
- PHI 202 Introduction to Islamic Philosophy
- POL 201 Introduction to Political Studies
- POL 202 International Relations
- PSY 101 General Psychology
- PSY 102 Social Psychology
- SOC 101 Introduction to Sociology
- SOC 202 Communication and Society

Requirement for the Major

For an English major with a concentration in Literature, the student must complete 45 credit hours of English courses, including:

- twelve credit hours of related courses in English Language and Translation.
- thirty three credit hours of English literature covering the five basic areas of major: literary history, genres, in-depth study of a major author, literary theory, and writing.

Course Requirements

English Literature Survey

- ENG 110 Survey of English Literature I
- ENG 111 Survey of English Literature II

American Literature Survey

- ENG 212-1 Special Topics in American Literature
- ENG 218-2 Special Topic in American Literature

Writing (Creative or Expository) One course to satisfy the writing requirement

- ENG 200 Creative Writing and Editing
- ENG 201 Expository Writing

Genres: One course that meets the Genre requirement:

- ENG 106 Introduction to Fiction
- ENG 108 Introduction to Drama
- ENG 109 Introduction to Poetry

Literary History: Two courses that cover the following designated periods of English Literature:

- ENG 203 Poetry and Prose: 1500-1660
- ENG 205 Poetry and Prose: 1660-1800
- ENG 204 Shakespeare Drama and Poetry
- ENG 207 The Beginnings of the Novel
- ENG 209 The Romantic Age
- ENG 211 The Nineteenth-Century English Novel
- ENG 212 The Victorian Age
- ENG 214 Studies in Twentieth-Century Literature

Literary Theory:

- ENG 216 Introduction to Literary Theory and Criticism

Major Author: One course that provides an in depth study of the works of a major author

- ENG 410-1 Seminar in English Literature
- ENG 410-2 Seminar in American Literature
- ENG 415 Tutorial in English Literature

Related Requirements

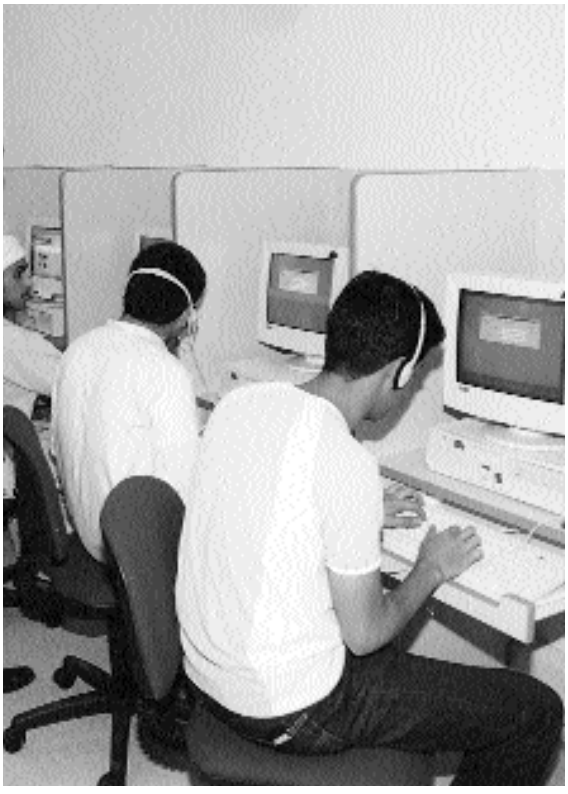
Six credits (two courses) from the following language and translation courses

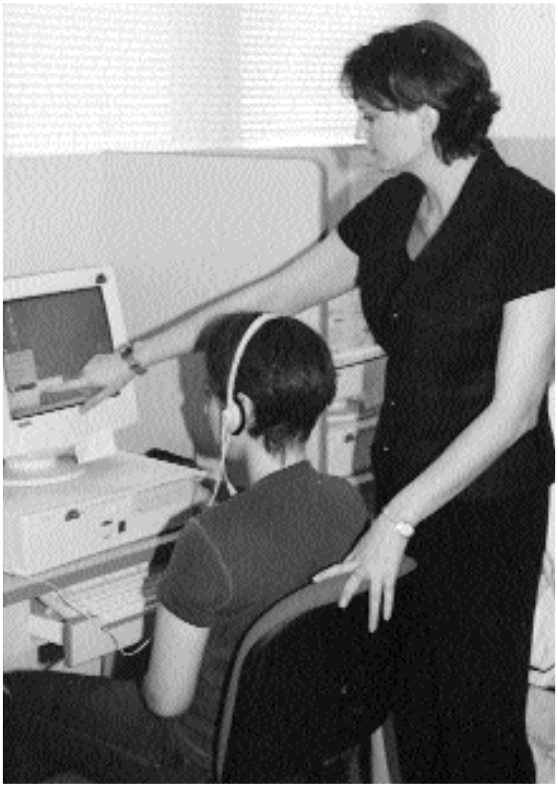
- ENG 126 History of the English Language;
- ENG 226 Morphology
- ENG 228 Semantics
- ENG 236 Discourse Analysis
- TRA 101 Introduction to Translation
- TRA 305 Cross-Cultural Issues in Translation

Minor in English Literature:

A total of 21 credit hours from the following courses:

- ENG 110 Survey of English Literature I
  OR ENG 111 Survey of English Literature II
- ENG 218-1 Special Topics in American Literature
  OR ENG 218-2 Special Topics in American Literature
- ENG 200 Creative Writing and Editing
  OR ENG 201 Expository Writing
- ENG 106 Introduction to Fiction
  OR ENG 108 Introduction to Drama
  OR ENG 109 Introduction to Poetry
- ENG 203 Poetry and Prose: 1500-1600
  OR ENG 205 Poetry and Prose: 1660-1800
- ENG 207 The Beginnings of the Novel
  OR ENG 209 The Romantic Age
  OR ENG 212 The Victorian Age
- ENG 216 Introduction to Literary Theory and Criticism





Proposed Program & Sequence of Study

Bachelor of Art in English Literature

(B.A. in English Literature)

FIRST YEAR (31 credit hours)				
Term	**Course #**	**Course**	**Credit Hours**	**Fulfills**
Fall	COM 001, 101, 102	Communication	3	URE
	MTH 001, 100, 103	Mathematics Requirement	3	URE
	CMP 101	Computer Literacy and Information Access	4	URE
	CHM 103	Chemistry and Everyday Life	3	URE
	ARA 100 OR 101	Arabic Language for Non-Native Speakers/ Readings Heritage	3	URE
		Total	**16**	
Spring	COM 101, 102, 203, 204	Communication Sequence	3	URE
	STA 102	Mathematics or Statistics	3	URE
	PHY 100/103	Science Requirement	3	URE
	ARA 201	Arab Literature in Translatrion	3	URE
	CSC 201	Western Cultural Studies	3	URE
		Total	**15**	

SECOND YEAR (30 credit hours)				
Term	**Course #**	**Course**	**Credit Hours**	**Fulfills**
Fall	COM 203, 204	Communications Sequence	3	URE
	ENG 123	Introduction to Language Study	3	CRE
	POL 201	Introduction to Political Studies	3	URE
	SOC 101	Introduction to Sociology	3	URE
	ENG 107/110	Introduction to Fiction/Survey of Literature	3	MRE
		Total	**15**	
Spring	ENG 200/201	Creative/Expository Writing OR	3	MRE
	ENG 207	Beginnings of the Novel	3	MRE
	COM 208/9	Public Speaking/Dramatic Expression	3	URE
	PSY 101	General Psychology	3	CRE
	ENG 111	Survey of Literature	3	MRE
		Total	**15**	

THIRD YEAR (30 credit hours)				
Term	**Course #**	**Course**	**Credit Hours**	**Fulfills**
Fall	ENG 211	19th Century English Novel	3	MRE
	ENG 203/212/218	Poetry /Prose from 1500/Victorian/Special Topics	3	MRE
	TRA 101	Introduction to Translation	3	MRE
	SOC 201	Globalization	3	CRE
	SOC 201	Introduction to Philosophy	3	CRE
		Total	**15**	
Spring	ENG 232	English Grammar	3	MRE
	ENG 126	History of Language	3	MRE
	ENG 204/108	Shakespeare Drama/Poetry/Intro to Drama	3	MRE
	ENG 214	Studies in 20th Century Literature	3	MRE
	ENG 216	Introduction to Literary Theory and Criticism	3	MRE
		Total	**15**	

FOURTH YEAR (30 credit hours)				
Term	**Course #**	**Course**	**Credit Hours**	**Fulfills**
Fall	ENG 312	East and West (Literature relations)	3	MRE
	ENG 315/109	Literature for our time/Intro to Poetry	3	MRE
	ENG 410-1	Seminar in English Literature	3	MRE
	ENG 236	Discourse Analysis	3	MRE
	HIS 202	History of USA	3	URE
		Total	**15**	
Spring	ENG 318/410-2	World Literature Today/Seminar in US Lit.	3	MRE
	ENG 415	Tutorial in English Literature	3	MRE
	TRA 305	Cross Culture Issues in Translation	3	ELC
	SOC 202	Communication and Society	3	CRE
	CSC 202	Western Culture Studies II	3	ELC
		Total	**15**	

B.A. in Translation

This major provides students with a thorough understanding of the traditional and modern linguistic theories of translation. It prepares them to apply these theories to the practice of literary and technical translation. Most of the course work involves the use of Arabic and English, but the skills taught could be adapted for use with other languages. Translation presupposes fluency and literacy in at least two languages. Therefore, the acquisition of bilingual skills in both English and Arabic are an important goal of the program. In order for students to reach this goal, course work is required in the following disciplines: Arabic Language and literature, English Language and literature in addition to translation coursework .

Admission to the Program

Formal admission to the major by the department requires a cumulative grade point average (GPA) of 2.00 and a GPA of 2.00 or higher in two translation courses.

University Graduation Requirements

- A total of 120 credit hours, including;
- Forty-six credit hours of university requirements (URE)
- Twelve credit hours of college requirements (CRE)
- Forty-five credit hours of major requirements (MRE)
- Seventeen credit hours of free electives

College Requirements

Twelve credit hours (or four courses) from among the following:

- ARA 101 Readings in Arabic Heritage
- ARA 201 Arabic Literature in Translation (non native speakers of Arabic only)
- ARA 209 Arabic Morphology and Syntax
- PHI 201 Introduction to Philosophy
- PHI 202 Introduction to Islamic Philosophy
- POL 201 Introduction to Political Studies
- POL 202 International Relations
- PSY 101 General Psychology
- PSY 102 Social Psychology
- SOC 101 Introduction to Sociology
- SOC 202 Communication and Society

Requirements for the Major

A total of 45 credit hours, including:

- Twenty-four credit hours of translation
- Nine hours of related courses in Arabic Language
- Twelve credit hours of related courses in English Language

Course Requirements

- TRA 101 Introduction to Translation
- TRA 102 Practical Issues in Translation
- TRA 201 Translation Theory
- TRA 301 Translation Practicum I
- TRA 302 Translation Practicum II
- TRA 305 Cross-Cultural Issues in Translation
- TRA 401 Advanced Translation
- TRA 403 Special Topics in Translation

Related Requirements

Any nine credit hours (or three courses) from among the following:

- ARA 208 Selected Texts for Translation I
- ARA 209 Arabic Morphology and Syntax
- ARA 210 Arabic Philology
- ARA 212 Introduction to Arabic Sociolinguistics
- ARA 307 Selected Texts for Translation II
- ARA 308 Introduction to Stylistics and Metrics
- ARA 309 Arabic Lexicography
- ARA 407 Advanced Studies in Arabic Grammar

Public Administration

Proposed Program & Sequence of Study

Bachelor of Art in Translation

(B.A. in Translation)

FIRST YEAR (31 credit hours)				
Term	**Course #**	**Course**	**Credit Hours**	**Fulfils**
Fall	COM 001, 101 OR 102	Communication 001, 101 OR 102	3	URE
	MTH 100 OR MTH 103	Fundamentals of logic OR Calculus I	3	URE
	CMP 101	Computer Literacy and Information Access	4	URE
	CHM 103	Chemistry and Everyday Life	3	URE
	ARA 100 OR ARA 101	Arabic Language for NNS OR Reading in Arabic Heritage I	3	URE/ARA
		Total	**16**	
Spring	COM 101, 102, 203 OR 204	Communication 101, 102, 203 OR 204	3	URE
	STA 102	Introduction to Statistics	3	URE
	PHY 100 OR 103	Conceptual Physics OR Astronomy	3	URE
	TRA 101	Introduction to Translation	3	MR
	CSC 201	Western Cultural Studies	3	CRE
		Total	**15**	

SECOND YEAR (30 credit hours)				
Term	**Course #**	**Course**	**Credit Hours**	**Fulfils**
Fall	COM 203 OR 204	Communication 203 OR 204	3	URE
	ENG 123	Introduction to Language Study	3	CRE
	POL 201	Introduction to Political Studies	3	CRE
	TRA 102	Practical Issues in Translation	3	MR
	ARA 208	Selected Texts for Translation I	3	URE/HUM
		Total	**15**	
Spring	TRA 201	Translation theory	3	MR
	COM 208 OR 209	Public Speaking OR Dramatic Expression	3	URE
	ARA 307	Selected Texts for Translation II	3	MR
	PSY 101	General Psychology	3	CRE
		Elective	3	ELC
		Total	**15**	

THIRD YEAR (30 credit hours)				
Term	**Course #**	**Course**	**Credit Hours**	**Fulfils**
Fall	TRA 301	Translation Practicum I	3	MR
	ENG 234	Language Society	3	URE/HUM
	PSY 102	Social Psychology	3	CRE
	ARA 209	Arabic Morphology and Syntax	3	MR
		Elective	3	ELC
		Total	**15**	
Spring	TRA 302	Translation Practicum II	3	
	ENG 224	English Grammar	3	MR
	ENG 322	Semantics & Pragmatics	3	MR
	TRA 305	Cross-Cultural Issues in Translation	3	MR
		Elective	3	ELC
		Total	**15**	

FOURTH YEAR (30 credit hours)				
Term	**Course #**	**Course**	**Credit Hours**	**Fulfils**
Fall	TRA 401	Advanced Translation skills	3	MR
	ENG 330	Psychoilinguistics	3	MR
	ENG 422	Advanced English Grammar	3	MR
	ARA 308	Introduction to stylistics and Metrics	3	MR/E
		Elective	3	ELC
		Total	**15**	
Spring	TRA 403	Special Topics in Translation	3	MR
	ENG 336	Discourse Analysis	3	MR
	ARA 407	Advanced Arabic Grammar	3	MR
		Elective	3	ELC
		Elective	3	ELC
		Total	**15**	

Public Administration

B. A. in Public Administration

The American University of Sharjah offers a professionally oriented degree program in Public Administration. It is focused on the process of and substance of public policy and on the knowledge and skills needed for effective implementation of public policy and public administration. In short this degree program prepares the student for a career in public service whether in governmental agencies, non-governmental organizations, or in the not-for-profit or private sectors.

The content of the degree program is designed to enable the student to be an effective public administrator and potential leader. Besides acquiring the basic skills in quantitative and analytical reasoning and in communication (written, oral and electronic), the student in this program will also acquire an understanding of the administrative/managerial systems and processes and of human behavior in different settings (individual, group and organizational) all in the context of economic, legal, political and governmental institutions, systems and processes. To achieve that objective the student not only needs a strong foundation in the arts and the sciences but also a hands-on internship experience.

Graduation Requirements

A total of 120 credit hours, including

- Forty-six to forty-eight credit hours of University Requirements
- Forty-two to forty-five credit hours in the Major and Concentration
- Twelve credit hours in Related Area courses
- Seventeen to twenty credit hours of Free Electives

Designated University Requirements

All students majoring in Public Administration must take the following courses as a part of their university requirements.

- CMP 101N Computer Literacy and Information Access. Satisfies the University computer literacy and information access requirement.
- ECO 201 Principles of Microeconomics. Satisfies a University general education social science requirement.
- ECO 202 Principles of Macroeconomics. Satisfies a general education social science requirement.

STA 201 Introduction to Statistics. Satisfies the statistics requirement.

Major Requirements

Core Courses (A total of 42-45 Credit Hours)

The following ten courses (30-33 credit hours) are the required Core:

- ACC XXX Accounting for Public Administration
- CMP 103, CMP 104 or CMP 105 C Programming
- MIS 201 Fundamentals of Management Information Systems
- PBA 101 Introduction to Public Administration *OR* MGT 101 Fundamentals of Management
- PBA 301 Public Management Skill Modules
- PBA 304 Public Budgeting
- PBA 306 Public Personnel Administration (Cross listed with MGT 302 Managing Human Resources)
- PBA 310 Research in Public Administration
- PBA 497 Internship in Public Administration (3-6 credit hours)

And, Required Option (12 credit hours).

Choose any four courses (12 credit hours) from one of the following concentrations: (I) Public Administration and Society or (2) Public Administration Policy.

(I) Public Administration and Society (12 credit hours):

- PBA 201 Government Management
- PBA 203 Public Management
- PBA 205 Intergovernmental Relations
- PBA 402 Local and Regional Administration

- PBA 407 Legal Issues in Public Administration
- PBA 408 Development Management
- PBA 409 Organization Planning and Control
- PBA 412 International Organizations

(2) Public Administration Policy (12 credit hours):

- PBA 201 Government Management
- PBA 205 Intergovernmental Relations
- ECO 401 Public Economics
- PBA 407 Legal Issues in Public Administration
- PBA 410 Public Program Evaluation
- PBA 411 Foundations of Policy Analysis
- PBA 412 International Organizations
- PBA 415 Economics and Public Policy
- PBA 417 Public Finance

Related Areas

Choose, after consulting your advisor, any four courses (12 credit hours) from the following:

- ECO 301 Intermediate Microeconomics
- ECO 302 Intermediate Macroeconomics
- ECO 403 Economics of Oil and Gas
- FIN 201 Corporate Finance
- FIN 301 Financial Statement Analysis
- MIS 302 Introduction to System Analysis
- MIS 303 Database Management
- MGT 301 Organizational Behavior
- POL 207 Comparative Political Systems
- PSY 102 Social Psychology
- POL 209 Comparative Arab Political Systems
- POL 305 Political Development and Modernization
- POL 406 Islamic Political Institutions
- SOC 201 Globalization
- SOC 203 Arab Culture and Society
- SOC 205 UAE Society
- SOC 309 UAE Legal and Political Institutions

Minor in Public Administration

A total of 21 credit hours, including

Core courses (A total of 15 Credit Hours)

- PBA 101 Introduction to Public Administration *OR* MGT 101 Fundamentals of Management
- PBA 205 Intergovernmental Relations
- PBA 301 Public Management Skill Modules
- PBA 304 Public Budgeting
- PBA 306 Public Personnel Administration

Required Option: Choose two (2) courses (6 Credit Hours) from among the following:

- ECO 401 Public Economics
- PBA 201 Government Management
- PBA 205 Intergovernmental Relations
- PBA 408 Development Management
- PBA 407 Legal Issues in Public Administration
- PBA 413 Public Financial Analysis
- MIS 201 Fundamentals of Management Information Systems
- SOC 309 UAE Legal and Political Institutions

Other Disciplines

Humanities and Social Science Program

Chair

Adrian Gully

Faculty

Associate Professor Adrian Gully (Arabic), John Willoughby (Economics)

Assistant Professor Richard Burchett (Psychology), Mary Ann Fay (History), Nada Mourtada-Sabah (Political Science), Bassam Abu Al Foul (Economics) , Gregg Frasco (Economics), Dale Holt (Public Administration)

The Humanities and Social Sciences Program provides the student with courses in several disciplines which enrich his/her general education and professional training. Twelve credit hours in the humanities and the social sciences are part of the university graduation requirements

Please refer to the Course Descriptions section of this catalog to locate the courses offered in the humanities and social sciences by discipline.

Science Program

Chair

S. Ballou Skinner

Faculty

Professor Fawwaz Jumean (Chemistry), S. Ballou Skinner (Physics)

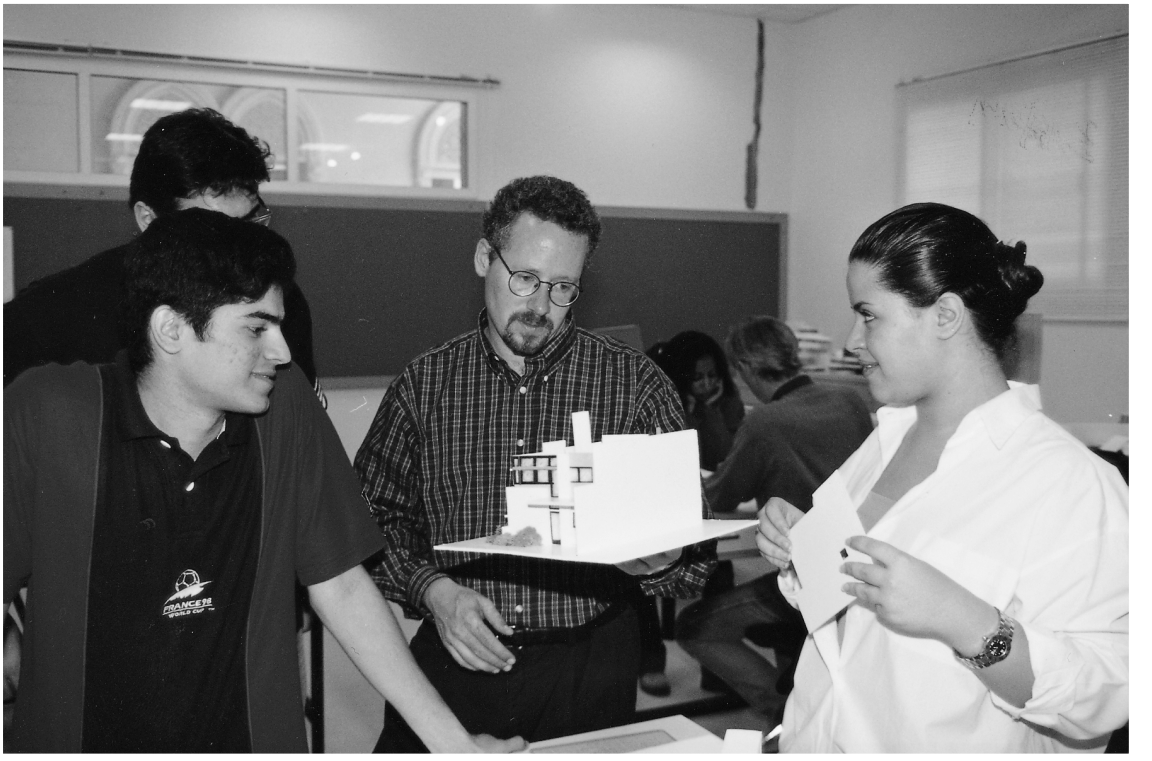
Associate Professor Basim R. Bulos (Physics)

Assistant Professor Samir Aouadi (Physics), Asad Hasan (Physics), Michael Vinson (Physics), Imad Abu-Yousef (Chemistry), Rabih Elie Jabbour (Chemistry)

Instructor Israa Haj Sirri (Physics)

The Science Program provides the student with foundation courses in chemistry and physics. These are courses required not only of engineering students, but also of all students in the university as part of the university graduation requirements.

Please refer to the Course Descriptions section of this catalog to locate the courses offered in the Sciences by discipline.



School of Architecture and Design

- Dean and Faculty
- Architecture Program
- Heritage Management
- Interior Design Program
- Multimedia Program
- Visual Communication Program
- General Design Program

Dean and Faculty

Dean

Martin Giesen

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, digital media and heritage 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 (Architecture)

Associate Professor

Nadia Alhasani (Achitecture)

Jay Randle (Architecture)

Mehdi Sabet (Architecture, Interior Design)

Gregor Weiss (Foundations, Architecture)

Dirk Van Wyk (Foundations, Visual Communication)

Assistant Professor

Tarek Al Ghoussein (Photography)

Robert Dahm (Computer Design, Multimedia)

Kimberley Lund (Foundations, Printmaking)

Ann Melanie (Foundations, 3-D Studies)

Kevin Mitchell (Architecture)

Eric Nay (Architecture, Foundations)

Phil Sheil (Foundations, Visual Communication)

Florian Techel (Architecture, Digital Design)

Instructor

Paul Bantey (Visual Communication)

Karl Byas (Digital Media)

Masood Khan (Visual Design)

Adjunct Faculty

Rabih Abi Faraj (Multimedia)

Shereen Dehays (Interior Design)

Ronald Hawker (History of Art and Architecture)

Omid Z. Rouhani (Interior Design)

The SA&D prepares students for careers in:

- environmental design, architecture, landscape architecture, interior design, town planning;
- graphic design, advertising, packaging design, illustration, animation, computer simulations, video;
- art and culture management, exhibition design and publicity, general design consulting.

Note: 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. Supply expenses for studio courses are additional to tuition cost. Under certain circumstances, the university may need to limit enrollment in the school or in some majors because of space limitations.

Accreditation

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.

Architecture Program

Chair

Jay Randle

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 give tangible form to the patterns of daily life. Architecture, in this sense, may concern aspirations and meanings, but it seeks to attain them for us, here and now.

Architecture has also 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.

Faculty

Professor Friedrich Ragette

Associate Professor Nadia Alhasani, Jay Randle, Mehdi Sabet, Gregor Weiss

Assistant Professor Kevin Mitchell, Eric Nay, Florian Techel

Instructor Karl Byas

Bachelor of Architecture (B. Arch.)

The Bachelor of Architecture (B. Arch.) degree is intended for the student seeking a professional career in architecture. The program entails five years of university studies plus professional training. 170 credit hours comprise the degree program, including 129 credit hours of required coursework in architecture and closely associated fields. The courses present the irreducible core of the discipline of Architecture.

Each student is required to extend the core curriculum with 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 46-48 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 present a unique opportunity to explore other fields of interest. Based solely on individual interests, each Architecture student must select 9 additional credit hours of electives from general university offerings. Some credit hours overlap.

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 conforms to the criteria established by the National Accreditation Board (NAAB) of the United States for a first professional degree in Architecture.

Admission to the Professional Degree

Program

Formal admission to the Bachelor of Architecture Program requires fulfillment of the general university admission requirements.

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, the fourth and sixth semesters in the program. A student must pass each review to continue in the major.

First Year Review

In order to progress to second year in the chosen major, a student must achieve an overall minimum GPA of 2.0 in the four foundation studio courses (DES 111, 112, 131, 132.)

Second Year Review

The first mandatory review occurs at the end of the second (sophomore) year, when the student has completed four semesters of the program in Architecture.

To pass the review successfully, the student must:

- have attained a grade point average (GPA) of 2.30 out of 4.00 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.

Every effort will be made to assist an unsuccessful candidate in transferring to a field that holds better promise for them.

Fourth Year Review

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

For this review, the student must:

- have attained a minimum grade point average (GPA) of 2.20 out of 4.00 in all university courses.
- have attained a minimum average of 2.50 out of 4.00 in architectural design studio courses (GPAAS).

A student not eligible to continue, but who completes the requirements of the four-year, non-professional degree, will be allowed a change-of-major option and be awarded the Bachelor of Science in Design.

Design Studio Retention Criteria

Independently of the above reviews, or overall or studio averages:

- a student receiving a grade of D in two consecutive design studios in any given academic year 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.
- a student receiving a grade of D in any two design studios, though not in the same academic year, 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 Requirement

A total of 170 credit hours, including:

- fifty (50) credit opportunities for 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
- eighteen (18) credit hours of approved Architecture electives
- nine (9) credit hours of open electives
- two summer sessions of approved professional training

Proposed Sequence of Study

Bachelor of Architecture

(B. Arch.)

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

SECOND YEAR (34 credit hours)				
Term	**Course #**	**Course Title**	**Credit Hours**	**Fulfills**
Fall	ARC 201	Architecture Design I	5	MR
	ARC 220	Modern Foundations of Art & Architecture	3	MR
	PHY 104	Physics for Architects	3	MR/URE *Science*
		Advised Elective	3	URE *English*
		Major Architectural Elective I	3	ME
		Total	**17**	
Spring	ARC 202	Architectural Design II	5	MR
	ARC 212	Analysis and Methods in Architecture	3	MR
	ARC 231	Survey of Materials & Practices in Construction	3	MR
	CVE 272	Structural Principles:Statics & Strength of Materials	3	MR/URE *Science*
		Advised Elective	3	URE *English*
		Total	**17**	

THIRD YEAR (36 credit hours)				
Term	**Course #**	**Course Title**	**Credit Hours**	**Fulfills**
Fall	ARC 301	Architecture Design III	6	MR
	ARC 321	Seminar: Ideas in Architecture	3	MR
	ARC 330	Material and Practices of Concrete Construction	3	MR
	CVE 371	Structural Analysis:Conceiving Forces in Buildings	3	MR
	COM XXX	Advised Elective	3	URE *Oral Comm.*
		Total	**18**	
Spring	ARC 302	Architectural Design IV	6	MR
	ARC 351	Environmental Energies & Building Form	3	MR
	CVE 372	Structural Design in Concrete & Steel	3	MR
	ARC XXX	Major Architectural Elective II	3	ME
	ARC 370	Professional Training I	0	MR
		Advised Elective	3	URE *Social Science*
		Total	**18**	

FOURTH YEAR (36 credit hours)				
Term	**Course #**	**Course Title**	**Credit Hours**	**Fulfills**
Fall	ARC 401	Architecture Design V	6	MR
	ARC 431	Prefabrication & Systems Building	3	MR
	ARC 460	Professional Practice I:Economics & Management	3	MR/URE *Social Science*
	ARC XXX	Major Architectural Elective III	3	ME
	ARC XXX	Advised Elective	3	URE *Arabic*
		Total	**18**	
Spring	ARC 402	Architectural Design VI	6	MR
	ARC 452	Environmental Control Systems in Architecture	3	MR
	ARC 470	Professional Training II	0	MR
		Major Architectural Elective IV	3	ME
	STA XXX	Advised Elective	3	URA *Statistics*
		Elective	3	EL
		Total	**18**	

FIFTH YEAR (33 credit hours)				
Term	**Course #**	**Course Title**	**Credit Hours**	**Fulfills**
Fall	ARC 500	Final Project Research & Programming	4	MR
	ARC 510	Topical Practicum in Architectural Design	5	MR
	ARC XXX	Major Architectural Elective V	3	ME
	CVE 561	Professional Practice II: Construction Management	3	MR
		Elective	3	ELC
		Total	**18**	
Spring	ARC 502	Final Project Design	9	MR
	ARC 560	Professional Practice III: Building Law	3	MR
		Elective	3	ELC
		Total	**15**	
		Total for the Degree	**170**	

Abbreviations: **ELC**: Elective, **MR**: Major Requirement, **URE**: University Requirement, **ME**: Major Elective

Heritage Management

Coordinator

Ronald Hawker

Even if we are unaware of it, every step we take is on the footsteps of our ancestors. In addition 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.

Faculty

Adjunct Lecturer Ronald Hawker

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, and 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. requires 120 credit hours, 69 of which consist of Heritage Management and related School of Architecture and Design requirements. Of these required courses, 31 credit hours are drawn from upper level Heritage Management courses. Students are encouraged as well to complete related studio courses in the Multimedia and Interior Architecture programs to enhance the visual communication skills necessary for museum and gallery work.

At the end of this period, students will be competent in the research, documentation, project planning, conservation, and presentation of both moveable 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.

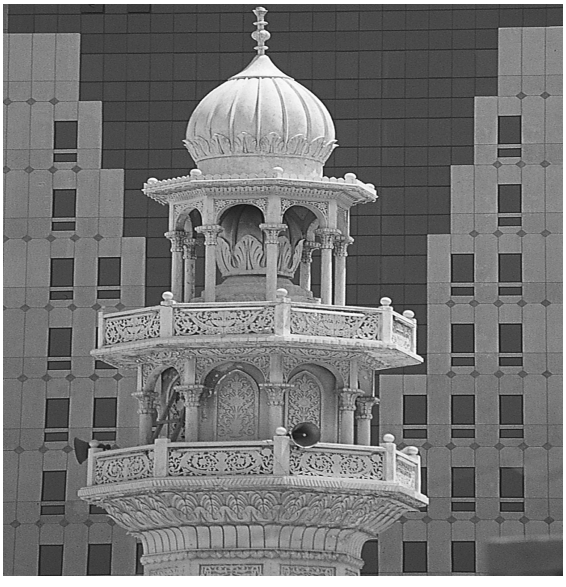
Admission to the Program

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

Retention Review in Heritage Management

First Year Review

In order to progress to second year in the chosen major, a student must achieve an overall minimum GPA of 2.0 in the four foundation studio courses (DES 111, 112, 131, 132.)



Proposed Sequence of Study

Bachelor of Science in Heritage Management

(B.S.H.M.)

FIRST YEAR (30 credit hours)				
Term	**Course #**	**Course Title**	**Credit Hours**	**Fulfills**
Fall	COM 101N	Academic Writing	3	URE *English*
	DES 100	Digital Media in Design	3	MR/URE *Computer*
	DES 111	Descriptive Drawing I	3	MR
	DES 121	History of Material Culture I	3	MR/URE *Humanities*
	DES 131	Design Foundations I	3	MR
		Total	**15**	
Spring	COM 102N	Writing and Reading Across the Curriculum	3	URE *English*
	DES 112	Descriptive Drawing II	3	MR
	DES 122	History of Material Culture II	3	MR/URE *Humanities*
	DES 132	Design Foundations II	3	MR
		Advised Elective	3	MR/URE *Math*
		Total	**15**	

SECOND YEAR (30 credit hours)				
Term	**Course #**	**Course Title**	**Credit Hours**	**Fulfills**
Fall	COM 205	English for Media	3	URE *English*
		Advised Elective	3	URE *Science*
	HRM 201	History of Material Culture in the Arabian Gulf I	3	MR
	MKT XXX	Marketing for Non-Majors (Business)	3	MR
	VIS 221	Photography Basics	3	MR
		Total	**15**	
Spring	COM 206	Writing for the Media	3	URE *English*
	VIS 211	Drawing for Visual Communication	3	MR
	HRM 202	History of Material Culture in the Arabian Gulf II	3	MR
	HIS 102	Survey of Islamic History II	3	MR
	ECO 201	Microeconomics	3	URE *Social Science*
		Total	**15**	

THIRD YEAR (30 credit hours)				
Term	**Course #**	**Course Title**	**Credit Hours**	**Fulfills**
Fall	HRM 301	Issues in Heritage Management I	3	MR
	HRM 331	Traditional Regional Material and Climate	3	MR
	STA XXX	Advised Elective	3	URE *Statistics*
	COM 208	Public Speaking	3	URE *Oral Comm.*
		Elective	3	ELC
		Total	**15**	
Spring	HRM 302	Issues in Heritage Management II	3	MR
	HRM 332	Theory and Practice of Building Restoration	3	MR
	HRM 333	Exhibition Studies	3	MR
	HIS XXX	History of UAE	3	MR
		Advised Elective	3	URE *Science*
	HRM 370	Internship in Heritage Management	0	MR
		Total	**15**	

FOURTH YEAR (30 credit hours)				
Term	**Course #**	**Course Title**	**Credit Hours**	**Fulfills**
Fall	HRM 400	Final Project Research	3	MR
	HRM 421	Senior Seminar I in Heritage Management	3	MR
		Elective	3	ELC
	ARA XXX	Advised Elective	3	URE *Arabic*
	SOC 205	UAE Society	3	URE *Social Science*
		Total	**15**	
Spring	HRM 401	Final Project	6	MR
	HRM 422	Senior Seminar II in Heritage Management	3	MR
		Elective	3	ELC
		Elective	3	ELC
		Total	**15**	

Proposed Sequence of Study

Heritage Management (Minor)

FIRST YEAR (6 credit hours)				
Term	**Course #**	**Course Title**	**Credit Hours**	**Fulfills**
Fall	DES 121	History of Material Culture I	3	MiR
Spring	DES 122	History of Material Culture II	3	MiR

SECOND YEAR (6 credit hours)				
Term	**Course #**	**Course Title**	**Credit Hours**	**Fulfills**
Fall	HRM 201	History of Material Culture in the Arabian Gulf I	3	MiR
Spring	HRM 202	History of Material Culture in the Arabian Gulf II	3	MiR

THIRD YEAR (6 credit hours)				
Term	**Course #**	**Course Title**	**Credit Hours**	**Fulfills**
Fall	HRM 301	Introduction to Issues in Heritage Management I	3	MiR
Spring	HRM 302	Introduction to Issues in Heritage Management II	3	MiR

FOURTH YEAR (6 credit hours)				
Term	**Course #**	**Course Title**	**Credit Hours**	**Fulfills**
Fall	HRM 421	Senior Seminar I in Heritage Management	3	MiR
Spring	HRM 422	Senior Seminar II in Heritage Management	3	MiR

Abbreviations: **ELC**: Elective, **MR**: Major Requirement, **MiR**: Minor Requirement, **URE**: University Requirement

Interior Design

Chair

Jay Randle

Human beings spend most of their time indoors in spaces whose form is determined by an array of concerns, including function, location, climate, aesthetics and representation. Consequently, the preparation for the profession of interior designer incorporates many issues common to architecture. Among the main concerns are those of material and aesthetic nature, sustained human productivity, physical and emotional health, safety and the general welfare of humanity. To meet these interdisciplinary requirements, AUS offers the Bachelor of Interior Design degree.

Faculty

Professor Friedrich Ragette

Associate Professor Nadia Alhasani, Jay Randle, Mehdi Sabet, Gregor Weiss

Assistant Professor Kevin Mitchell, Eric Nay, Florian Techel

Instructor Karl Byas

Bachelor of Interior Design

The Bachelor of Interior Design requires four (4) years of university studies. The initial year of Interior Design consists of a basic orientation in the applied arts, training in computer applications and courses in the history and relevance of design in art and architecture. After the foundation year, interior design studio courses concentrate on the elements of interior design, to include space planning, color theory, psychology and lighting techniques. Studio courses include model building, technical drawing, furnishings, wall treatments and fixtures design, and a variety of other design problems approached on an individual or group basis. Later courses educate the student in building and safety code regulation, the reading and production of architectural drawings, and effective presentation techniques.

The B.I.D. is a professional program. The 122 credit hours required for the degree comprise 74 credit hours in interior architecture, technology, design and related subjects, 46-48 credit hours of supporting university and general education requirements and 9 hours credit hours of electives. Some courses overlap the different sets of requirements. The B.I.D. is configured to prepare those who seek careers as professional interior designers. The curriculum follows recommendations of the Foundation of Interior Design Education Research (FIDER) of the United States and is conceived to meet or exceed requirements for interior designers in the United Arab Emirates.

University Graduation Requirements

A total of 122 credit hours, including:

- Forty-eight (48) credit hours of university requirements (including 12 credit hours of overlap with MR)
- Seventy-four (74) credit hours in the major (including 12 credit hours of overlap with URE)
- Twelve (12) credit hours of major electives

- One session of approved practicum/professional training

Admission to the Program

Formal admission to the B.I.D. program requires fulfillment of the general university admission requirements.

Retention Review in Interior Design

First Year Review

In order to progress to second year in the chosen major, a student must achieve an overall minimum GPA of 2.0 in the four foundation studio courses (DES 111, 112, 131, 132.)

Second Year Review

As an extension of the regular advisement process, the performance of all interior design students is reviewed after the fourth semester for retention in the program. To successfully pass this review, a grade point average of 2.30 out of 4.00 must be attained in the second year studio sequence. In the case of a negative outcome, the student will be barred from continuing in the major. At this time, every effort will be made to facilitate transfer into a field that holds better promise for the individual.

Proposed Sequence of Study

Bachelor of Interior Design

(B.I.D.)

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

SECOND YEAR (34 credit hours)				
Term	**Course #**	**Course Title**	**Credit Hours**	**Fulfills**
Fall	COM 205	English for Media	3	URE *English*
	ARC 201	Architecture Design I	5	MR
	IDE 203	Materials & Methods of Interior Design	3	MR
	IDE XXX	Major Elective	3	ME
		Advised Elective	3	URE *Science*
		Total	**17**	
Spring	ARC 202	Architecture Design II	5	MR
	IDE 204	Interior Construction	3	MR
	IDE XXX	Major Elective	3	ME
	PSY XXX	Psychology	3	URE *Social Science*
	ARA XXX	Advised Elective	3	URE *Arabic*
		Total	**17**	

THIRD YEAR (31 credit hours)				
Term	**Course #**	**Course Title**	**Credit Hours**	**Fulfills**
Fall	ARC 352	Environmental Control Systems	3	MR
	IDE 301	Interior Design Studio III	5	MR
	IDE 320	History of Interior Design	3	MR
	IDE XXX	Major Elective	3	ME
		Advised Elective	3	URE *Science*
		Total	**17**	
Spring	ARC 451	Lighting & Acoustics	3	MR
	IDE 302	Interior Design Studio IV	5	MR
	IDE 370	Professional Training	0	MR
	IDE XXX	Major Elective	3	ME
	STA XXX	Advised Elective	3	URE *Statistics*
		Total	**14**	

FOURTH YEAR (27 credit hours)				
Term	**Course #**	**Course Title**	**Credit Hours**	**Fulfills**
Fall	ARC 460	Professional Practice	3	MR/URE *Social Science*
	IDE 401	Interior Design Studio V	5	MR
	IDE 402	Final Project Research	2	MR
		Advised Elective	3	URE *English*
		Advised Elective	3	URE *Oral Communication*
		Total	**16**	
Spring	IDE 403	Final Project Studio VI	5	MR
	IDE 404	Interior Design Project Management	3	MR
		Elective	3	ELC
		Total	**11**	

Abbreviations: **ELC:** Elective, **MR:** Major Requirement, **URE:** University Requirement, **ME:** Major Elective

Multimedia

Director

Ann Melanie

Multimedia describes interdisciplinary explorations that broach the distinctions between contemporary technology, communication, the arts, text, photography, film, video, advertising and design. This major engages students with equally 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 degree.

Faculty

Associate Professor Gregor Weiss, Dirk Van Wyk

Assistant Professor Tarek Al Ghoussein, Bob Dahm, Kimberley Lund, Ann Melanie, Phil Sheil

Instructor Paul Bantey, Karl Byas, Masood Khan

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

The B.S.M.M. requires four years (120 credit hours) of coursework, 79 of which are in multimedia related studies, including sound, video, text, computer graphics, advertising and theory courses. The specialization is supported by forty-six (46) to forty-eight (48) credit hours of university and general education requirements and 12 credit hours of electives. Some credit hours overlap among the sets of requirements. The B.S.M.M. 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 requirements of multimedia industries in the United Arab Emirates.

Admission to the Program

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

Retention Review in Multimedia

First Year Review

In order to progress to second year in the chosen major, a student must achieve an overall minimum GPA of 2.0 in the four foundation studio courses (DES 111, 112, 131, 132.)

Second Year Review

As an extension of the regular advisement process, the performance of all students in Multimedia will be reviewed after the fourth semester for retention in the program. To successfully pass this review, a grade point average (GPA) of 2.30 out of 4.00 must be attained in the second year studio sequence. If the review has a negative outcome, the student will be barred from continuing in the Multimedia major. At this time, every effort will be made to facilitate transfer into a field that holds better promise for the individual.

Proposed Sequence of Study

Bachelor of Science in Multimedia

(B.S.M.M.)

FIRST YEAR (30 credit hours)				
Term	**Course #**	**Course Title**	**Credit Hours**	**Fulfills**
Fall	COM 101N	Academic Writing	3	URE *English*
	DES 100	Digital Media in Design	3	MR/URE *Computer*
	DES 111	Descriptive Drawing I	3	MR
	DES 121	History of Material Culture I	3	MR/URE *Humanities*
	DES 131	Design Foundations I	3	MR
		Total	**15**	
Spring	COM 102N	Writing and Reading Across the Curriculum	3	URE *English*
	DES 112	Descriptive Drawing II	3	MR
	DES 122	History of Material Culture II	3	MR/URE *Humanities*
	DES 132	Design Foundations II	3	MR
		Advised Elective	3	MR/URE *Math*
		Total	**15**	

SECOND YEAR (32 credit hours)				
Term	**Course #**	**Course Title**	**Credit Hours**	**Fulfills**
Fall	MUM 201	Multimedia Studio I	4	MR
	VIS 221	Photography Basics	3	ME
	MUM 210	Sound and Video I	3	MR
		Advised Elective	3	URE *Science*
	COM 205	English for Media	3	MR/URE *English*
		Total	**16**	
Spring	COM 210	Writing for the Media	3	MR/URE *English*
	MUM 202	Multimedia Studio II	4	MR
	MUM 211	Sound and Video II	3	MR
		Advised Elective	3	URE *Science*
		Advised Elective	3	ME
		Total	**16**	

THIRD YEAR (32 credit hours)				
Term	**Course #**	**Course Title**	**Credit Hours**	**Fulfills**
Fall	MUM 301	Multimedia Studio III	4	MR
		Advised Elective	3	URE *Social Science*
		Major Elective	3	ME
	STA XXX	Advised Elective	3	URE *Statistics*
		Elective	3	ELC
		Total	**16**	
Spring	MUM 302	Multimedia Studio IV	4	MR
	VIS 360	Fundamentals of Media Theory	3	MR
		Advised Elective	3	URE *Social Science*
	VIS 321	Photo-Journalism	3	MR
		Elective	3	ELC
		Professional Training	0	MR
		Total	**16**	

FOURTH YEAR (29 credit hours)				
Term	**Course #**	**Course Title**	**Credit Hours**	**Fulfills**
Fall	MUM 401	Multimedia Studio V	4	MR
	VIS 361	The Media Industry	3	ME
		Major Elective	3	ME
		Elective	3	ELC
	ARA XXX	Advised Elective	3	URE *Arabic*
		Total	**16**	
Spring	MUM 402	Multimedia Studio VI	4	MR
		Advised Elective	3	MR/URE *Oral Com.*
		Elective	3	ELC
		Elective	3	ELC
		Total	**13**	
		Total for the Degree	**123**	

Abbreviations: **ELC:** Elective, **MR:** Major Requirement, **URE:** University Requirement, **ME:** Major Elective

Note: In the previous charts, courses listed as URE, are described in the Admissions and Degree Programs section of this catalog under the University Graduation Requirements.

Visual Communication

Director

Ann Melanie

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 the 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 Design in Visual Communication (B. Viscom) degree.

Faculty

Associate Professor Gregor Weiss, Dirk Van Wyk

Assistant Professor Tarek Al Ghoussein, Bob Dahm, Kimberley Lund, Ann Melanie, Phil Sheil

Instructor Paul Bantey, Karl Byas, Masood Khan

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

The Bachelor of Science in Visual Communication requires four (4) years of university studies. The initial year of Viscom consists of a basic education in the applied arts, training in computer applications and courses in the history and relevance of design in art and architecture. Elements of psychology in advertising, product design and marketing, and hands-on practice in individual projects are explored. The Studio sequence is the core that integrates practical, cultural and contextual aspects of graphic design.

The B.S.V.C. is a professional program. The 122 credit hours required for the degree comprise 76 credit hours in visual communication, digital applications and visual design related subjects. This specialization is supported by 46 to 48 credit hours of university requirements and 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.

University Graduation Requirements

A total of 122 credit hours, including:

- Forty-six (46) to forty-eight (48) credit hours of university requirements
- Seventy-six (76) credit hours in the major
- Nine (9) credit hours of electives

Major requirements

The minimum requirements for a B.S.V.C. degree are 12 VIS courses plus an advised selection of courses offered within Architecture and Design.

- VIS 211
- VIS 361
- VIS 360
- VIS 412 or 422
- VIS 404

are required courses for graduation in Visual Communications

Admission to the Program

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

Retention Review in Visual Communications

First Year Review

In order to progress to second year in the chosen major, a student must achieve an overall minimum GPA of 2.0 in the four foundation studio courses (DES 111, 112, 131, 132.)

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 2.30 out of 4.00 must be attained in the second year studio sequence. If the review has a negative outcome, the student will be barred from continuing in the Viscom major. At this time, every effort will be made to facilitate transfer into a field that holds better promise for the individual.

Proposed Sequence of Study

Bachelor of Science in Visual Communication

(B.S.V.C.)

FIRST YEAR (30 credit hours)				
Term	**Course #**	**Course Title**	**Credit Hours**	**Fulfills**
Fall	COM 101N	Academic Writing	3	URE *English*
		Advised Elective	3	MR/URE *Math*
	DES 111	Descriptive Drawing I	3	MR
	DES 121	History of Material Culture I	3	MR/URE *Humanities*
	DES 131	Design Foundations I	3	MR
		Total	**15**	
Spring	COM 102N	Writing and Reading Across the Curriculum	3	URE *English*
	DES 112	Descriptive Drawing II	3	MR
	DES 122	History of Material Culture II	3	MR/URE *Humanities*
	DES 132	Design Foundations II	3	MR
	DES 100	Digital Media in Design	3	MR/URE *Computer*
		Total	**15**	

Note: Students must take COM 101N, COM 102N in their first year or before they earn 30 credits. It is advised that students take DES 100 as early as possible.

SECOND YEAR (30 credit hours)				
Term	**Course #**	**Course Title**	**Credit Hours**	**Fulfills**
Fall	VIS 201	Graphic Design Studio I	3	MR
	VIS 211	Drawing for Visual Communication	3	MR
	VIS XXX	Advised Elective	3	ME
	STA XXX	Advised Elective	3	URE *Statistics*
		Advised Elective	3	URE *Science*
		Total	**15**	
Spring	VIS 202	Graphic Design Studio II	3	MR
	VIS XXX	Advised Elective	3	ME
	VIS XXX	Advised Elective	3	ME
		Advised Elective	3	URE *English*
		Advised Elective	3	URE *Science*
		Total	**15**	

THIRD YEAR (30 credit hours)				
Term	**Course #**	**Course Title**	**Credit Hours**	**Fulfills**
Fall	VIS 301	Graphic Design Studio III	3	MR
	VIS XXX	Advised Elective	3	ME
	VIS 360	Fundamentals of Media Theory	3	MR
		Advised Elective	3	URE *English*
		Elective	3	ELC
		Total	**15**	
Spring	VIS 302	Graphic Design Studio IV	3	MR
	VIS XXX	Advised Elective	3	ME
	VIS XXX	Advised Elective	3	ME
		Advised Elective	3	URE *Social Science*
		Elective	3	ELC
	VIS 370	Professional Training	0	MR
		Total	**15**	

FOURTH YEAR (32 credit hours)				
Term	**Course #**	**Course Title**	**Credit Hours**	**Fulfills**
Fall	VIS 401	Senior Graphic Design Studio	4	MR
	VIS 361	The Media Industry	3	MR
	VIS XXX	Advised Elective	3	ME
	ARA XXX	Advised Elective	3	URE *Arabic*
		Advised Elective	3	URE *Social Science*
		Total	**16**	
Spring	VIS 402	Senior Graphic Design Portfolio	4	MR
	VIS 412 or 422	Senior Portfolio	3	MR
	VIS XXX	GRA Required Course	3	ME
		Advised Elective	3	URE *Oral communication*
		Elective	3	EL C
		Total	**16**	
		Total for the Degree	**122**	

Abbreviations: **ELC:** Elective, **MR:** Major Requirement, **URE:** University Requirement, **ME:** Major Elective

General Design

Faculty

Associate Professor Gregor Weiss, Dirk Van Wyk

Assistant Professor Tarek Al Ghoussein, Bob Dahm, Kimberley Lund, Ann Melanie, Phil Sheil

Instructor Paul Bantey, Karl Byas, Masood Khan

The Bachelor of Science in Design is a general design degree. It provides a broad insight into the practice, theory and history of design. This degree allows students to take studio courses in a number of different design specializations. The required curriculum is comprised of university requirements, the common first year School of Architecture and Design foundation courses and a balanced combination of studio, design technology, culture and media-oriented courses. A student wishing to enroll in this program should create the program with the support of a faculty advisor. Approval of the appropriate chairperson or director is required.

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

A total of 120 credit hours, including:

- Forty-six (46) to forty-eight (48) credit hours of university requirements
- Completion of the common Architecture and Design foundation courses
- A minimum of 8 credit hours in upper level Architecture and Design studio courses
- A minimum of 42 credit hours of courses taken in architecture and/or design, including:
  - a minimum of 15 credit hours at the 200 level
  - a minimum of 12 credit hours at the 300 level
  - a minimum of 9 credit hours at the 400 level


Business
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School of Business and Management

- **Director and Faculty**
- **Admission and Requirements**
- **Bachelor of Science in Business Administration (B.S.B.A.)**
  - Accounting Concentration
  - Finance Concentration
  - Management Concentration
  - Marketing Concentration
  - Management Information Systems Concentration
- **Bachelor of Science in Management Information Systems**
- **The Executive Master's of Business Administration (E.M.B.A.)**

Director and Faculty

Director

Wadih Atiyah

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 process, 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 student 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 presentation.
  - Multimedia computer based instruction integrated throughout the business curriculum to assist the 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.

Director

Wadih Atiyah

Professor

Zeinab A. Karake-Shalhoub (Information Systems)
Dennis Olson (Finance)
Taizier Al Zoubi (Accounting)

Associate Professor

Stephen Blythe (Accounting)
Ralph Kuehn (Information Systems)
Louis F. Mottola (Quantitative Management)
Lewis Tucker (Marketing)

Assistant Professor

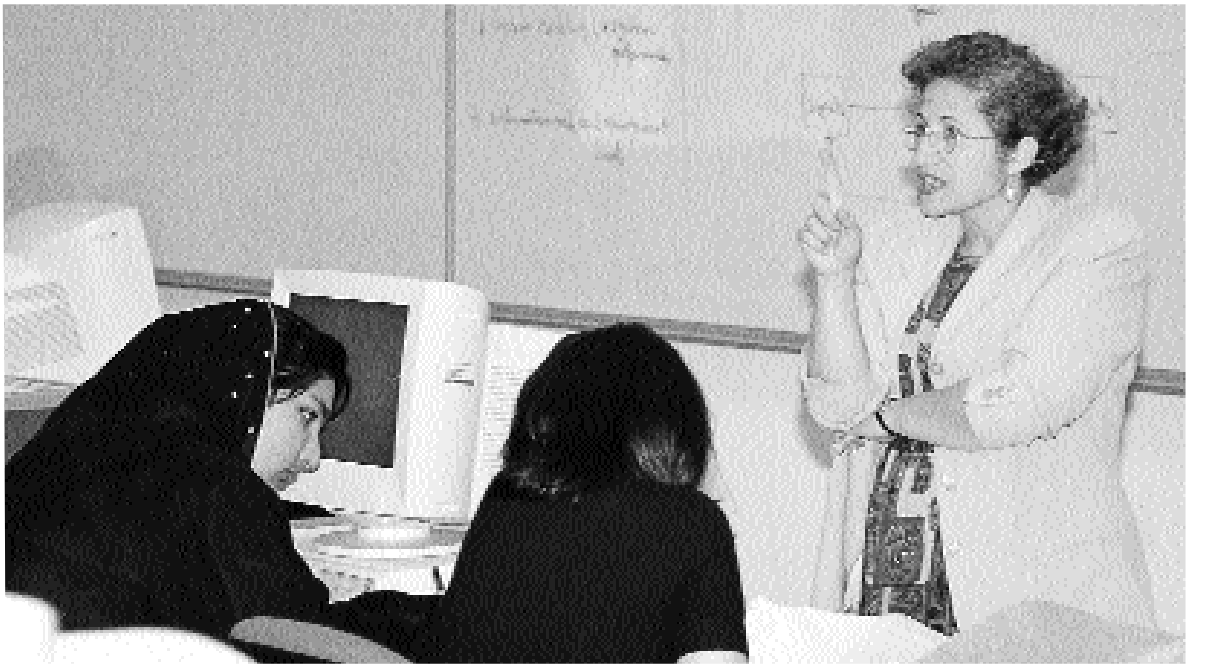
Osamah Al Khazali (Finance and International Business)
Kermit Kuehn (Human Resource Management)
Morteza Sadri (International Business)

Instructor

Peter Birks (Information Systems)
Anthony Farah (Information Systems)
Judith Mroczek (Accounting)
Sara Sayess (Management)
Diana Seyouri (Marketing and Information Systems)

Executive in Residence

Dene Ekholm (Management)



Admission and Requirements

Students qualifying for admission to AUS as freshman 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 B.S.B.A., or B.S.M.I.S. programs take the Mathematics Placement Examination.

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. and B.S.M.I.S. 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 total of 120 credit hours as follows:

- Forty-six to forty-eight 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 following courses as a part of their university requirements: A grade of C or better is required for all restricted university requirements.

- CMP 101N Computer Literacy and Information Access, satisfies the university Computer Literacy and Information Access Requirement
- COM 206 Business Communication, satisfies a university English requirement
- COM 204 Oral Communication, satisfies the university oral communication requirement
- ECO 101 Principles of Microeconomics, satisfies a university general education social science requirement
- ECO 102 Principles of Macroeconomics, satisfies a university general education social science requirement
- MTH 101 Math for Business I, satisfies the university math requirement

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
- FIN 201 Fundamentals of Financial Management
- FIN 301 Financial Statement Analysis
- INB 201 Fundamentals of International Business
- MGT 101 Fundamentals of 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 concentrate 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 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 in 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 305 Commercial Banking
- FIN 400 Portfolio Management
- FIN 401 Advanced Financial Management or other approved Finance courses

An Example of a Proposed Program of Study for Students

Concentrating in Accounting and Finance

FIRST YEAR (29 credit hours)				
Term	**Course #**	**Course Title**	**Credit Hours**	**Prerequisite**
Fall	CMP 101N	Computer Literacy & Information Access	1	
	COM 101N	Academic Writing	3	
	ECO 101	Principles of Microeconomics	3	
	MGT 101	Fundamentals of Management	3	
	MTH 101	Mathematics for Business I	3	
		Total	**13**	
Spring	ACC 201	Fundamentals of Financial Accounting +Lab	4	
	COM 102N	Writing & Reading Across the Curriculum	3	
	ECO 102	Principles of Macroeconomics	3	
	MTH 102	Mathematics for Business II	3	MTH 101
	BIS 201	Business Information Systems	3	CMP 101N
		Total	**16**	

SECOND YEAR (31 credit hours)				
Term	**Course #**	**Course Title**	**Credit Hours**	**Prerequisite**
Fall	ACC 202	Fundamentals of Managerial Accounting	3	ACC 201
	COM 204	Advanced Academic English	3	
	INB 201	Fundamentals of International Business	3	ECO 101, MGT 101
	MIS 201	Fundamentals of MIS	3	CMP 101N
	STA 201	Introduction to Statistics	4	
		Total	**16**	
Spring	COM 206	Business Communication	3	
	FIN 201	Fundamentals of Financial Mgt.	3	ACC 201, MTH 101
	MKT 201	Fundamentals of Marketing	3	ACC 201, ECO 101, ECO 102
	QAN 202	Quantitative Analysis for Business	3	STA 201
		Advised Elective	3	
		Total	**15**	

THIRD YEAR (30 credit hours)				
Term	**Course #**	**Course Title**	**Credit Hours**	**Prerequisite**
Fall	ACC 301	Intermediate Financial Accounting I	3	ACC 202, FIN 201
	COM 208	Public Speaking	3	
	FIN 301	Financial Statement Analysis	3	ACC 202, MTH 101
	FIN 302	Financial Markets and Institutions	3	FIN 201
		Advised Elective	3	
		Total	**15**	
Spring	ACC 302	Intermediate Financial Accounting II	3	ACC 301
	FIN 303	Investment Analysis	3	FIN 201, FIN 301
	BLW 301	Business Law	3	
		Advised Elective	3	
		Advised Elective	3	
		Total	**15**	

FOURTH YEAR (30 credit hours)				
Term	**Course #**	**Course Title**	**Credit Hours**	**Prerequisite**
Fall	ACC 303	Cost Accounting	3	ACC 202, FIN 201
	FIN 305	Commercial Banking		FIN 302
	FIN 400	Portfolio Management	3	FIN 201
		Advised Elective	3	
		Advised Elective	3	
		Total	**15**	
Spring	ACC 401	Advanced Financial Accounting	3	ACC 302, ACC 303
	ACC 304	Auditing	3	ACC 303
	FIN 401	Advanced Financial Management	3	FIN 302
	MGT 406	Business Policy and Strategy - Capstone	3	
		Advised Electives	3	
		Total	**15**	

Please note *that this was an example of a student's program concentrating in Accounting and Finance. It is important to note that students may choose different areas of concentration such as Accounting and Information Systems or Marketing and Management, or any combination of the five areas (Accounting, Finance, Management, Marketing or Information Sysytems). Please see your undergraduate advisor for further information.*

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. The management concentration provides the tools and skills necessary to manage simultaneous complex task, and objectives through rigorous project management training and project simulations. Students will gain 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 306 Entrepreneurship
- MGT 403 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 304 Sales Management
- MKT 401 Marketing Strategy
- MIS 404 E-Commerce
  or other approved Marketing courses

An Example of a Proposed Program of Study for Students

Concentrating in Marketing and Management

FIRST YEAR (29 credit hours)				
Term	**Course #**	**Course Title**	**Credit Hours**	**Prerequisite**
Fall	CMP 101N	Computer Literacy & Information Access	1	
	COM 101N	Academic Writing	3	
	ECO 101	Principles of Microeconomics	3	
	MGT 101	Fundamentals of Management	3	
	MTH 101	Mathematics for Business I	3	
		Total	**13**	
Spring	ACC 201	Fundamentals of Financial Accounting +Lab	4	
	COM 102N	Writing & Reading Across the Curriculum	3	
	ECO 102	Principles of Macroeconomics	3	
	MTH 102	Mathematics for Business II	3	MTH 101
	BIS 201	Business Information Systems	3	CMP 101N
		Total	**16**	

SECOND YEAR (31 credit hours)				
Term	**Course #**	**Course Title**	**Credit Hours**	**Prerequisite**
Fall	ACC 202	Fundamentals of Managerial Accounting	3	ACC 201
	COM 204	Advanced Academic English	3	
	INB 201	Fundamentals of International Business	3	ECO 101, MGT 101
	MIS 201	Fundamentals of MIS	3	CMP 101N
	STA 201	Introduction to Statistics	4	
		Total	**16**	
Spring	COM 206	Business Communication	3	
	FIN 201	Fundamentals of Financial Mgt.	3	ACC 202, MTH 101, STA 201
	MKT 201	Fundamentals of Marketing	3	ACC 201, ECO 101, ECO 102
	QAN 202	Quantitative Analysis for Business	3	STA 201
		Advised Elective	3	
		Total	**15**	

THIRD YEAR (30 credit hours)				
Term	**Course #**	**Course Title**	**Credit Hours**	**Prerequisite**
Fall	COM 208	Public Speaking	3	
	FIN 301	Financial Statement Analysis	3	ACC 202, MTH 101
	MGT 301	Organizational Behavior	3	MGT 101
	MKT 301	Consumer Behavior	3	MKT 201, QAN 202
		Advised Elective	3	
		Total	**15**	
Spring	BLW 301	Business Law	3	
	MGT 302	Managing Human Resources	3	MGT 301
	MGT 403	Project Management	3	FIN 301, MIS 201
	MKT 302	Marketing Research	3	MKT 201, STA 201
		Advised Elective	3	
		Total	**15**	

FOURTH YEAR (30 credit hours)				
Term	**Course #**	**Course Title**	**Credit Hours**	**Prerequisite**
Fall	MGT 303	Management & Leadership Development	3	
	MKT 303	E-Commerce	3	CMP 101N, MIS 201, MKT 301, MKT 302
	MKT 304	Sales Management	3	MKT 201
		Advised Elective	3	
		Advised Elective	3	
		Total	**15**	
Spring	MGT 306	Entrepreneurship	3	FIN 301
	MGT 406	Business Policy & Strategy - Capstone	3	Last semester of Fourth year
	MKT 401	Marketing Strategy	3	MKT 301, MKT 302, MKT 303
		Advised Elective	3	
		Advised Elective	3	
		Total	**15**	

Please note *that this was an example of a student's program concentrating in Marketing and Management. It is important to note that students may choose different areas of concentration such as Accounting and Information Systems or Marketing and Management, or any combination of the five areas (Accounting, Finance, Management, Marketing or Information Sysytems). Please see your undergraduate advisor for further information.*

Management Information Systems

Managers and non-managers alike depend upon information for decision-making. To be useful, that 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

An Example of a Proposed Program of Study for Students

Concentrating in Management Information Systems and Accounting

FIRST YEAR (29 credit hours)				
Term	**Course #**	**Course Title**	**Credit Hours**	**Prerequisite**
Fall	CMP 101N	Computer Literacy & Information Access	1	
	COM 101N	Academic Writing	3	
	ECO 101	Principles of Microeconomics	3	
	MGT 101	Fundamentals of Management	3	
	MTH 101	Mathematics for Business I	3	
		Total	**13**	
Spring	ACC 201	Fundamentals of Financial Accounting +Lab	4	
	COM 102N	Writing & Reading Across the Curriculum	3	
	ECO 102	Principles of Macroeconomics	3	
	MTH 102	Mathematics for Business II	3	MTH 101
	BIS 201	Business Information Systems	3	CMP 101N
		Total	**16**	

SECOND YEAR (31 credit hours)				
Term	**Course #**	**Course Title**	**Credit Hours**	**Prerequisite**
Fall	ACC 202	Fundamentals of Managerial Accounting	3	ACC 201
	COM 204	Advanced Academic English	3	
	INB 201	Fundamentals of International Business	3	ECO 101, MGT 101
	MIS 201	Fundamentals of MIS	3	CMP101
	STA 201	Introduction to Statistics	4	
		Total	**16**	
Spring	COM 206	Business Communication	3	
	FIN 201	Fundamentals of Financial Mgt.	3	ACC 201, MTH101, STA 201
	MKT 201	Fundamentals of Marketing	3	ACC 201, ECO 101, ECO 102
	QAN 202	Quantitative Analysis for Business	3	STA 201
		Advised Elective	3	
		Total	**15**	

THIRD YEAR (30 credit hours)				
Term	**Course #**	**Course Title**	**Credit Hours**	**Prerequisite**
Fall	ACC 301	Intermediate Financial Accounting I	3	ACC 202, FIN 201
	COM 208	Public Speaking	3	
	FIN 301	Financial Statement Analysis	3	ACC 202, MTH 101
	MIS 301	Fundamentals of Database Mgt.	3	MIS 201
		Advised elective*	3	
		Total	**15**	
Spring	ACC 302	Intermediate Financial Accounting II	3	ACC 301
	LAW 301	Business Law	3	
	MIS 303	Introduction to Systems Analysis	3	MIS 301, MIS 302
	MIS 302	Advanced Database Mgt.	3	MIS 301
		Advised Elective*	3	
		Total	**15**	

*computer programming courses are strongly recommended.

FOURTH YEAR (30 credit hours)				
Term	**Course #**	**Course Title**	**Credit Hours**	**Prerequisite**
Fall	ACC 303	Cost Accounting	3	ACC 202, FIN 201
	ACC 304	Auditing	3	ACC 303
	QAN 302	Project Management	3	QAN 202
		Advised Elective	3	
		Advised Elective	3	
		Total	**15**	
Spring	ACC 401	Advanced Financial Accounting	3	ACC 302, ACC 303
	MGT 406	Business Policy & Strategy – Capstone	3	Last semester of 4 year
	MIS 401	Applied Systems Design	3	MIS 303
	MIS 404	Internet Business Applications	3	MIS 303
		Advised Electives	3	
		Total	**15**	

Abbreviations: **ELC:** Elective, **MR:** Major Requirement, **URE:** University Requirement

Please note *that this was an example of a student's program concentrating in Management Informatiom Systems. It is important to note that students may choose different areas of concentration such as Accounting and Information Systems or Marketing and Management, or any combination of the five areas (Accounting, Finance, Management, Marketing or Information Sysytems). Please see your undergraduate advisor for further information.*

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 witnessed immense developments in computers and information technologies. The rate of new technical advances in recent years shows no sign of diminishing. The following is 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 database 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.
- 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.
- Provide service courses to students in the college and the university that are appropriate for the business core and for students seeking general knowledge of the applications of information systems in business.

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 data.
- 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, and 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 much greater 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 on 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 by 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 on hands-on training and practice reflects our desire that a student who complete this degree program must have working knowledge and skills in analyzing, designing, implementing, and deploying information systems. The second and third emphases will greatly differentiate the Management Information Systems program from the computer science program and better match the increasing needs from a large number of businesses and public organizations. The rule of thumb 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.

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.M.I.S. transfer students are required to take Business Policy and Strategy and 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. Transfer credit may be conditional upon the successful completion of a more advanced course at the American University of Sharjah.

Program for Students

Concentrating in M.I.S.

FIRST YEAR (29 credit hours)				
Term	**Course #**	**Course Title**	**Credit Hours**	**Prerequisite**
Fall	CMP 101N	Computer Literacy & Information Access	1	
	COM 101N	Academic Writing	3	
	ECO 101	Principles of Microeconomics	3	
	MGT 101	Fundamentals of Management	3	
	MTH 101	Mathematics for Business I	3	
		Total	**13**	
Spring	ACC 201	Fundamentals of Financial Accounting +Lab	4	
	COM 102N	Writing & Reading Across the Curriculum	3	
	ECO 102	Principles of Macroeconomics	3	
	MTH 102	Mathematics for Business II	3	MTH 101
	BIS 201	Business Information Systems	3	CMP 101N
		Total	**16**	

SECOND YEAR (31 credit hours)				
Term	**Course #**	**Course Title**	**Credit Hours**	**Prerequisite**
Fall	ACC 202	Fundamentals of Managerial Accounting	3	ACC 201
	COM 204	Advanced Academic English	3	
	INB 201	Fundamentals of International Business	3	ECO 101, MGT 101
	MIS 201	Fundamentals of MIS	3	CMP 101N
	STA 201	Introduction to Statistics	4	
		Total	**16**	
Spring	COM 206	Business Communication	3	
	FIN 201	Fundamentals of Financial Mgt.	3	ACC 201, MTH 101,STA 201
	MKT 201	Fundamentals of Marketing	3	ACC 201, ECO 101, ECO 102
	QAN 202	Quantitative Analysis for Business	3	STA 201
		Advised Elective	3	
		Total	**15**	

THIRD YEAR (30 credit hours)				
Term	**Course #**	**Course Title**	**Credit Hours**	**Prerequisite**
Fall	MIS 202	Advanced MIS	3	MIS 201
	COM 208	Public Speaking	3	
	MIS 301	Fundamentals of Database Mgt.	3	MIS 201
		Advised elective*	3	
		Advised elective*	3	
		Total	**15**	
Spring	MGT 301	Organizational Behavior	3	MGT 101
	LAW 301	Business Law	3	
	MIS 303	Introduction to Systems Analysis	3	MIS 301
	MIS 302	Advanced Database Mgt.	3	MIS 301
		Advised Elective*	3	
		Total	**15**	

*Choice of computer programming courses, such as Visual Basic, Java, and C++.

FOURTH YEAR (30 credit hours)				
Term	**Course #**	**Course Title**	**Credit Hours**	**Prerequisite**
Fall	MGT 403	Project Management	3	FIN 301, MIS 201
	MIS 401	Business Data Communications	3	MIS 201
	MIS 402	Knowledge Management & Expert Systems	3	MIS 201
		Advised Elective	3	
		Advised Elective	3	
		Total	**15**	
Spring	MGT 406	Business Policy & Strategy – Capstone	3	Last semester of 4th year
	MIS 403	Applied Systems Design	3	MIS 401
	MIS 404	Internet Business Applications	3	MIS 303
		Advised Electives	3	
		Advised elective	3	
		Total	**15**	

Abbreviations: **ELC:** Elective, **MR:** Major Requirement

The Executive Masters 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. It is taught mainly by full-time faculty members of the AUS Business School.

The AUS E.M.B.A. is committed to the idea of helping managers in the Gulf region to think globally, to act locally and to 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 rapidly 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 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) compose the "core" courses.

The E.M.B.A. program can be completed in 24 months if the foundation courses are required and 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 normally with a 4 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 the needed business skills, but also apply them through the extensive use of the simulated business cases.

Foundation Courses

The foundation courses are designed to provide the participants who do not have 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 & Management.

The foundation courses are:

- Economic Analysis in an Interdependent Environment
- Theories of Management & 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 hands on a 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 & 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 will be 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 the 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 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 + 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 and motivation, 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 3 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 admissions 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 and Faculty
- Chemical Engineering
- Computer Engineering
- Civil Engineering
- Electrical and Electronic Engineering
- Mechanical Engineering

Dean and Faculty

Dean

Mogens Henriksen

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 student is 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 interaction 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 engi-

neering 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

Abdulrahim El-Keib (Electrical Engineering)

Mogens Henriksen (Dean, Mechanical Engineering)

Mohammed Salah Hameed (Chemical Engineering)

Associate Professor

Yousef Al Assaf (Electrical Engineering)

Azm Al Homoud (Civil Engineering)

Hasan Al Nashash (Electrical Engineering)

Louis J. Everett (Associate Dean, Mechanical Engineering)

Mahmoud A. Manzoul (Computer Engineering)

David N. Sawyer (Chemical Engineering)

Assistant Professor

Akmal S. Abdelfateh (Civil Engineering)

Hany El-Kadi (Mechanical Engineering)

Nasser N. Qaddoumi (Electrical Engineering)

Sami W. Tabsch (Civil Engineering)

Hamdy A. Kandil (Mechanical Engineering)

B. S. 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 their chosen field. The university requirements include foundation courses in mathematics, science, the humanities, the social sciences and in Arabic, the 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.

Students may not enroll in any of the engineering foundation courses unless they have been fully admitted to the School of Engineering.

A similar examination, used for assessment purposes, is conducted before graduation.

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. The language of instruction in the School of Engineering is English.

Accreditation

Since the AUS School of Engineering is new and has not yet graduated its first class, it is not yet eligible for accreditation. Prospective students and other stakeholders should note that the programs are designed to satisfy all the applicable, as well as the general criteria of the Engineering Accreditation Commission (EAC) of the Accreditation Board for Engineering and Technology (Criteria 2000). The programs will be submitted for review as the first graduates complete their programs.

Admission to the Program

Formal admission to a major by all the programs in the School of Engineering requires a cumulative grade point average (GPA) of 2.00.

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 2.00 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 2.00 or better in every engineering course in the major.

Chemical Engineering

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 toward 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.

B.S. in Chemical Engineering

University Graduation Requirements

A total of 140 credit hours, including the following courses:

University Requirements

- ARA XXX Arabic Language and Literature
- 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.*

Requirements for the Major

- CHE 205 Principles of Chemical Engineering I
- CHE 202 Principles of Chemical Engineering II
- CHE 204 Chemical Engineering Thermodynamics I
- CHE 207 Fluid Flow
- CHE 210 Introduction to Chemical Engineering
- CHE 301 Heat Transfer
- CHE 305 Chemical Engineering Thermodynamics II
- CHE 306 Chemical Processes
- CHE 321 Chemical Reaction Engineering
- CHE 322 Unit Operation I
- CHE 322L Unit Operations I Laboratory
- CHE 323 Unit Operations II

- CHE 323L Unit Operations II Laboratory
- CHE 332 Cost Estimation and Economics
- CHE 334 Process Design I
- CHE 411 Unit Operations III
- CHE 411L Unit Operations III Laboratory
- 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 Laboratory
- CHM 331 Physical Chemistry
- CHM 335 Physical Chemistry laboratory
- MTH 104 Calculus II
- MTH 203 Calculus III
- MTH 205 Differential Equations
- NGN 225 Electrical Circuits & 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

(B.S. Ch. E.)

FIRST YEAR (36 credit hours)				
Term	**Course #**	**Course Title**	**Credit Hours**	**Fulfills**
Fall	CHM 101	General Chemistry I	4	MR/URE
	PHY 101	General Physics I	4	MR/URE
	COM 101N	Academic Writing	3	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 102N	Writing & Reading Across the Curriculum	3	URE
	MTH 104	Calculus II	4	MR/URE
	NGN 111	Introduction to Engineering II	2	MR/URE
	NGN 231	Material Science	3	MR
	ARA XXX	Arabic Language	3	URE
		Total	**19**	

SECOND YEAR (40 credit hours)				
Term	**Course #**	**Course Title**	**Credit Hours**	**Fulfills**
Fall	CHE 205	Principles of Chemical Engineering I	2	MR
	COM XXX	Communications III	3	URE
	MTH 203	Calculus III	4	MR
	CHE 210	Introduction to Chemical Engineering	2	MR
	CHM 215	Organic Chemistry I	3	MR
	HUM XXX	Humanities Elective	3	URE/ELC
		Total	**17**	
Spring	CHE 206	Principles of Chemical Engineering II	2	MR
	CHE 204	Chemical Engineering Thermodynamics I	3	MR
	CHM 216	Organic Chemistry II	3	MR
	CHM 216L	Organic Chemistry laboratory	1	MR
	COM XXX	Communications IV	3	URE
	MTH 205	Differential Equations	3	MR
	NGN 211	Introduction to Engineering III	2	MR/URE
		Total	**17**	
Summer	CHE 207	Fluid Flow	3	MR
	HUM XXX	Humanities Elective	3	URE/ELC
		Total	**6**	

THIRD YEAR (35 credit hours)				
Term	**Course #**	**Course Title**	**Credit Hours**	**Fulfills**
Fall	CHE 301	Heat Transfer	3	MR
	CHE 322	Unit Operations I	3	MR
	CHE 322L	Unit Operations I Laboratory	1	MR
	CHM 331	Physical Chemistry	3	MR
	CHM 335	Physical Chemistry Laboratory	2	MR
	CHE 305	Chemical Engineering Thermodynamics II	3	MR
	COM 208	Public Speaking	3	MR
		Total	**18**	
Spring	CHE 306	Chemical Processes	2	MR
	CHE 321	Chemical Reactions Engineering	3	MR
	CHE 323	Unit Operations II	3	MR
	CHE 323L	Unit Operations II Laboratory	1	MR
	CHE 332	Cost Estimation & Economics	3	MR
	CHE 324	Process Design I	2	MR
		Elective	3	URE/ELC
		Total	**17**	

FOURTH YEAR (29credit hours)				
Term	**Course #**	**Course Title**	**Credit Hours**	**Fulfills**
Fall	CHE 411	Unit Operations III	2	MR
	CHE 411L	Unit Operations III	1	MR
	CHE 421	Process Control	3	MR
	CHE 432	Process Design II	2	MR
	CHE 498	Design Project I	2	MR
		Elective	3	URE/ELC
	CHE XXX	Technical Elective I	3	MR/ELC
		Total	**16**	
Spring	CHE 430	Computer Methods in Chemical Engineering	2	MR
	CHE 433	Instrumental Analysis	3	MR
	CHE 499	Design Project II	2	MR
	NGN 225	Electric Circuits and Devices	3	MR
	CHE XXX	Technical Elective II	3	MR/ELC
		Total	**13**	

Abbreviations: **ELC:** Elective, **MR:** Major Requirement, **URE:** University Requirement

Computer Engineering

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 field of engineering today is among the fastest growing of all career fields. 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 skill 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

A total of 140 credit hours, including:

University Requirements

- ARA XXX Arabic Language and Culture
- 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

(B.S.Co.E.)

FIRST YEAR (33 credit hours)				
Term	**Course #**	**Course Title**	**Credit Hours**	**Fulfills**
Fall	COM XXX	Communication I	3	URE
	MTH 103	Calculus I	4	URE
	NGN 110	Introduction to Engineering I	2	MR/URE
	HUM XXX	Humanities Elective	3	URE
	PHY 101	General Physics I	4	URE
		Total	**16**	
Spring	COM XXX	Communication II	3	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	MR/URE
		Total	**17**	

SECOND YEAR (40 credit hours)				
Term	**Course #**	**Course Title**	**Credit Hours**	**Fulfills**
Fall	COE 221	Digital Systems	3	URE
	ELE 211	Electrical Circuits I	3	MR
	COMXXX	Communication III	3	URE
	MTH 205	Differential Equations	3	MR
	ARA XXX	Arabic Language	3	URE
	COE 210	Introduction to Computer Engineering	2	MR/URE
		Total	**17**	
Spring	COE 221L	Digital Systems Lab.	1	MR
	COE 222	Comptational Methods in Electrical & Comp. Eng'g	4	MR/URE
	ELE 212	Electrical Circuits II	3	MR
	ELE 212L	Electric Circuits Lab.	1	MR
	ELE 241	Electronics I	3	MR
	MTH 221	Linear Algebra	3	MRMR
	NGN 211	Introduction to Engineering III	2	URE
		Total	**17**	
Summer	COE 331	Microprocessors and Computer Systems	3	MR
		Elective	3	URE
		Total	**6**	

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

THIRD YEAR (34 credit hours)				
Term	**Course #**	**Course Title**	**Credit Hours**	**Fulfills**
Fall	ELE 311	Engineering Electromagnetics	3	MR
	ELE 321	Signals & Systems	3	MR
	ELE 341	Electronics II	3	MR
	HUM XXX	Humanities Elective	3	URE
	COE 331L	Microprocessors and Computer Systems Lab.	1	MR
	ELE 241L	Electronics I Lab.	1	MR
	ELE 353	Control Systems I	3	MR
		Total	**17**	
Spring	COE 381	Operating Systems	3	MR
	ELE 361	Communications I	3	MR
	SS XXX	Social Sciences Elective	3	URE
	ELE 332	Measurements and Instrumentation	3	MR
	MTH 213	Discrete Mathematics	3	MR
	ELE 341L	Electronics II lab	1	MR
	ELE 353L	Control Systems I Lab	1	MR
		Total	**17**	

FOURTH YEAR (33 credit hours)				
Term	**Course #**	**Course Title**	**Credit Hours**	**Fulfills**
Fall	COE XXX	COE Elective	3	MR
	COE 411	Computer Architecture and Organization	3	MR
	COE 498	Design Project I	2	MR
	COM XXX	Communication IV	3	URE
	ELE 332L	Measurements and Instrumentation Lab	1	MR
	ELE 361L	Communications I Lab	1	MR
	COE 371	Computer Networks	3	MR
		Total	**16**	
Spring	COE XXX	COE Elective	3	MR
	COE XXX	COE Elective	3	MR
	COE 430	Algorithms and Data Structures	3	MR
	COE 499	Design Project II	3	MR
	COM 208	Public Speaking	3	MR
	COE 371L	Computer Networks Lab	1	MR
	COE 456L	Computer Systems Applications lab	1	MR
		Total	**17**	

Abbreviations: **MR:** Major Requirement, **URE:** University Requirement

Civil Engineering

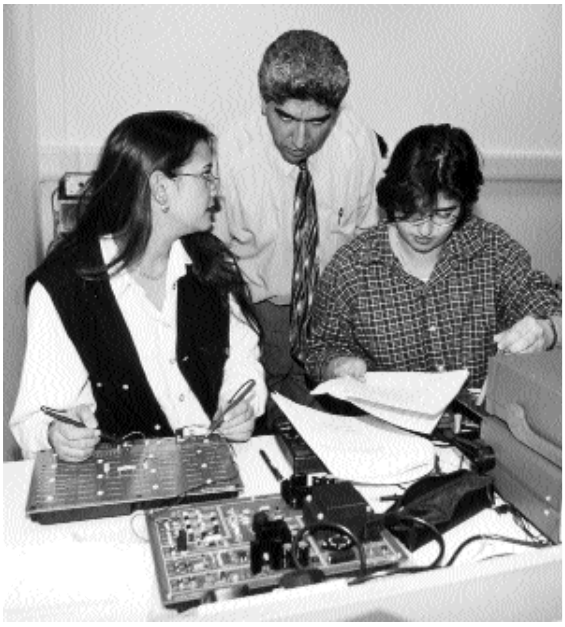
Society has experienced enormous social and technological changes which offer civil engineers new challenges and opportunities. Civil engineers are involved in planning, design, construction and management activities of systems involving the natural and man-made environment. Civil engineers work on the 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 in contracting firms.

Bachelor of Science in Civil Engineering (B.S.C.E.)

University Graduation Requirements

A total of 140 credit hours, including:

University Requirements

- ARA XXX Arabic Language and Culture
- 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
- Statistics*
- Computer Literacy*
- PHY 101 General Physics I

**These university required competencies may be satisfied through designated courses in engineering as well as through extensiveuse 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 Structural Analysis I
- 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 Introduction to Geotechnical Engineering
- CVE 333 Geotechnical Engineering Design
- CVE 341 Water Engineering I
- CVE 351 Environmental Engineering I
- 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
- MTH 104 Calculus II
- MTH 203 Calculus III
- MTH 205 Differential Equations

Every civil engineering student must complete two of the following three science courses noted by "*":

- CHM 102N General Chemistry II*
- PHY 102 General Physics*
- BIO XXX Biology*
- 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

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 432 Structural Analysis II
- CVE 433 Selected Topics in Mechanics and Structural Analysis
- CVE 434 Structural Steel Design
- CVE 437 Advanced Concrete Technology
- CVE 439 Advanced Mechanics of Materials

Geotechnical Engineering

- CVE 441 Advanced Soil Mechanics
- CVE 442 Advanced Foundation Engineering
- CVE 443 Selected Topics in Geotechnical Engineering
- CVE 444 Rock Mechanics
- CVE 445 Environmental Geotechnology
- CVE 446 Geotechnical Dam Engineering

Water Engineering

- CVE 447 Irrigation and Drainage Engineering
- CVE 448 Coastal and Harbor Engineering I
- CVE 449 Coastal and Harbor Engineering II
- CVE 452 Selected Topics in Water Engineering
- CVE 466 Water Engineering II

Environmental Engineering

- CHM 221 Organic Chemistry I
- CVE 450 Environmental Engineering II
- CVE 453 Selected Topics in Environmental Engineering
- CVE 455 Environmental Impact Assessment, Protection and Public Health

Project Management

- CVE 451 Contracts and Specifications
- 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
- CVE 461 Advanced Surveying

Proposed Sequence of Study

B.S. in Civil Engineering

(B.S.C.E.)

FIRST YEAR (34 credit hours)				
Term	**Course #**	**Course Title**	**Credit Hours**	**Fulfills**
Fall	CHM 101	General Chemistry I	4	MR/URE
	COM 101N	Academic Writing	3	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	General Chemistry II	4	MR/URE
	COM 102N	Writing & Reading Across the Curriculum	3	URE
	MTH 104	Calculus II	4	MR/URE
	NGN 111	Introduction to Engineering II	2	MR/URE
	PHY 102	General Physics II	4	MR/URE
		Total	**17**	

SECOND YEAR (42 credit hours)				
Term	**Course #**	**Course Title**	**Credit Hours**	**Fulfills**
Fall	COM XXX	Communication III	3	URE
	MTH203	Calculus III	4	MR/URE
	NGN 221	Statics	3	MR
	CVE 231	Engineering/Environmental Geology	3	MR
	CVE 210	Introduction to Civil Engineering	2	MR/URE
	CVE 241	Surveying and Geomatics	3	MR
		Total	**18**	
Spring	COM XXX	Communication IV	3	URE
	NGN 211	Introduction to Engineering III	2	MR/URE
	H&SS XXX	H & SS Elective	3	URE
	MTH 205	Differential Equations	3	MR/URE
	NGN 223	Mechanics of Materials	3	MR
	NGN 231	Materials Science	3	MR
	CVE 201	Civil Engineering Lab. I	1	MR
		Total	**18**	
Summer	NGN 222	Dynamics	3	MR
	NGN 241	Fluid Mechanics	3	MR
		Total	**6**	

THIRD YEAR (36 credit hours)				
Term	**Course #**	**Course Title**	**Credit Hours**	**Fulfills**
Fall	CVE 321	Numerical Meth. and Comp. Appl. in CVE	3	MR
	CVE 221	Materials of Construction and Quality Control	3	MR
	CVE 331	Introduction to Geotechnical Engineering	3	MR
	CVE 301	Structural Analysis I	3	MR
	CVE 341	Water Engineering I	3	MR
	CVE 302	Civil Engineering Lab. II	1	MR
	CVE 303	Civil Engineering Lab. III	1	MR
		Total	**17**	
Spring	ARA XXX	Arabic Language	3	URE
	CVE 351	Environmental Engineering I	3	MR
	CVE 333	Geotechnical Eng. Design	3	MR
	CVE 361	Transportation Engineering	3	MR
	CVE401	Civil Engineering Lab. IV	1	MR
	CVE311	Structural Design	3	MR
		Elective	3	MR
		Total	**19**	

FOURTH YEAR (28 credit hours)				
Term	**Course #**	**Course Title**	**Credit Hours**	**Fulfills**
Fall	COM 208	Public Speaking	3	URE
	CVE/NGNXXX	CVE/NGN Elective	3	MR
	CVE464	Building Construction	3	MR
	CVE467	Project Estimating, Planning and Control	3	MR
	CVE 498	Civil Engineering Design Project I	1	MR
		Elective	3	URE
		Total	**16**	
Spring	CVE/NGN XXX	CVE/NGN Elective	3	MR
	CVE/NGN XXX	CVE/NGN Elective	3	MR
	CVE 499	Civil Engineering Design Project II	3	MR
		Elective	3	URE
		Total	**12**	

Abbreviations: **ELC:** Elective, **MR:** Major Requirement, **URE:** University Requirement

Electrical and Electronic Engineering

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 a student 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 plays 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 and medical electronics.

The B.S.E.E in Electrical and Electronic Engineering degree 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

A total of 140 Credit hours including:

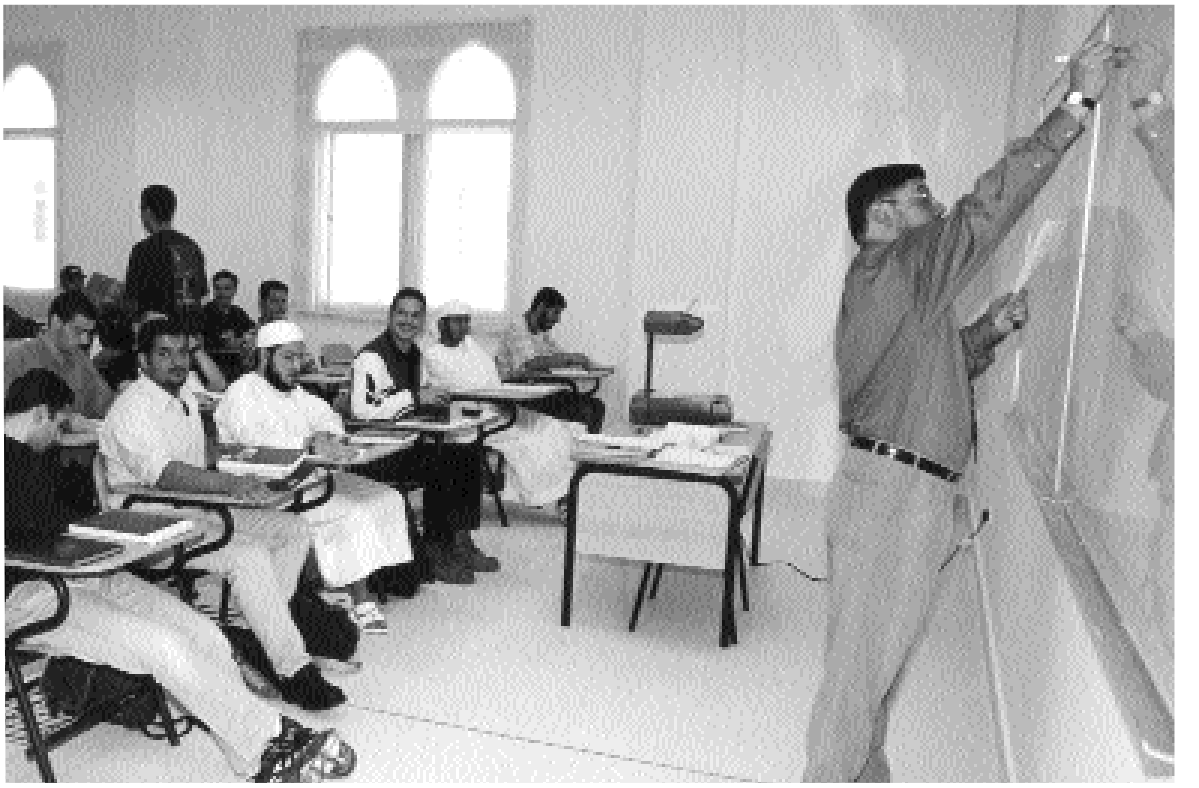
University Requirements

- ARA XXX Arabic Language and Culture
- 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 Machines
- ELE 353 Control Systems I
- ELE 353L Control Systems I Lab
- ELE 361 Communications I
- ELE 361L Communications I Lab
- ELE 371 Power Systems
- ELE 371L Electric Machines and Power Systems Lab



- 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 Electronics I
- ELE 433 Medical Electronics 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

Proposed Sequence of Study

B.S. in Electrical and Electronic Engineering

(B.S.E.E.)

FIRST YEAR (33 credit hours)				
Term	**Course #**	**Course Title**	**Credit Hours**	**Fulfills**
Fall	HUM XXX	Humanities Elective	3	URE
	COM XXX	Communication I	3	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	URE
	NGN 111	Introduction to Engineering II	2	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 #**	**Course Title**	**Credit Hours**	**Fulfills**
Fall	COE 221	Digital Systems	3	MR
	ELE 210	Introduction to Electrical and Electronic Engg	2	MR/URE
	COM XXX	Communication III	3	URE
	NGN 224	Statics & Dynamics	3	MR
	ELE 211	Electric Circuits I	3	MR
	MTH 205	Differential Equations	3	MR
		Total	**17**	
Spring	NGN 211	Introduction to Engineering III	2	MR/URE
	COE 222	Computational Methods in Electrical & Comp. Eng.	4	MR/URE
	ELE 212	Electric Circuits II	3	MR
	ELE 212L	Electric Circuits Lab	1	MR
	ELE 241	Electronics I	3	MR
	COE 221L	Digital Systems Lab	1	MR
	MTH 221	Linear Algebra	3	MR
		Total	**17**	
Summer	COE 331	Microprocessors and Computer Systems	3	MR
		Elective	3	URE
		Total	**6**	

THIRD YEAR (34 credit hours)				
Term	**Course #**	**Course Title**	**Credit Hours**	**Fulfills**
Fall	ELE 311	Engineering Electromagnetics	3	MR
	ELE 321	Signals & Systems	3	MR
	COE 331L	Microprocessors and Computer Systems Lab	1	MR
	ELE 341	Electronics II	3	MR
	ELE 241L	Electronics I Lab	1	MR
	ELE 353	Control Systems I	3	MR
	HUM XXX	Humanities Elective	3	URE
		Total	**17**	
Spring	ELE 351	Electric Machines	3	MR
	ELE 332	Measurements and Instrumentation	3	MR
	MTH 213	Discrete Mathematics	3	MR
	ELE 353L	Control Systems 1 Lab	1	MR
	ELE 341L	Electronics II Lab	1	MR
	ELE 361	Communications I	3	MR
		Elective	3	URE
		Total	**17**	

FOURTH YEAR (33 credit hours)				
Term	**Course #**	**Course Title**	**Credit Hours**	**Fulfills**
Fall	ARA XXX	Arabic Language	3	URE
	ELE 371	Power Systems	3	MR
	ELE 371L	Electric Machines and Power Systems Lab	1	MR
	ELE 332L	Measurements and Instrumentation Lab	1	MR
	ELE 361L	Communications I Lab	1	MR
	ELE XXX	ELE Elective	3	MR
	ELE 498	Design Project I	2	MR
	COM XXX	Communication IV	3	URE
		Total	**17**	
Spring	COM 208	Public Speaking	3	URE
	ELE XXX	ELE Elective	3	MR
	ELE XXX	ELE Elective	3	MR
	COE 444	Digital Signal Processing	3	MR
	ELE XXXL	ELE Elective Lab	1	MR
	ELE 499	Design Project II	3	MR
		Total	**16**	

Abbreviations: **MR:** Major Requirement, **URE:** University Requirement

Mechanical Engineering

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.

B.S. in Mechanical Engineering

University Graduation Requirements

A total of 140 credit hours including the following courses:

University Requirements

- ARA XXX Arabic Language and Culture
- 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 I
- ELE 351 Electric Machines
- 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 one of the following recognized areas in mechanical engineering: Mechatronics, manufacturing and control; design, mechanics and materials; thermosciences or engineering management.

Technical Electives

MECHATRONICS, MANUFACTURING & CONTROL

- MCE 418 Modeling & Control of Engineering Systems 3
- MCE 439 CIM in Industrial Systems 3
- MCE 464 Introduction to Robotics 3
- ELE 444 Control Systems II 3
- ELE 471 Digital Control Systems 3
- ELE 472 Nonlinear Control 3
- NGN 465 Quality Control for Production Systems 3
- MCE 495 Selected Topics in Mechanical Engineering 3

DESIGN, MECHANICS & MATERIALS

- MCE 435 Analytical Design I 3
- MCE 436 Analytical Design II 3
- MCE 473 Applied Finite Elements Analysis 3
- MCE 476 Design Optimization 3
- MCE 477 Composite Materials 3
- CVE 439 Advanced Mechanics of Materials 3
- MCE 495 Selected Topics in Mechanical Engineering 3

THERMOSCIENCES

- MCE 446 Refrigeration and Air Conditioning 3
- MCE 448 Heat Transfer II 3
- MCE 449 Renewable Energy Systems 3
- MCE 473 Applied Finite Elements Analysis 3
- MCE 492 Advanced Fluid Mechanics 3
- MCE 493 Turbomachines 3
- MCE 495 Selected Topics in Mechanical Engineering 3

ENGINEERING MANAGEMENT

- NGN 461 Management for Engineers 3
- NGN 462 Engineering Project Management 3
- NGN 463 Quantitative Engineering Management I 3
- NGN 464 Engineering Economics 3
- NGN 465 Quality Control for Production Systems 3
- NGN 466 Quantitative Engineering Management II 3

Proposed Sequence of Study

Bachelor of Science in Mechanical Engineering

(B.S.M.E.)

FIRST YEAR (34 credit hours)				
Term	**Course #**	**Course Title**	**Credit Hours**	**Fulfills**
Fall	CHM 101	General Chemistry I	4	MR/URE
	COM 101N	Academic Writing	3	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 102N	Writing & Reading Across the Curriculum	3	URE
	MTH 104	Calculus II	4	MR/URE
	NGN 111	Introduction to Engineering II	2	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 #**	**Course Title**	**Credit Hours**	**Fulfills**
Fall	NGN 225	Electrical and Electronic Circuits	3	MR
	MTH 203	Calculus III	4	MR
	MCE 210	Introduction to Mechanical Engineering	2	MR
	NGN 221	Statics	3	MR
	NGN 231	Materials Science	3	MR
	HUM XXX	Humanities Elective	3	URE
		Total	**18**	
Spring	NGN 211	Introduction to Engineering III	2	MR/URE
	MTH 205	Differential Equations	3	MR
	NGN 222	Dynamics	3	MR
	MCE 231	Manufacturing Techniques	3	MR
	SS XXX	Social Science Elective	3	URE
	COM XXX	Communication III	3	URE
		Total	**17**	
Summer	NGN 223	Mechanics of Materials	3	MR
	MCE 241	Thermodynamics	3	MR
		Total	**6**	

THIRD YEAR (31 credit hours)				
Term	**Course #**	**Course Title**	**Credit Hours**	**Fulfills**
Fall	COM XXX	Communication IV	3	URE
	MCE 311	Engineering Measurements	3	MR
	MCE 321	Mechanical Design I	3	MR
	MCE 335	Computational Techniques	3	MR
	NGN 241	Fluid Mechanics	3	MR
		Total	**15**	
Spring	MCE 316	Theory of Machines and Mechanisms	3	MR
	MCE 322	Mechanical Design II	3	MR
	MCE 344	Heat Transfer I	3	MR
	MCE 312	Control Systems	3	MR
	MCE 312L	Engineering Measurements and Control Lab	1	MR
	HUM XXX	Humanities Elective	3	URE
		Total	**16**	

FOURTH YEAR (34 credit hours)				
Term	**Course #**	**Course Title**	**Credit Hours**	**Fulfills**
Fall	MCE 423	Mechanical Vibrations	3	MR
		Elective	3	MR/ELC
	MCE 445	Energy Systems	3	MR
	MCE 498	Design Project I	2	MR
	COM 208	Public Speaking	3	URE
	ELE 351	Electric Machines	3	MR
		Total	**17**	
Spring		Elective	3	MR
	MCE 447	Internal Combustion Engines	3	MR
		Elective	3	MR
		Elective	3	MR/ELC
	MCE 499	Design Project II	2	MR/ELC
	ARA XXX	Arabic Language	3	URE
		Total	**17**	

Abbreviations: **ELC:** Elective (from the list of approved technical electives in Mechanical Engineering),
MR: Major Requirement, **URE:** University Requirement

Continuing Education Center (CEC)

- Director and Staff
- Admission Requirements and Procedures
- CEC Programs
- Needs Assessments and Customized Training Programs

Director and Staff

Director

Ron Mohr

Program Manager

Suha Saghban Abouzeid

The Continuing Education Center (CEC) provides access to the educational resources of AUS and offers quality educational and training programs to meet the ongoing professional and personal needs of the United Arab Emirates' adult community. The CEC offers programs, workshops, seminars, conferences, postgraduate, and various other educational and training opportunities both on campus and in different locations around the Emirates in order to meet the diverse needs of individuals and organizations. All these activities are taught by leading experts who bring their hands-on experience into the classroom. Courses are generally offered in English but the CEC also has access to resources in other languages.

AUS enjoys the significant and mutual cooperation of such institutions as American University in Washington, D.C. (AU) and Texas A&M University.

Goals of the Continuing Education Center

The Center meets its goals in the following ways:

- The role of AUS, as charged by His Highness Sheikh Dr. Sultan Bin Mohammed Al Qassimi, Supreme Council Member, Ruler of Sharjah and President of the American University of Sharjah, is for the university to be a distinguished local and regional center not only for academic programs but also for training and development, continuing education and degree programs offered on a part-time basis.
- Therefore, CEC offers programs to further individual growth, to strengthen all segments of the Emirates professional community and to assist with the emiratization of the workforce.
- Furthermore, the CEC assists executives and professionals in Sharjah and the neighboring Emirates to develop standards of excellence, to prepare themselves for new challenges and to broaden their perspectives.
- Opportunities are also provided to practitioners in some of the basic professions such as management, accounting, marketing, information technology and other areas of interest to expand their knowledge in their own or related disciplines and help them in their continuing education.

Admission Requirements and Procedures

Application and registration requirements vary depending on the program chosen. It is recommended that registrants for all CEC programs contact the CEC office well in advance especially when applying for the E.M.B.A. program.

CEC Programs

The Executive Master's of Business Administration (E.M.B.A.)

For the professional manager today, a credible MBA 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 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. It is taught mainly by full-time faculty members of the AUS Business School.

The AUS E.M.B.A. is committed to the idea of helping managers in the Gulf region to think globally, to act locally and to 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 rapidly 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 to make sound business decisions.
- Business is constantly changing. Traditional busi-

ness 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

For a complete description of the content of this program, please turn to the section on the School of Business and Management in this catalog.

For admissions 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

Workshop Series

As part of its ongoing activities, the CEC will offer a series of public workshops on a variety of topics relevant to specific sectors delivered by experts from AUS faculty or affiliated universities and organizations. A brochure outlining workshop details will be issued for each semester.

Needs Assessments & Customized Training Programs

Your organization requires a flexible, highly skilled workforce and management capable to meet the challenges of today's dynamic and competitive environment.

Our workshops 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 workshops' content, you will naturally benefit from the discussion and networking which results from both the formal and informal aspects of each workshop.

In addition to accessing our many planned workshops and seminars, The CEC can assist your organization in many ways.

By working in partnership with your key management staff, we can:

- assess internal and external needs,
- set training objectives,
- develop a training plan for individuals or the organization,
- develop customized courses and materials to meet your goals.

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 to ensure that the objectives, materials, and delivery move the 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.