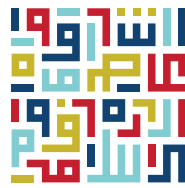


This cover celebrates the selection of the Emirate of Sharjah as the Islamic Culture Capital for the year 2014.





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الشارقة عاصمة الثقافة الإسلامية  
SHARJAH ISLAMIC CULTURE CAPITAL

2014





**His Highness Sheikh Dr. Sultan Bin Mohammad Al Qassimi**

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



# Chancellor's Message

As a premier institution of higher education in the Middle East, American University of Sharjah offers a distinctive blend of liberal arts and professional education at both the undergraduate and graduate levels. This catalog will familiarize you with the university's programs, policies, people and ethos and will act as your guide as you explore the multi-faceted academic and extracurricular activities that comprise campus life.

In synch with the vision of our founder, His Highness Sheikh Dr. Sultan Bin Mohammed Al Qassimi, Member of the Supreme Council of the United Arab Emirates and Ruler of Sharjah, the university has grown from strength to strength over the past 17 years, garnering international acclaim for its rigorous academic programs and its multicultural campus environment. We are proud of our highly qualified and experienced faculty members who are committed to providing the best education and mentoring to our students. Hailing from 55 nations across the globe and with terminal degrees earned at some of the best universities in the world, they are experts in their respective disciplines and are committed to teach and mentor students as well as actively engage in research and scholarship. This, coupled with our commitment to enhancing research facilities and opportunities for our faculty, is one of the key factors for our renown throughout the region.

Our goal is to make the AUS experience unique and distinct, one that enriches the students as they make their way through their years at the university. We do this by providing our students with a well-rounded education, one that empowers them, and helps them to broaden their horizons and open their minds to new ways of seeing and understanding and being global citizens. Our students are encouraged to debate and discuss issues and take practical steps to put theory into practice; to become problem solvers, creative thinkers, and leaders as they engage in issues both within and outside the classroom.

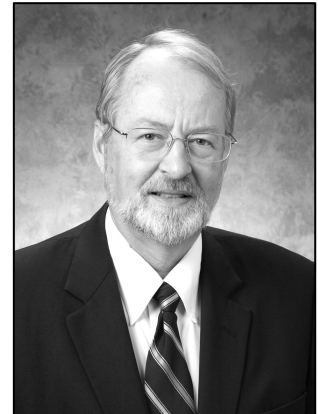
AUS provides its campus community with a multinational environment in which to study, learn, live, and grow. We are very proud of our multicultural campus and student body comprising some 6,000 students from 92 countries. As an institution that is organically-linked to its surroundings, AUS continues to add to its program offerings, reflecting the needs and requirements of the students as well as the regional marketplace.

As you go through these pages, you will find answers to questions pertaining to a wide range of issues, including information on the many programs we offer and their requirements, our regulations and policies, student life on campus, as well as information about campus facilities and resources. This will help you to navigate your way to understand better what constitutes a rich and beneficial campus experience.

Embarking on this journey, you will witness first-hand the dynamism and progress for which AUS has become renowned throughout the region. You will experience a colorful, energetic, and multi-faceted campus life and forge your own unique relationships as a student at AUS.

It gives me great pleasure to welcome you to our unique world and to wish you every success in your chosen discipline.

Björn Kjerfve



## Board of Trustees

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## Emeriti

**Dr. Roderick S. French**, Chancellor Emeritus

**Dr. Leland T. Blank**, Dean Emeritus

**Dr. Ibrahim El Sadek**, Professor Emeritus



# University Administrators

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Dr. Cindy Dutschke, Director, Institutional Effectiveness and Planning  
 Mr. Varinder Kohli, Director, Internal Audit  
 Ms. Miriam Kiwan, Director, Strategic Communications and Media  
 Mr. Nazzal Nazzal, Director, Media Relations

## **Mr. Kevin Mitchell, Interim Provost**

Mr. Peter Di Sabatino, Dean, College of Architecture, Art and Design  
 Dr. Ahmed Mokhtar, Associate Dean, College of Architecture, Art and Design  
 Dr. Mahmoud Anabtawi, Dean, College of Arts and Sciences  
 Dr. Ahmad Al-Issa, Associate Dean, College of Arts and Sciences  
 Dr. Pia-Kristina Anderson, Associate Dean, College of Arts and Sciences  
 Dr. Leland T. Blank, Dean, College of Engineering  
 Dr. Hany El-Kadi, Associate Dean, College of Engineering  
 Dr. Mohamed El-Tarhuni, Associate Dean, College of Engineering  
 Dr. Robert Grosse, Dean, School of Business Administration  
 Dr. Jörg Bley, Associate Dean, School of Business Administration  
 Mr. Nabeel Amireh, Director, Academic Computing  
 Mr. Asif Hashim, Director, Academic Planning and Analysis  
 Dr. Mehvash Ali, Director, Academic Support Center  
 Dr. Cindy Gunn, Director, Faculty Development Center  
 Dr. Khaled Assaleh, Director, Graduate Studies  
 Dr. Linda Angell, Director, International Exchange  
 Ms. Lynda Ataya, Registrar  
 Ms. Lina El-Khoury Bendaly, Associate Registrar  
 Ms. Daphne Flanagan, University Librarian

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Ms. Rania Morsi, Director, Administrative Services  
 Mr. Abdullah El-Shazly, Director, Institutional Advancement

## **Mr. Ali Shuhaimy, Vice Chancellor for Enrollment Management**

Dr. Christine Grosse, Director, Achievement Academy  
 Mr. Rami Mahfouz, Director, Enrollment Services  
 Mr. Mohamad El-Shahed, Director, Student Recruitment

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 Mr. Steve Crouch, Controller  
 Mr. Scott Element, Director, Financial Systems  
 Mr. Varghese Thomas, Director, Budget and Planning  
 Mr. Shwan Alhashimi, Director, Campus Development  
 Ms. Paula Doyle, Director, Human Resources  
 Mr. Leo de Sousa, Director, Information Technology  
 Mr. Stephen James Fenn, Director, Operations  
 Mr. Mazin Elya, Director, Facilities  
 Dr. Lubna Yousif, MD, Director, University Health Center

## **Mr. Salem Al Qaseer, Vice Chancellor for Public Affairs**

Mr. Saeed Al-Shamsi, Director, Public Relations  
 Mr. Toufic El-Saifi, Director, Events Management

## **Dr. Moza Al Shehhi, Vice Chancellor for Student Affairs**

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 Dr. Mohamed Helal, Director, Student Athletics and Recreation  
 Mr. Munketh Taha, Director, Student Development and Organizations  
 Ms. Haifa Ismail, Director, Student Leadership Program  
 Mr. Mohammad Atif Ehsan, Director, Student Residential Life

The graduation requirements for any individual student are normally determined by the catalog that was effective when the student matriculated in the major. A student may choose to follow the catalog effective for the semester when the student expects to complete his/her graduation requirements. A student who changes majors may petition to revert to the catalog in effect at the time of matriculation into the university. The policies, procedures and academic regulations published in the American University of Sharjah catalog are effective at the time of publication but may be subject to change. Students are responsible for adherence to the most up-to-date policies, procedures and academic regulations.

# Graduate Academic Calendar 2014–2015

Fall Semester		2014	
<b>August</b>	13	Wednesday	Regular admissions applications deadline for Fall Semester 2014 for applicants from outside UAE
	27	Wednesday	Regular admissions applications deadline for Fall Semester 2014 for applicants from inside UAE Assistantship applications deadline for Fall Semester 2014 for new students
<b>September</b>	4	Thursday	Residential halls open
	10	Wednesday	Registration for new students begins
	14	Sunday	First day of classes/Add and drop period begins
	21	Sunday	Late registration period begins
	28	Sunday	Late registration and add and drop period end at 5 p.m. Deadline to pay Fall Semester 2014 tuition fees without late payment penalty, 5 p.m.
<b>October</b>	2	Thursday	Applications due for Fall Semester 2014 graduation
	2	Thursday	Classes end at 10 p.m. for Eid Al Adha holiday*
	10	Friday	Classes resume at 8 a.m.
	22	Wednesday	Classes end at 10 p.m. for Al Hijra holiday*
	24	Friday	Classes resume at 8 a.m.
<b>November</b>	25	Tuesday	Deadline to withdraw from a course without a grade penalty, 5 p.m. Last day to move from thesis to project and vice versa
<b>December</b>	1	Monday	Classes end at 10 p.m. for UAE National Day holiday
	4	Thursday	Classes resume at 8 a.m.
	18	Thursday	Classes end at 10 p.m. for the Fall Break
<b>January</b>	1	Thursday	Fall Break ends at 10 p.m.
	4	Sunday	Holiday for Al-Mawlid Al-Nabawi*
	5	Monday	Classes resume at 8 a.m.
	5	Monday	Advising and early registration for Spring Semester 2015 begins
	7	Wednesday	Regular admission applications deadline for Spring Semester 2015 for applicants from outside UAE
	18	Sunday	Fall Semester 2014 classes end at 10 p.m.
	19	Monday	Fall Semester 2014 study and examination period begins
	21	Wednesday	Regular admissions applications deadline for Spring Semester 2015 for applicants from inside UAE Assistantship applications deadline for Spring Semester 2015 for new students
	26	Monday	Fall Semester 2014 study and examination period ends at 10 p.m.
	31	Saturday	Fall Semester 2014 Commencement
Spring Semester		2015	
<b>February</b>	5	Thursday	Residential halls open
	11	Wednesday	Registration for new students begins
	15	Sunday	First day of classes/Add and drop period begins
	19	Thursday	Applications due for Spring Semester 2015 graduation
	22	Sunday	Late registration period begins
<b>March</b>	1	Sunday	Late registration and add and drop period end at 5 p.m. Deadline to pay Spring Semester 2015 tuition fees without late payment penalty, 5 p.m.
<b>April</b>	2	Thursday	Classes end at 10 p.m. for Spring Break
	10	Friday	Classes resume at 8 a.m.
	27	Monday	Deadline to withdraw from a course without a grade penalty, 5 p.m. Last day to move from thesis to project and vice versa
	29	Wednesday	Applications due for Summer Term 2015 graduation
<b>May</b>	6	Wednesday	Advising and early registration for Summer Term 2015 and Fall Semester 2015 begins
	15	Friday	Classes end at 10 p.m. for Al Israa Wal Miraj holiday*
	17	Sunday	Classes resume at 8 a.m.
	27	Wednesday	Regular admission applications deadline for Summer Term 2015 for all applicants
<b>June</b>	1	Monday	Spring Semester 2015 classes end at 10 p.m.
	2	Tuesday	Spring Semester 2015 study and examination period begins
	9	Tuesday	Spring Semester 2015 study and examination period ends at 10 p.m.
	13	Saturday	Spring Semester 2015 Commencement
Summer Term		2015	
<b>June</b>	18–21	Thursday–Sunday	Registration for Summer Term 2015
	22	Monday	First day of classes/Add and drop period begins
	24	Wednesday	Late registration period begins
	28	Sunday	Late registration and add and drop period end at 3 p.m. Deadline to pay Summer Term 2015 tuition fees without late payment penalty, 3 p.m.
<b>July</b>	14	Tuesday	Deadline to withdraw from a course without a grade penalty, 3 p.m. Last day to move from thesis to project and vice versa
	16	Thursday	Classes end at 10 p.m. for Eid Al Fitr holiday*
	21	Tuesday	Classes resume at 8 a.m.
	28	Tuesday	Summer Term 2015 classes end at 10 p.m.
	29–30	Wednesday–Thursday	Summer Term 2015 study and examination period

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

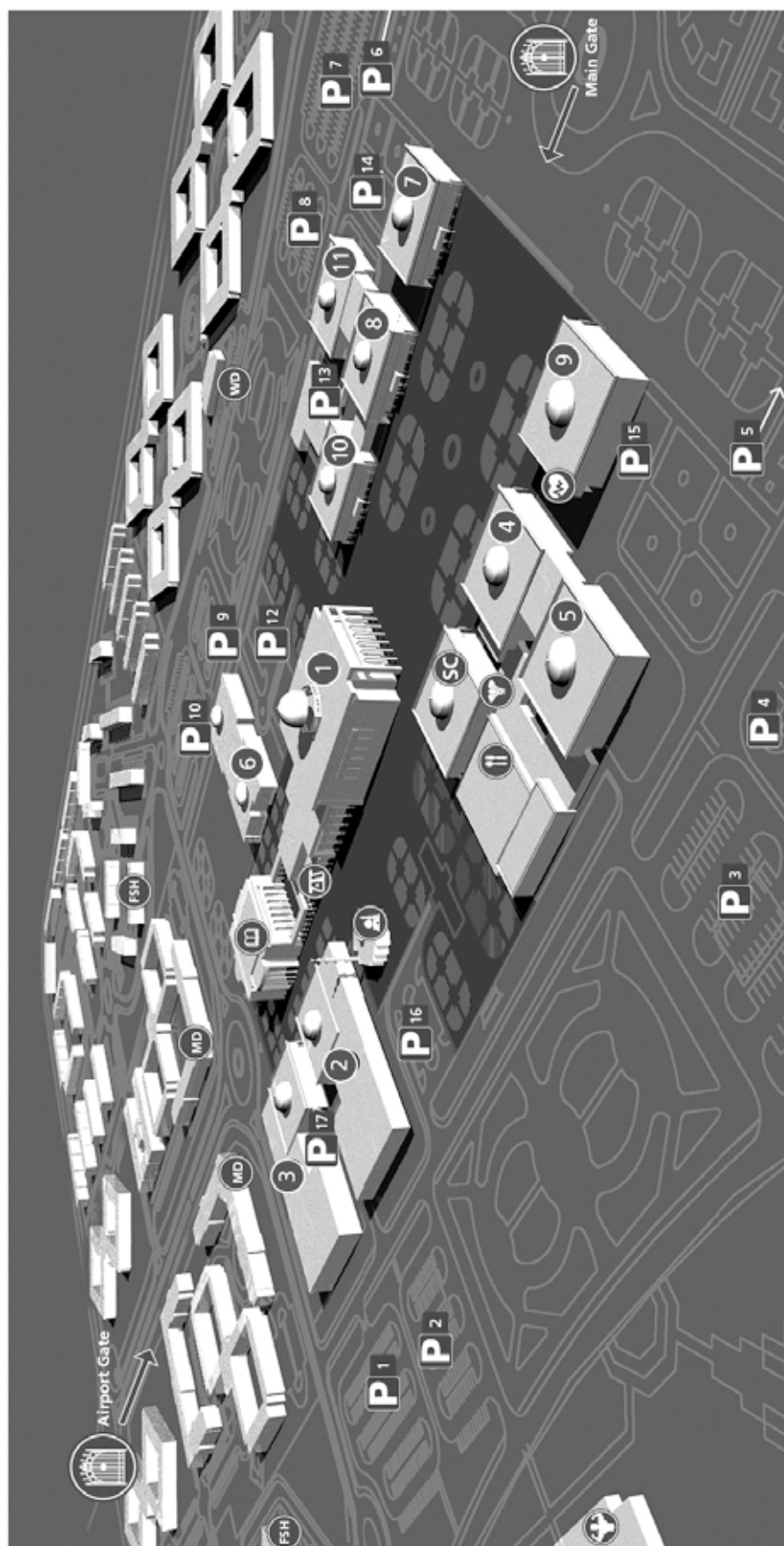
**Note:** Executive graduate programs might follow a different registration and payment timeline. This timeline is announced by the office of the graduate program director after consultation with the Office of the Registrar and the Office of the Director of Finance.

# Directory

UAE Code 971, Sharjah Code 6

www.aus.edu

Department	Telephone	Fax	Email
Academic Support Center	515 2096	515 2097	asc@aus.edu
Achievement Academy/Bridge Program	515 2653/54	515 2638	academy@aus.edu
Admissions/Enrollment Management	515 1050	515 1020	admission@aus.edu
Career Services	515 2066	515 2065	odaa@aus.edu
Chancellor	515 2205	558 5858	chancellor@aus.edu
College of Architecture, Art and Design	515 2825	515 2800	deancaad@aus.edu
College of Arts and Sciences	515 2412	558 5067	deancas@aus.edu
College of Engineering	515 2948	515 2979	deancen@aus.edu
Corporate Relations	515 2016	515 2065	odaa@aus.edu
Development and Alumni Affairs	515 2547	515 2297	odaa@aus.edu
Finance	515 2185	515 2190	finance@aus.edu
Finance and Administration	515 2192	515 2130	vcfaoffice@aus.edu
General Information	558 5555	558 5858	info@aus.edu
Health Center	515 2699	515 2690	clinic@aus.edu
Human Resources	515 2228	515 2139	hr@aus.edu
Information Technology	515 2119	515 2120	ithelpdesk@aus.edu
Institutional Effectiveness and Planning	515 2206	558 5858	oiep@aus.edu
International Exchange Office	515 4018/27/29	515 4010	ixo@aus.edu
Library	515 2252	558 5008	auslibrary@aus.edu
Operations	515 2299	558 5009	operations@aus.edu
Provost	515 2020	515 2150	provost@aus.edu
Public Affairs	515 2207	515 2200	public_affairs@aus.edu
Registrar	515 2031	515 2040	registration@aus.edu
Research	515 2208	515 4025	research@aus.edu
Research and Graduate Studies	515 2208	515 4025	vrpgs@aus.edu
School of Business Administration	515 2310	515 4065	deanofsba@aus.edu
Sponsorship Liaison	515 1016	515 1011	sponsors@aus.edu
Strategic Communications and Media	515 2212	515 2288	communications@aus.edu
Student Accounts	515 2039/2233	515 2190	studentaccounts@aus.edu
Student Affairs	515 2166	558 5024	studentaffairs@aus.edu
Student Leadership Program	515 4772	515 4770	osasl@aus.edu
Student Learning and Counseling Services	515 2767	515 2711	lcs@aus.edu
Student Residential Life	515 2244/2434	515 2294	res-halls@aus.edu
Testing and Professional Development Center	515 1111	515 1011	testingcenter@aus.edu
Undergraduate Affairs and Instruction	515 2281	515 2050	vpua@aus.edu
<b>Emergency Numbers</b>			
Maintenance Emergency	515 2100		
Medical Hotline (24 hours)	050 635 7651		
Security	515 2222		



	Pharmacy
	Health Center
	Bank
	Faculty/Staff Housing
	Women's Dorm
	Men's Dorm

11	New Academic Building
SC	Student Center
P16	Visitor Parking
P5 - P6	Free Parking
P1 to P4 P7 to P15 P17	Reserved Parking
	Library
	Food Court
	Mosque
	Sport Complex

1	Main Building Auditorium
2	College of Engineering 1
3	College of Engineering 2
4	Architecture, Art and Design 1
5	Architecture, Art and Design 2
6	Business and Management
7	Arts and Sciences: Physics
8	Arts and Sciences: Chemistry
9	Language Building
10	Arts Building



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# The University

## Historical Preamble

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

AUS was mandated to:

- reinforce the efforts of the leaders of the UAE "to ensure that science and education regain their rightful place in the building and advancement of our society and shaping the lives of our children"
- join other institutions of higher education in seeking "to reshape fundamentally the minds of our youth to enable them to address the challenges of life using the scientific method"
- become a "center of research for educational development and the solution of social problems"
- become "organically linked" to the economic, cultural, scientific and industrial sectors of society in "productive cooperation"
- exercise the "independence and objectivity in teaching and research" necessary for the achievement of these goals

## Vision Statement

American University of Sharjah (AUS) will be the region's leader in higher education, known for excellence and innovation in teaching, learning, research and service.

## Mission Statement

American University of Sharjah (AUS) is a comprehensive, independent, non-profit, coeducational institution of higher education that fosters excellence in teaching, learning and research. Based on an American model of higher education and grounded in the culture of the Gulf region, AUS fosters a community that embraces cultural diversity and whose members are committed to the ideals of open intellectual inquiry, ethical behavior, and social and civic responsibility. An engaged, productive and effective member of society, AUS educates lifelong learners who display mastery in the core competencies of their areas of specialization, and who communicate

clearly, think critically and solve problems creatively.

## Overview

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

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

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

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

Through the College of Architecture, Art and Design, the College of Arts and Sciences, the College of Engineering, and the School of Business Administration, the university offers 26 majors and 52 minors at the undergraduate level and 14 master's degrees.

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

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

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

## Accreditation and Licensure

AUS is licensed and its programs are accredited by the Commission for Academic Accreditation of the Ministry of Higher Education and Scientific Research in the United Arab Emirates.

AUS is also accredited in the United States of America by the Commission on Higher Education of the Middle States Association of Colleges and Schools (3624 Market Street, Philadelphia, PA 19104, USA, Tel +1 215 662 5606).

The bachelor of science degree programs in chemical engineering, civil engineering, computer engineering, electrical engineering and mechanical engineering offered by the College of Engineering are accredited by Engineering Accreditation Commission of ABET ([www.abet.org](http://www.abet.org)).

The bachelor of science degree program in computer science offered by the College of Engineering is accredited by the Computing Accreditation Commission of ABET ([www.abet.org](http://www.abet.org)).



The Bachelor of Science in Business Administration (BSBA) as well as the Master of Business Administration (MBA) and Executive Master of Business Administration (EMBA) degrees offered

by the School of Business Administration are accredited by the Association to Advance Collegiate Schools of Business (AACSB), [www.aacsb.edu](http://www.aacsb.edu).

The Bachelor of Architecture program of the College of Architecture, Art and Design is accredited by the National Architectural Accrediting Board (NAAB) of the United States, [www.naab.org](http://www.naab.org).



# Campus Life

## The Campus Complex

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

The center of the AUS campus comprises 12 academic buildings. These buildings house classrooms and lecture halls of various sizes; a state-of-the-art library; laboratories, workshops and studios; and offices for faculty, academic administrators and support staff.

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

### The City of Sharjah

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

Today, as in ancient times, Sharjah is a global trade center. Modern Sharjah is a city of learning and the arts, as confirmed by its 1998 UNESCO designation as the Cultural Capital of the Arab World. Due to its distinctive contributions to Islamic and human culture, Sharjah was selected as the Islamic Culture Capital of the Arab Region for 2014 by the Islamic Organization for Education, Science and Culture. This context facilitates the university's intention to be an academic center at the intersection of ancient cultural traditions and contemporary intellectual currents. The city of Sharjah boasts over 27 museums with splendid collections of artifacts and art objects as well as exhibits on science and natural history. These institutions are sites for field trips, research and possible internships. Sharjah hosts many cultural festivals, programs, educational conferences, fairs and economic

expositions, including the annual book fair and the Sharjah International Biennial art exhibition. These resources permit AUS to broaden students' formal education in a way not possible elsewhere in the region.

### Campus Services

Miscellaneous service outlets are available on campus to cater for the needs of faculty members, staff members, students, and campus residents alike. These include services such as banking, dining, transportation, laundry, minimarts, a full-service post office and copy center, a bookstore, and a pharmacy. Other services available include a travel office, a hairdresser and a barbershop, and a gifts and memorabilia shop.

Parking lots, free and paid, are provided for faculty, staff, students, residents and visitors. Campus security and safety is monitored by the Public Relations Department. AUS reserves the right to restrict or prohibit access to the campus.

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

Detailed information on campus services is available in the On Campus section of the AUS website and in the *Student Handbook*, available at <http://www.aus.edu/osa/handbook>.

## Facilities and Resources

### Architecture, Art and Design Facilities

Beginning with the freshman year, College of Architecture, Art and Design (CAAD) students benefit from open studios and robust, state-of-the-art facilities. Students accepted into the second year studio majors have dedicated individual worktables and computer workstations with network connections. Dedicated ancillary spaces, which are shared by all curricula, include an exhibition gallery, lecture hall, digital classrooms, high-end Macintosh and Intel-based labs, and comprehensive printing facilities. For CAAD students and faculty, there are Lighting, Photography, Sound and Print labs, an Interactive Lab, and a Materials Lab and Library. Facilities cover the history of making—from clay to new materials and techniques that comprehensively

span the use of the hands and hand-tools to mechanical and digital fabrication. The Digital Fabrication Lab is among the most advanced university facilities internationally.

### Central Instrumentation Facility

The Central Instrumentation Facility (CIF) at American University of Sharjah is an interdisciplinary research facility that is dedicated primarily to supporting faculty and students in their efforts to find creative solutions to challenging problems through collaborative work. The CIF goals are to:

- provide training and basic analytical research support for faculty and students at AUS
- house expensive, multi-user instruments that require stable source of power, controlled atmosphere (e.g., temperature, humidity, chemicals, dust, etc.), operational supervision and maintenance
- promote research projects that transcend normal disciplinary boundaries and encourage active collaboration between faculty at AUS and elsewhere
- allow outside users to utilize CIF equipment on a fee basis

### Computer Learning Resources

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

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

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

The university's computer network uses fiber-optic cables that interconnect the entire campus, including the residential halls and faculty housing. Additional

information can be found in the IT section of the university website.

### **Development and Alumni Affairs**

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

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

The ODAA enhances the financial wellbeing of AUS by raising contributions for the AUS Endowment Fund and establishing fruitful contacts and mutual collaborations with the wider community, which in turn enhances the visibility of AUS and its stature in the UAE and beyond.

The ODAA also offers students and alumni comprehensive career services. It works closely with industry in the UAE and the region to promote interaction between potential employers and AUS students and alumni. It organizes corporate briefings, the AUS Business Forum, the annual Alumni Reunion and the annual Career Fair, and provides information on job opportunities, internships and summer employment. The ODAA has a career resource library and an up-to-date database of AUS alumni and employers in the UAE and Middle East.

For more information on the ODAA, please visit [www.aus.edu/odaa](http://www.aus.edu/odaa), or contact Dr. Nada Mourtada-Sabbah, Vice Chancellor for Development and Alumni Affairs, 06 515 2547, [vcda-office@aus.edu](mailto:vcda-office@aus.edu).

### **Jafar Center for Executive Education**

Executive development programs for business and government leaders are an integral part of the university's contribution to the future of the UAE. Located in the School of Business Administration, the Jafar Center for Executive Education (JCEE), provides an ideal venue for executive learning. Leadership programs, professional training, short courses and conferences can be hosted in a state-of-the-art facility with equipment and furnishings

to support a variety of learning formats, including team activities, video conferences, lectures and seminars. The mission of JCEE is to facilitate interaction between AUS faculty and the business community for the purpose of developing the leadership capacity of enterprises in the UAE and the wider region. Faculty interaction with business leaders also allows professors to take the needs of business and government back into the classroom with graduate and undergraduate students. Bringing together faculty from across the university, the JCEE is able to respond to almost any business requirement.

### **Laboratories**

#### **Engineering and Computing Laboratories**

The College of Engineering has some 50 laboratories and workshops. All equipment and instruments are accessible to and extensively used by students. Laboratory focus areas are presented below and may be reviewed in detail on the college's website.

Chemical engineering laboratories focus on unit operations and process control, corrosion, environmental, petroleum, water, materials, fluid flow, heat transfer, and process computer simulation.

Civil engineering laboratories are designed for conducting standard and advanced construction materials, structural, geotechnical, geological, fluid mechanics, hydraulics and environmental tests pertinent to both teaching and research.

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

Electrical engineering laboratories focus on electronics, electric power, control, measurements, machines, communications and signal processing, nondestructive testing and medical electronics. The Department of Electrical Engineering also has a class 10,000 clean room facility for testing microelectronic chips as well as an advanced EDA lab.

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

Mechatronics engineering has a well-equipped center providing an excellent work environment for multidisciplinary teaching and research. Lab activities enable students to integrate, with synergy, contemporary precision mechanics, state-of-the-art control systems, embedded computers and electronics.

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

#### **Interpreting and Translation Laboratory**

The Department of Arabic and Translation Studies has a purpose-built interpreting facility. It features simultaneous interpreting booths, a consecutive interpreting table, Internet access and equipment for simulated video teleconferencing. The department also uses other computer labs, which are equipped with machine translation software, TRADOS and other relevant software, including Internet-based, needed in language engineering as well as subtitling.

#### **Mass Communication Laboratories and Studios**

Students in the Department of Mass Communication benefit from high-tech digital classroom labs with Mac and PC computer stations featuring graphic design, desktop publishing, video effects, video editing and multimedia software.

#### **Science Laboratories**

The science programs benefit from up-to-date laboratories and equipment. Chemistry laboratories are equipped with standard chemical instrumentation, including balances, centrifuges, pH-meters, spectrophotometers, a rapid kinetic apparatus, glove box, physisorption apparatus, and electrochemical and chromatographic equipment. The environmental sciences and analytic chemistry laboratories are equipped with the latest sampling and analytical devices, including AA, GC-MS, ICP, FTIR, TOC, HPLC equipment and a 400 MHz Bruker Biospin NMR machine. The physics laboratories are supplied with up-to-date standard equipment, including computer interfaces, motion sensors, current sensors, voltage sensors, magnetic field sensors, linear air tracks, photogates, smart timers, projectile launchers, ballistic pendulums, rotational systems, digitometer, electric field mappers, current balance apparatus, signal/function generators, oscilloscopes, a Hall effect apparatus, lasers, spectral lamps, photoelectric effect apparatus, Geiger-Muller tubes,

radiation counters, h/e apparatus, Frank Hertz apparatus, e/m apparatus, spectrometers, interferometers, X-ray machines, a Millikan oil drop apparatus, heat engines/gas law apparatus, a thermal expansion apparatus and an adiabatic gas law apparatus. The biology laboratories are equipped with the latest stereo inverted and compound microscopes, a microtome, an autoclave, a laminar flow sterile hood, PAGE and agarose electrophoresis equipment, cryostat and microtome units, a workstation with a computer connected to digital microscope cameras, a growth chamber, IDEXX Colilert and a manifold filtration unit for microbiological analysis, a gel documentation system, a UV trans-illuminator, refrigerated microcentrifuges, a trans-blot semi-dry transfer apparatus, a gel dryer, CO<sub>2</sub> cell incubator, -80 °C freezer, a tissue homogenizer, and a thermocycler for DNA amplification.

### Library

The AUS Library, an 11,000-square-meter state-of-the-art facility, provides collections, services and programs to support the curricular and research needs of the university community. The AUS Library provides a wide range of resources and services to meet the specialized needs of graduate students. The library has a growing collection of 140,000 items that includes reference materials, books, DVDs, and magazines and scholarly journals. In addition to its print collections, the library provides access to over 160,000 e-books, thousands of electronic journals and over 50 online databases. Through the library's website, AUS users can search the online catalog, access databases, read e-books and full-text journal articles, and find other digital resources whether on or off campus. The website also provides instructional aids such as subject guides and tutorials to help students use the library more effectively. Library facilities include a technology-intensive Information Commons, group study rooms, media viewing rooms, and an abundance of reading and study areas. For students who need a silent study environment, the library offers two "No Talking Zones" in which talking, whispering and mobiles are prohibited. Working with professors, AUS librarians offer hands-on workshops on performing library research, conducting a literature review, evaluating sources and websites, and using both print and electronic tools more effectively. Graduate students can request books or journal articles not available in the library through the interlibrary loan service. Further information regarding the library is available at <http://library.aus.edu>.

### Research and Grants

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

AUS upholds its ethical responsibility to administratively review all proposed research projects involving humans as participants. All research studies at AUS involving the participation of humans must be submitted to and approved by the AUS Institutional Review Board (IRB) before any study is undertaken.

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

### Research Centers

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

#### Earthquake Observatory

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

#### Gulf Ecosystem Research Center

The Gulf Ecosystem Research Center (GERC) is a multidisciplinary academic research center. Its mission is to monitor and conduct research on the Gulf ecosystem, broadly defined to include land, air, water, and biotic systems of the Gulf, United Arab Emirates (UAE) and GCC countries. GERC will offer advice on long-term solutions to ecological problems. GERC is a joint initiative of AUS and Bee'ah, Sharjah's environmental company. In support of GERC, AUS has initiatives with Woods Hole Oceanographic Institution (Massachusetts, US) and the Center for Coastal Margin Observation and Prediction (Oregon, US).

### Institute of Materials Systems

The Institute of Materials Systems (IMS) was established in 2001 based on the recommendations of GCC Ministers for Public Works and Housing to promote materials research and education. It collaborates with governmental and private sectors in areas of materials research and applications, focusing on quality control, performance, sustainability, development and use of standard procedures, and quality assurance materials used in the region. Objectives of the institute are to conduct applied research focused on materials properties and applications in harsh environments; assist governmental departments in establishing local and regional codes of practice; provide independent technical evaluation and consultation services on materials-related issues; enhance education through seminars, conferences and short courses; and establish collaboration with similar centers of excellence worldwide.

### Institute of Urban and Regional Planning and Design

The Institute of Urban and Regional Planning and Design advances urban planning as it relates to the local culture and identity of the UAE and the Arab Gulf region, and promotes sustainability as integral to all activities pertinent to urban planning and urban design. The institute's objectives are to advance production and accumulation of knowledge in urban and regional planning and urban design; develop and offer educational and training opportunities in urban and regional planning and urban design; collaborate with local governmental, not-for-profit, non-governmental and private agencies concerned with urban planning and development to advance quality of practice and research; advance public discourse on urban planning through public forums (e.g., seminars, conferences, symposia); and increase public awareness in urban planning and urban design.

### Mechatronics Center

The Mechatronics Center leads research and development in advanced engineering systems to address high-tech technology transfer in the region. It promotes multidisciplinary research activities between faculty members and graduate students at AUS, and industry and governmental agencies that require extensive integration of instrumentation, control systems, electronics, intelligent software and computers. The Mechatronics Center offers excellent networking opportunity with leading industries in the region as well as top academic institutions worldwide. Areas of expertise within the center include embedded and distributed process control, remote monitoring, nonlinear

and intelligent control systems, robotics and autonomous systems, unmanned vehicles and machine vision.

### Strategic Communications and Media Department

The Strategic Communications and Media Department is responsible for developing, overseeing and implementing a comprehensive communication strategy for AUS. The communications plan is aligned with the university's vision, mission and strategic directions and is designed to achieve AUS's short- and long-term objectives by successfully targeting and communicating with key university audiences and core constituencies. The department works closely with the institution's leadership to advance AUS's local, regional and international positioning aspirations; actively support all aspects of its institutional advancement agenda; solidify its current favorable public image; efficiently manage its media, print and electronic communication tools; successfully engage and inform internal and external stakeholders through effective communications tools; ensure campus-wide communications discipline; and create a culture of collaborative production and effective dissemination of quality information.

### Testing and Professional Development Center

The AUS Testing and Professional Development Center serves as a central point of testing for both the AUS campus and the community. The center accommodates the placement tests for newly AUS admitted students as well as university testing.

The center is an authorized Prometric Test Center, a Pearson VUE® authorized Test Center (PVTC Select) and is part of the ETS Strategic Testing Network.

AMIDEAST, one of the region's most prominent international testing administrators, is an AUS testing partner and has a permanent office on the AUS campus to administer TOEFL tests (paper-based) on a regular basis, as well as other recognized international tests.

The center offers a range of internationally recognized tests including the Internet-Based TOEFL, the Institutional paper-based TOEFL, the SAT, the Fundamentals of Engineering Exam (FE) and the Principles and Practice of Engineering Exam (PE).

For more information, visit [www.aus.edu/testingcenter](http://www.aus.edu/testingcenter).

### University Health Center

The University Health Center (UHC) provides primary health care services to

all AUS students, faculty, staff members and their dependents. The center is open Sunday–Thursday from 8:30 a.m. to 4:30 p.m. and also provides 24-hour emergency care. Depending on the severity of the illness, patients are referred to a hospital for further treatment if required. Great emphasis is placed on making the campus a healthy and safe place to study, work and live through providing preliminary physical examinations to all students and employees as a mandatory part of registration/employment process, followed by continued quality care throughout their time at AUS, including sport team fitness checks.

The UHC is staffed with a qualified medical team, which includes general practitioners, a clinical counselor and registered nurses. The UHC is equipped with an observation room (day care) to closely monitor patients for short stays before transferring to a hospital if required. The UHC has access to an on-campus laboratory and pharmacy to assist in serving the AUS community. There is an ambulance on standby 24 hours a day on campus.

### Health Education Programs

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

### Health Insurance Plans for Students

Health insurance is available for graduate students. Two plans are provided. For information, visit [www.aus.edu/healthcenter](http://www.aus.edu/healthcenter).

### University Sports Facilities

The Sports Complex includes basketball, tennis, squash and volleyball courts, multipurpose halls and exercise and gymnastic halls for use in both organized sports and free recreation; a 50-meter swimming pool; saunas; a fitness center with free weights and exercise machines; and an exercise hall for aerobics, table tennis and martial arts events, all located indoors. Close to the main complex are six tennis courts, two basketball and two volleyball courts; a soccer field; a cricket ground; a cricket practice net; and a baseball field.

The AUS sports facilities are available for the benefit of the entire AUS community. The Student Athletics and Recreation Department fosters the continuing development of collegiate sports in the UAE through organizing and hosting sports tournaments, symposia and training in sports and fitness. Students, staff and faculty

members are entitled to free usage of the sports facilities.

Details on the AUS sports facilities are available in the *Student Handbook* and at [www.aus.edu/osa/athletics](http://www.aus.edu/osa/athletics).

## Student Life on Campus

### Code of Conduct

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

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

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

Judicial Affairs also offers mediation services, which assist students in resolving conflicts through mediation. Students are trained in mediation and awarded a certificate on successful completion of mediation training and mock sessions.

For more information, please refer to the *Student Handbook* or visit [www.aus.edu/osa/judicialaffairs](http://www.aus.edu/osa/judicialaffairs).

### Community Services

AUS Community Services Office is a link between students and the various needs found in society. Community Services allows students to experience first-hand the value of serving others through charity, awareness and outreach programs. It involves them personally in community events that enrich their life experiences. Community Services coordinates a variety of volunteer programs and strongly encourages

students to contribute to the development of new ones. Current volunteer programs are listed in the Student Affairs section of the university website and in the Student Handbook.

Students who are interested in learning more about these programs should visit the Community Services Office located in the Student Center (office A222), call 515 2794 or email [osacom-services@aus.edu](mailto:osacom-services@aus.edu).

### Cultural Events

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

The Performing Arts Program also presents a wide array of student productions in theatre, dance and music in the Arts Building rotunda. For more information, contact [atassa@aus.edu](mailto:atassa@aus.edu).

### Graduate Student Employment Opportunities

AUS offers graduate students several employment/learning opportunities on campus: employment through graduate assistantships, as research assistants on faculty research projects (both internally and externally funded grants) and as work-study students. For more information, please refer to the Graduate Student Employment folder available on iLearn and accessible using the following path: iLearn-Community-Office of Research and Graduate Studies (ORGS)-Graduate Studies.

### Office of Student Affairs

The mission of the Office of Student Affairs (OSA) is to provide high-quality services and programs facilitating informal learning that is in congruence with the Middle Eastern culture; complements formal learning; and promotes aesthetic, ethical, intellectual, personal, social and talent growth in a safe environment.

The Office of Student Affairs is responsible for making student life interesting and noteworthy at AUS. Student Affairs transforms student life with a purpose, engaging students in activities outside the classroom. Student involvement in OSA-initiated activities enables them accomplish their personal and educational goals. Students are engaged in diverse programs, activities and events and provided services through the Student Athletics and Recreation Department, the Student Development and Organizations Department, the Student Clubs and Organizations Office, the Community Services Office, the Student Employment Office, the Student Multicultural Learning Program, the

Student Leadership Program, Student Residential Life, Student Learning and Counseling Services, and Judicial Affairs.

More information on Student Affairs is available at [www.aus.edu](http://www.aus.edu). You can also visit the Office of the Vice Chancellor for Student Affairs (M-217 on the Second Floor of the Main Building), call 06 515 2166 or email [studentaffairs@aus.edu](mailto:studentaffairs@aus.edu).

### Student Athletics and Recreation Department

The Office of Student Affairs believes that students should have ongoing opportunities to develop their talents through a wide variety of sports. To achieve this goal, full-time and part-time coaches and trainers are available in the Student Athletics and Recreation Department (SARD) to help students develop team play, sportsmanship and healthy lifestyles. A variety of programs are available, featuring both team and individual sports, and fitness and leisure activities, which offer broad-based competitive and recreational programs for both genders. Details on the university's sports programs are available in the *Student Handbook* and at [www.aus.edu/osa/athletics](http://www.aus.edu/osa/athletics).

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

In line with its continuous endeavor to foster collegiate sports in the UAE, the Student Athletics and Recreation Department offers students the opportunity to participate in local, regional and international intercollegiate sports tournaments, symposia and training courses it organizes and hosts.

### Student Center

The Student Center plays an important role in the extracurricular life at the university by serving as a central hub for student activities. It is primarily dedicated to serving the cultural, social and recreational interests of the student body as well as to providing students with a comfortable and inviting atmosphere to unwind.

The Student Center is more than just a place for students to socialize and relax; the Student Development and Organization Department's (SDOD) offices are located at the center to provide students with non-academic support services and facilities under one roof. Student Center provides a wide array of amenities and facilities. These include an information desk, a meeting room, club offices, lounges, and a multipurpose room.

SDOD manages the Student Center facilities and all events and activities that take place at the center throughout the year. More information on the Student Center is available at [www.aus.edu](http://www.aus.edu).

### Student Clubs and Organizations Office

Student-sponsored organizations are an integral part of the learning process at most institutions of higher education. The academic experience is enriched by participation in activities that allow students to pursue their personal interests outside the classroom while providing opportunities for leadership development and for involvement in university life.

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

The student organizations at AUS span a wide range of interests and reflect the varied cultural/ethnic/national backgrounds of AUS students. Interest-oriented and ethnic/national clubs organize numerous professional and cultural activities throughout the academic year and play a vital role in fostering a rich multicultural environment on campus. For a complete listing of student clubs, visit [www.aus.edu/osa/studentorganizations](http://www.aus.edu/osa/studentorganizations).

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

For more information read the *Student Clubs and Organizations Manual* available at [www.aus.edu/osa/studentorganizations/manual](http://www.aus.edu/osa/studentorganizations/manual) or visit the Student Clubs and Organizations Office in the Student Center (A247-248).

### Student Council

His Highness Sheikh Dr. Sultan Bin Mohammad Al Qassimi strongly encouraged AUS students to establish a Student Council in order to ensure student representation on campus. The Student Council's Constitution and bylaws are amended by the council, and approved and endorsed by the Vice Chancellor for Student Affairs and Chancellor.

The AUS Student Council is an elected body that articulates student views and interests in the university. The Student Council is a vehicle for ensuring that students can have a voice in formulating university priorities and policies. It also provides a structure for greater student

involvement on campus. The Vice Chancellor for Student Affairs advises the Student Council. For information, please see the *Student Handbook* or visit [www.aus.edu/osa/studentcouncil](http://www.aus.edu/osa/studentcouncil).

### Student Development and Organizations Department

Student Development and Organizations Department (SDOD) promotes student intellectual growth, skills and all-round personality development by engaging them in multicultural programs, registered student organizations, volunteer programs, student employment, and varied events and activities locally, regionally and internationally. SDOD offers resources and services that aid student participation and development and builds university reputation through student achievements. For more information, please see the *Student Handbook* or visit [www.aus.edu/osa/studentorganizations](http://www.aus.edu/osa/studentorganizations).

### Student Leadership Programs

The Student Leadership Program (SLP) fosters ethical leadership and offers a wide range of opportunities that develop students' leadership, personal and communication skills and prepares them for a lifelong commitment to leadership and citizenship. The Student Leadership Program offers various leadership enrichment programs. SLP engages students in local, regional and international conferences and Model United Nations programs that aid in the development of character, public speaking skills, confidence, mindset and overall leadership capabilities.

The Student Leadership Program is located in the Student Center, First Floor, A249, 250 and A239. For more information visit [www.aus.edu/osa/leadership\\_program](http://www.aus.edu/osa/leadership_program), email [osasp@aus.edu](mailto:osasp@aus.edu) or call 515 4772.

### Student Multicultural Learning Program

The Student Multicultural Learning Program (SMLP) is for students to gain firsthand knowledge of cultural diversity and expand their understanding of the cultural, historical and sociological backgrounds of the UAE and of other countries around the world. Besides cultural diversity, students also learn about diversity in business, government, politics and lifestyle that exist in other societies around the globe. For more details visit [www.aus.edu/osa/multiculturalprogram](http://www.aus.edu/osa/multiculturalprogram), email [osasmplp@aus.edu](mailto:osasmplp@aus.edu) or visit SMLP office A246 in the Student Center.

### Student Publications

Practical writing experience is available to AUS students through three student publications, the *Leopard*, *Realms* and

*Arabian Leopard*. Students interested in contributing to or working on these publications should contact the Student Development and Organizations Department for further information.

### Student Residential Life

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

Because residential hall living is seen as a positive educational experience, students are encouraged to live on campus. Living on campus complements the overall learning experience by fostering independence and tolerance of others in students. Furthermore, living on campus allows students to make the most of what AUS has to offer, such as sports and dining facilities, the library and laboratories; it also gives students convenient access to the many activities that take place during the day and in the evening. The university offers a convenient bus service between the residential halls and other areas on campus.

The residential halls for male and female students are completely separate. All hall residents are expected to spend every night in the halls. To ensure the security of all students, the residential halls are protected by security patrols. Residential halls staff members are available around the clock for the safety and comfort of all residents. Regulations for the residential halls are available in the *Student Handbook* and at [www.aus.edu/osa/residentialhalls](http://www.aus.edu/osa/residentialhalls). Priority in room allocation is given to undergraduate students.

### Students with Physical Challenges

Student Learning and Counseling Services provides assistance to AUS students who are physically challenged. Students who need further information should contact Student Learning and Counseling Services in the Student Center (offices A202-207) or call 515 2732.

### Student Educational Services

#### Cisco Academy

AUS hosts a Cisco networking academy in the College of Engineering. The academy is an Instructor Training Center (ITC) that trains students and professionals to design, build and maintain computer networks and prepares them for industry-standard

certification. For more details, see the College of Engineering section of this catalog or visit [www.aus.edu/cen/cisco](http://www.aus.edu/cen/cisco) or email [ciscoacademy@aus.edu](mailto:ciscoacademy@aus.edu).

#### HP Institute

AUS hosts an HP institute in the College of Engineering. The institute provides students and professionals with the needed IT skills to translate business objectives into technology solutions. For more details, see the College of Engineering section of this catalog or visit [www.aus.edu/hpi](http://www.aus.edu/hpi) or email [hpi@aus.edu](mailto:hpi@aus.edu).

### Learning and Counseling

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

#### Counseling

SLCS provides different types of counseling services: individual counseling, group counseling, couples counseling, crisis counseling, family therapy, personality testing and the Let's Talk program.

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

Counseling is strictly confidential. The information shared with a counselor will not be disclosed to another individual or organization without the written consent of the student. Services are free, voluntary and available to all undergraduate and graduate students currently enrolled at AUS.

Appointments may be arranged by calling 515 2767 or by visiting the SLCS on the first floor of the Student Center. For more information, please email [SLCS@aus.edu](mailto:SLCS@aus.edu).

#### Self-Help Resources

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

#### Student Workshops

Workshops are conducted throughout the academic year on topics such as

time management, study skills, communication skills, anxiety and stress management, anger management, clinical anxiety and depression, personality assessment and disorders, treatment for post-traumatic stress disorders and trauma therapy, adjusting to university life, study skills, personal development and time management, positive psychology, motivational exercises and memory improvement. Workshop topics and dates are advertised around campus, or students can call to learn about future workshops. Students are encouraged to contact SLCS with ideas for future workshops.

variety of writing topics throughout the academic year. For more information, visit [www.aus.edu/cas/writingcenter](http://www.aus.edu/cas/writingcenter).

### Study Abroad

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The International Exchange Office works with AUS students who wish to study at universities in other countries either for a semester or for one academic year. For information on study abroad opportunities for AUS students, please see the section entitled AUS Students Studying Abroad under Registration and Course Information in the Academic Policies and Regulations section of this catalog.

The office also facilitates the admission of international students coming to AUS to study abroad for a semester or up to one academic year. For more information on study abroad students' admission to AUS, please see the Other Admission Categories section in Admission to Graduate Studies later in this catalog.

In addition to facilitating student exchanges and study abroad, the International Exchange Office also administers processes enabling faculty-led study tours, visiting scholars, visiting guests and delegations, tuition exchange programs, and the dissemination of information regarding international scholarships and internships.

For more information, visit [www.aus.edu/ixo](http://www.aus.edu/ixo).

### Writing Center

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The AUS Writing Center, located on the ground floor of the AUS Library building (room LIB 024) and in the new School of Business Administration building (room SBM 176), helps students become independent, confident writers. Available to all AUS students, the Writing Center offers one-on-one writing conferences by appointment or on a drop-in basis. Consultations may include thesis development, organization, outlining, paragraph development, vocabulary, sentence structure and mechanics. Students may visit the Writing Center to work on drafts, to do research or to work with a consultant on particular aspects of their writing. The Writing Center also offers workshops on a



# Admission to Graduate Studies

American University of Sharjah is a center for high-quality graduate education and research as well as a resource for sustainable development and advancement for the Gulf region and internationally. Students in AUS graduate programs find career advancement opportunities and personal enrichment. These programs foster a stimulating intellectual environment of collaborative research and intellectual exchange. The university's cross-disciplinary graduate courses and specialized programs attract excellent students who pursue creative and original work under the guidance of highly qualified, dedicated faculty members recruited from the most prestigious universities in the United States, Canada and around the world.

## Degree Offerings

AUS currently offers 14 programs of graduate studies leading to the master's degree. These are:

### College of Architecture, Art and Design

- Master of Urban Planning

### College of Arts and Sciences

- Master of Arts in English/Arabic/English Translation and Interpreting
- Master of Arts in Teaching English to Speakers of Other Languages
- Master of Science in Mathematics

### College of Engineering

- Master of Science in Chemical Engineering
- Master of Science in Civil Engineering
- Master of Science in Computer Engineering
- Master of Science in Electrical Engineering
- Master of Science in Engineering Systems Management
- Master of Science in Mechanical Engineering
- Master of Science in Mechatronics Engineering

### School of Business Administration

- Executive Master of Business Administration
- Master of Business Administration
- Master of Science in Accounting

## Application Process

Admission to all AUS graduate programs is processed through the Office of Enrollment

Management/Graduate Admissions. Applicants should address all inquiries, requests for application forms and correspondence to:

American University of Sharjah  
Office of Enrollment Management  
Graduate Admissions  
PO Box 26666  
Sharjah, United Arab Emirates  
+971 6 515 1050  
graduateadmission@aus.edu  
www.aus.edu/admissions/

To apply to a graduate program at AUS, applicants must:

- complete the Graduate Online Application (available at [www.aus.edu/apply](http://www.aus.edu/apply)) or the official graduate application form available from the Office of Enrollment Management/Graduate Admissions or through the AUS website
- pay the application fee
- submit the official transcript, graduation diploma and TOEFL or IELTS (Academic Version) scores to the Office of Enrollment Management/Graduate Admissions
- meet all program specific requirements as listed on the application form

Incomplete applications are not processed.

Applicants must satisfy both the general university requirements for graduate admission and the graduate program-specific admission criteria.

The Office of Enrollment Management/Graduate Admissions determines if the applicant meets the general university requirements for graduate admission. Recommendations for admission to a specific graduate degree program are made by the pertinent degree program's graduate admission committee.

The Office of Enrollment Management/Graduate Admissions will notify the applicant of the university's final decision.

**Note:** The AUS TOEFL code is 0526.

## Application Deadlines

Applicants should submit completed application forms and all supporting documents to the Office of Enrollment Management/Graduate Admissions by the following dates:

### Fall Semester 2014

August 27, 2014

### Spring Semester 2015

January 21, 2015

### Summer Term 2015

May 27, 2015

## International Applicants

International applicants (i.e., graduates of universities located outside the UAE) are required to submit completed application forms and all supporting documents to the Office of Enrollment Management/Graduate Admissions by the following dates:

### Fall Semester 2014

August 13, 2014

### Spring Semester 2015

January 7, 2015

### Summer Term 2015

May 27, 2015

Applicants in this category are required to present an equivalency of their degree from the UAE Ministry of Higher Education and Scientific Research located in Abu Dhabi, UAE. Details on the procedure can be obtained directly from the ministry by calling +971 2 695 1300 or +971 2 642 8000, or by visiting [www.mohe.gov.ae/En/pages/default.aspx](http://www.mohe.gov.ae/En/pages/default.aspx).

Admitted international students who need visas for the UAE should submit the visa application form (included in the admission package and available on the AUS website) at least one month prior to the first day of class.

## General University Requirements for Graduate Admission

### Full Admission

For full admission to a graduate degree program at AUS, an applicant must meet the following requirements:

- hold a four-year bachelor's degree from an independently accredited university recognized by AUS (applicants with a bachelor's degree obtained outside the UAE must submit an equivalency of their degree from the UAE Ministry of Higher Education and Scientific Research)
- have attained a minimum cumulative grade point average (CGPA) of 3.00 (on a scale of 4.00) or its equivalent, and 3.00 or its equivalent in 300- and 400-level courses in discipline(s) relevant to the graduate program
- have attained a minimum Internet-Based TOEFL score of 80 or a minimum IELTS score of 6.5

Furthermore, the TESOL program requires a TWE (Test of Written English) score of 5.

Other graduate programs may require additional specific admissions requirements. For details, please refer to the relevant graduate program section of this catalog.

### Conditional Admission

Conditional admission to a graduate degree program may be granted to applicants holding a four-year bachelor's degree from an independently accredited university recognized by AUS and who meet any of the following requirements:

- have attained a minimum cumulative GPA of 2.50 (on a scale of 4.00) or its equivalent
- have attained a minimum Internet-Based TOEFL score of 71 or a minimum IELTS score of 6.0 (Academic Version). However, the EMBA and TESOL programs require a minimum Internet-Based TOEFL score of 80 or an IELTS score of 6.5 (Academic Version)

Conditional admission applicants may also be required to meet additional specific requirements in their requested program. Applicants should consult the relevant degree program section of this catalog.

To be accorded full admission into a graduate program, a conditional admission student must:

- achieve before the beginning of the second semester the required TOEFL score for full admission (Internet-Based TOEFL score of 80) or an IELTS score of 6.5 (Academic Version)
- achieve a cumulative GPA of at least 3.00 in graduate-level courses completed in the first semester. Conditionally admitted students are not eligible to register for more than two graduate courses (a maximum of six credit hours) in their first semester of study. Students conditionally admitted to a degree program in the College of Engineering are required to achieve a cumulative GPA of at least 3.00 in their first two graduate-level courses.

If either provision is not met, the student will normally not be allowed to continue his/her studies at AUS.

**Important:** *Each graduate degree program may assign undergraduate prerequisite courses and/or specially tailored courses for conditional admission students. Credits from these courses do not satisfy credit requirements for completing the graduate degree program and are not*

*used to calculate the graduate cumulative GPA.*

### Mature Students Admission

AUS may offer admission to mature students who have earned a bachelor's degree five or more years ago from an independently accredited university recognized by AUS and have a demonstrated record of significant work experience during the period since graduation.

Students granted admission as mature students must obtain a combined average of 3.00 in their first nine credit hours of credit-bearing courses completed for the master's program, as well as a combined average of 3.00 in any required bridging courses (if applicable). Students who fail to meet these conditions will not be allowed to continue their studies at AUS.

Mature students are normally not eligible to register for more than two graduate courses (a maximum of six credit hours) in their first semester of study.

Students seeking admission as mature students must consult with the Office of Enrollment Management/Graduate Admissions.

### Non-degree Admission

Non-degree graduate students are those who wish to take AUS courses for academic credit but who do not seek a master's degree. Students are admitted to AUS with non-degree status if they meet requirements for full or conditional graduate admission. Complete applications should be submitted to the Office of Enrollment Management/Graduate Admissions.

Non-degree graduate students may take a maximum of nine credit hours at the graduate level.

Non-degree graduate students who meet the requirements for graduate conditional admission may register for no more than six credit hours in their first semester of study. If all requirements are met, registration in three credit hours in a subsequent semester will be allowed. Registration in courses will be subject to approval by the relevant graduate program director. Standard graduate tuition and fees apply.

Graduate students admitted as non-degree students may request to change status to graduate degree seeking students. For details, please refer to the Change of Status section hereafter.

### Transfer Applicants

Transfer applicants may be granted full admission or conditional admission.

Candidates transferring from independently accredited universities recognized by AUS may be considered for transfer of credits. In addition to the complete graduate application, transfer applicants must submit official transcripts of their university studies along with the syllabi for and descriptions of courses they seek to transfer. For details on transfer of credits, see Transfer of Credits later in this section.

### The Offer of Admission

The offer of admission, regardless of type, is valid only for the semester for which the candidate has applied. If an applicant is granted admission for a certain semester and for some reason fails to register in that semester, the applicant may request that his/her admission be deferred to the following semester. A written request should be submitted to the Office of Enrollment Management/Graduate Admissions.

### Other Admission Categories

#### Exchange Students Admission

An exchange student is not formally admitted to American University of Sharjah but is allowed to take courses at the university in the context of a semester exchange program. Exchange students should check with their home institutions about the transferability of AUS credits to their programs.

To be admitted as an exchange graduate student, a student must be enrolled in a graduate program at an accredited institution and be in good academic standing in his/her current institution. In addition, students must have attained a minimum Internet-Based TOEFL score of 80 or a minimum IELTS (Academic Version) score of 6.5. Exchange students coming from institutions located in an English speaking country and where English is the language of instruction, or from institutions with a TOEFL/IELTS admission requirement higher than at AUS, are exempt from this requirement.

Students must first apply through the study abroad office at their home institutions. In addition, they must submit to the AUS International Exchange Office a complete online application, accessible through [www.aus.edu/ixo](http://www.aus.edu/ixo), along with an official university transcript showing courses in progress at the time of application. To secure seats in courses, applications should be submitted by the first Thursday of March for summer and fall enrollment and the first Thursday of October for spring enrollment.

Exchange students register through the International Exchange Office. They

may enroll in any university course for which they have the necessary academic background and qualifications, subject to the approval of the relevant graduate program director or college/school associate dean. In courses with enrollment limits, priority is given to AUS students. Standard graduate tuition and fees apply.

Normally, a student is allowed to register as an exchange student for not more than one academic year. For further information, please contact the International Exchange Office at [ixo@aus.edu](mailto:ixo@aus.edu).

Graduate students admitted as exchange students may request to change status to graduate degree seeking students. For details, please refer to the Change of Status section hereafter.

### Transient Students Admission

Transient student status covers:

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

Applicants seeking transient student status at AUS must submit to the Office of the Registrar the complete Transient Student Application available at [www.aus.edu/registration/forms](http://www.aus.edu/registration/forms).

Transient students may enroll in any university course for which they have the necessary academic background and qualifications. They must register for courses through the Office of the Registrar. In courses with enrollment limits, priority is given to AUS students. Normally, a student can register as a transient student for no more than one academic year. Standard graduate tuition and fees apply.

For further information, please contact the Office of the Registrar at [registration@aus.edu](mailto:registration@aus.edu).

### Visiting Students Admission

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

institutions about the transferability of AUS credits to their programs.

To be admitted as a visiting graduate student, a student must be enrolled in a graduate program at an accredited institution and be in good academic standing in his/her current institution. In addition, students must have attained a minimum Internet-Based TOEFL score of 80 or a minimum IELTS (Academic Version) score of 6.5. Visiting students coming from institutions located in an English-speaking country and where English is the language of instruction, or from institutions with a TOEFL/IELTS admission requirement higher than at AUS, are exempt from this requirement.

Applicants seeking visiting student status must submit to the AUS International Exchange Office a complete online application accessible through [www.aus.edu/ixo](http://www.aus.edu/ixo) and an official university transcript showing courses in progress at the time of application. To secure seats in courses, applications should be submitted by the first Thursday of March for summer and fall enrollment and the first Thursday of October for spring enrollment.

If the application is approved, registration is completed through the Office of the Registrar. Visiting students may enroll in university courses for which they have the necessary academic background and qualifications. Registration in courses is subject to approval by the relevant graduate program director or college/school associate dean. In courses with enrollment limits, priority is given to AUS students. Standard graduate tuition and fees apply.

Students are admitted as visiting students for a maximum of one academic year, and are responsible for determining that AUS credits are transferable to their home institutions. For further information, please contact the International Exchange Office at [ixo@aus.edu](mailto:ixo@aus.edu).

Graduate students admitted as visiting students may request to change status to graduate degree seeking students. For details, please refer to the Change of Status section hereafter.

### Change of Status

Students may request a change of status (from non-degree to degree status or from exchange/visiting to degree status) by submitting a complete application through the Office of Enrollment Management/Graduate Admissions. All admissions requirements in place at the time of the change of status request must be met.

Courses taken while under exchange/non-degree/visiting status may apply towards the degree program with the approval of the graduate program director. Grades earned in courses that are accepted will count in the cumulative GPA (CGPA). The university rules and regulations governing transfer courses and credits will apply.

### Transfer Credit Policy

A graduate student may transfer up to nine graduate credits from a recognized graduate school at an accredited university to his/her program of study at AUS, depending upon program-specific rules and regulations. Such transfer credits should meet all of the following criteria:

1. The course work must:
  - be applied toward a graduate degree at the host institution and be taken for graduate credit
  - be approved by the graduate program director in consultation with appropriate faculty
  - not have been used to earn another degree
  - not have been taken more than five years prior to entering a graduate program at AUS. (Some programs have more stringent time limitations on transfer credits. Consult individual program descriptions and graduate program directors for regulations.)
2. The student must have earned grade of B or higher for 500-level or 600-level courses or other courses restricted to graduate students.

Transfer credit will not be accepted for research and thesis/dissertation hours, travel experience or work/life experience.

Business administration courses will be transferred from programs accredited by the Association to Advance Collegiate Schools of Business (AACSB), the European Quality Improvement System (EQUIS) or from universities approved by the School of Business Administration.

Grades earned in transferred courses do not count in the student's cumulative GPA (CGPA). Credit hours of transferred courses count in the cumulative earned hours and may apply towards meeting graduation requirements.

Applicants must request that credit transfers be reviewed at the time of application.

# Tuition and Fees

Graduate student tuition, additional fees and housing charges are given in the tables below. Non-degree, transient and visiting students must pay the same tuition and fees as regular students. Tuition payment for exchange students attending AUS is governed by the specific terms of the exchange agreement. The tuition payment of AUS students studying abroad at universities with which AUS has a semester exchange program is governed by the exchange agreement. For details on payment procedures, please check with the International Exchange Office. AUS students who have received approval to study abroad at a university that does not have a semester exchange program with AUS make their payments directly to their study abroad host university.

AUS reserves the right to revise tuition and fees. Tuition schedules are published prior to the beginning of the fall semester each academic year.

Graduate Tuition (in AED)	
College of Architecture, Art and Design	4,040/per credit hour
College of Arts and Sciences	3,220/per credit hour
College of Engineering	4,040/per credit hour
School of Business Administration	
Master of Business Administration	4,040/per credit hour
Master of Science in Accounting	4,040/per credit hour
Executive Master of Business Administration	190,000 for the complete program

Conditional Fees (In AED)		
Lab/Technology Fee A	Applies for each registered course that has Lab/Tech Fee Rate A noted in its course description	1,240
Lab/Technology Fee B	Applies for each registered course that has Lab/Tech Fee Rate B noted in its course description	1,380

Other Fees (In AED)	
Application Fee	350
Thesis or Project Extension Fee	200
Thesis Processing Fee	1,000
Thesis Binding Fee	350
Internship Fee	400
Deposit Payment for MBA and MSA programs	500 (non-refundable, non-transferable)
Deposit Payment for EMBA program	17,200 (non-refundable, non-transferable)
<i>Health insurance is available for graduate students. The insurance fee is AED 300 per semester or AED 600 per semester (AED 150 or AED 300 per summer term), depending on the type of plan applicable to each student. Visit the University Health Center's web page for more information on the health insurance plans.</i>	

Student Housing Fees (in AED)			
Utilities Service Fee	Fee automatically added to any residential hall room reserved (except in summer)	250	
Refundable Dorm Deposit	One-time fee applied when students first register for residential halls – refundable after cancelation	1,000	
Room Type	Description	Regular Semester	Summer Term
<b>Private</b>	Single occupancy with private bath and kitchenette	14,900	5,960
<b>Semi-Private</b>	Single occupancy with a shared bath and kitchenette	10,550	4,220
<b>Sharing</b>	Double occupancy with a shared bath and kitchenette	5,780	2,310
<b>Single</b>	Single occupancy with a common bath and no kitchenette (men only)	5,560	-
<b>Double</b>	Double occupancy with a common bath and no kitchenette (men only)	3,230	-

<b>Fines/Charges (In AED)</b>	
Late Registration	500
Late Payment (if tuition and fees are not settled by the first due date)	500
Reinstatement Fee (if fees are not settled by the second due date)	1,500
Returned Check Penalty (per check if returned by bank)	500
Declined Credit Card (per transaction for deferred payments if credit card is declined upon charging)	500

### Payment Methods

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

AUS accepts the following methods of payment:

- cash in UAE Dirhams (AED) only
- checks drawn on local banks in UAE Dirhams (If two or more checks return due to insufficient funds, checks will no longer be accepted.)
- credit cards (including online payment)
- direct transfers to Sharjah Islamic Bank Account No. 0029-200170-001, IBAN number: AE65 0410 0000 2920 0170 001 (student's name and ID number must be noted on transfer)

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

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

### Deferment of Tuition and Fees

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

- 60 percent of the tuition and fees have been paid by the payment deadline
- The student does not have access to checks or credit cards
- The student has a clean payment history
- The Fee Deferment Request form is completed and signed by the student and is authorized by a Finance Department official. The form is

available at [ww.aus.edu/admin/forms](http://ww.aus.edu/admin/forms) or through Students Account.

### Late Fees and Fines

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

### Graduate Student Employment Opportunities

AUS offers graduate students two types of on-campus employment: graduate assistantships and graduate work-study positions. Assistantships are available to qualified graduate students and are competitively awarded and merit based.

A variety of student work-study opportunities are available through specific departments, graduate programs and AUS internal research grants to faculty members.

Information on eligibility and application guidelines is available in the Graduate Student Employment folder available on iLearn and accessible using the following path: iLearn-Community-Office of Research and Graduate Studies (ORGS)-Graduate Studies.

### Sponsorship Liaison

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

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

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

For further assistance and information, please contact the Sponsorship Liaison Manager, 515 1016, [sponsors@aus.edu](mailto:sponsors@aus.edu).

# Academic Integrity

## Student Academic Integrity Code

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

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

In order to establish within the AUS student body a sense of ethical responsibility, honor and mutual respect, upon matriculation every student must sign the following Academic Integrity Pledge.

I [student's name] pledge my commitment to the following values:

- *I will hold myself accountable for all that I say and write;*
- *I will hold myself responsible for the academic integrity of my work;*
- *I will not misrepresent my work nor give or receive unauthorized aid;*
- *I will behave in a manner that demonstrates concern for the personal dignity, rights and freedoms of all members of the community;*
- *I will respect university property and the property of others; and*
- *I will not tolerate a lack of respect for these values.*

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

responsible for learning the conventions of documentation and acknowledgment of sources required in academic work.

### Definition of Academic Violations

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

#### Plagiarism

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

#### Inappropriate Collaboration

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

#### Inappropriate Proxy

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

#### Dishonesty in Examinations and Submitted Work

All academic work and materials submitted for assessment must be the sole original work of the student, unless otherwise directed by the instructor. Communication is not allowed between or among students, nor are students allowed to consult books, papers, study aids or notes without explicit permission. Cheating includes, but is not limited to, copying from another's paper, giving unauthorized assistance, obtaining unauthorized advance knowledge of examination questions, and the use of mechanical or marking

devices or procedures for the purpose of achieving false scores on machine-graded examinations. Specific policies regarding examinations may vary with individual professors. Students are prohibited from submitting any material prepared by or purchased from another person or company.

#### Work Completed for One Course and Submitted to Another

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

#### Deliberate Falsification of Data

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

#### Interference with Other Students' Work

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

#### Copyright Violations

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

#### Complicity in Academic Dishonesty

Complicity in academic dishonesty consists of helping or attempting to help another person commit an act of academic dishonesty or willfully assisting another student in the violation of the academic code of integrity. Complicity in academic dishonesty is pre-meditated and intentional. This can include, but is not limited to:

- doing work for another student
- designing or producing a project for another student

- willfully providing answers during an exam, test or quiz
- communicating with another student on a computer, mobile phone or other device while taking an exam
- providing a student with an advance copy of a test
- leaving inappropriate materials behind at the site of an exam or test
- altering outcome results

## Adjudication of Academic Offenses

### Jurisdiction

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

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

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

### The Adjudication Process

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

#### 1. Faculty Authority

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

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

#### 2. Dean's Jurisdiction

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

- Faculty members reporting an allegation of dishonesty must do so within 10 working days of the date of discovery of the alleged offense. The report should be supported by such documentation as is appropriate and delivered to the college/school dean.
- The college/school dean will promptly notify the student of the charge and will arrange a meeting to discuss the charge with the student. The dean will also notify the head of the department or unit in which the offense occurred, and the student's dean if the student is a member of another college/school, that an allegation has been made.
- At the meeting, the student will be presented with the charge and the evidence submitted by the faculty member. He/she will be advised of the procedures, including his/her rights, and given the opportunity to respond. The student may respond immediately or respond in writing within five working days. The signed document will become additional evidence in the case. If the student fails to attend this preliminary meeting, the dean may proceed with the process as appropriate.
- 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.
- When appropriate, the dean hearing the case will gather additional evidence from the student, the complainant and other concerned

parties before the adjudication process.

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

### Other Adjudication Issues

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

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

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

### Penalties

Students are advised that violations of the Student Academic Integrity Code will be treated seriously, with increasingly severe penalties considered for repeat offenders.

- In assigning a penalty, the dean will take into account both the seriousness of the offense and any particular circumstances involved. A second violation may result in suspension or dismissal.
- Penalties for an academic offense may include one or more of the following:
  - resubmission of the work in question
  - submission of additional work for the course in which the offense occurred
  - a lowered grade or loss of credit for the work found to be in violation of the integrity code or a lowered overall grade for the course (to be specified at the time that the penalty is assigned)
  - a failing grade of XF for the course in which the offense occurred
  - suspension for one or more academic terms, including the term in which the offense occurred
  - dismissal from the university
- Penalties (a)–(c) are levied by the dean hearing the case. Penalties (d)–(f) are levied by the dean hearing the case only with the concurrence of the student's dean as applicable. If consensus cannot be reached, the Provost or his/her representative will adjudicate.
- Penalties (d)–(f) will become a permanent part of the student's file maintained indefinitely by the Office

of the Registrar, with appropriate notation indicating that there has been a violation of the Student Academic Integrity Code.

5. Penalties (c)–(e) will result in non-academic sanctions that may include prohibition from extracurricular activities and the loss of athletic scholarships. See the *AUS Student Handbook* for details.
6. The student must remain enrolled in the course in which an infraction has been reported until the hearing is conducted. No refund or cancellation of tuition fees will be permitted in such cases.
7. Students with a record of sanctions resulting from violations of the Student Academic Integrity Code or Student Code of Conduct will not be eligible for the Dean's List.
8. The student may petition to replace an XF grade resulting from a category (d) penalty with an F grade at the time of graduation or following complete withdrawal from the university. For details, please refer to the Appeal of an XF Grade section under Student Petitions and Appeals.

### Suspension and Dismissal

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

#### Suspension

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

A student who is suspended is entitled to resume studies in the same college/school at the conclusion of the period of suspension, provided he/she has satisfied all requirements imposed by the dean hearing the case when the original action was implemented. The student must submit a Reactivation Form to the Office of the Registrar. The form is available [www.aus.edu/registration/forms](http://www.aus.edu/registration/forms).

Courses completed outside AUS while on suspension do not transfer.

#### Dismissal

Dismissal is invoked in cases of serious infractions of rules and regulations and when circumstances indicate that a student's association with the university should be terminated in the interest of maintaining the standards of behavior and conduct normally expected in a university community. In instances

where the dean hearing the case has recommended dismissal, the Academic Appeals Review Committee will review the case and make a recommendation to the Provost.

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

Courses completed outside AUS while dismissed do not transfer.

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

### Notification of Penalty

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

In addition to the above and for penalties (d)–(f), the following notification process will apply:

- For penalty (d), the dean hearing the case will inform the Office of the Registrar.
- For penalty (e), the dean hearing the case will inform the student's dean who will, in turn, notify the Office of the Registrar as well as the Vice Chancellor for Student Affairs and take the appropriate academic action.
- For penalty (f), the dean hearing the case must inform the Vice Provost for Research and Graduate Studies in writing within five working days of the date of the notice. The Vice Provost for Research and Graduate Studies will refer the case to the Academic Appeals Review Committee, which will review it and make a recommendation to the Provost. The Provost will inform the dean hearing the case, the Vice Provost for Research and Graduate Studies, the Office of the Registrar and the Vice Chancellor for Student Affairs of the final decision.

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

### Appeal of Penalty

In cases concerning notation to the student's record [penalties (d)–(f)], students will be notified in writing of their right of appeal. Appeals must be made in writing within five working days of the date of notice. Appeals are limited to grounds of excessive sanction, improper procedure and unavailability of relevant evidence at the time of the meeting with the college/school dean (or appointed designee) to discuss the charge with the student. Appeals must be submitted to the Vice Provost for Research and Graduate Studies. The Office of the Vice Provost for Research and Graduate Studies will review the appeal and may consult the case's written record, the appeal request and any person involved in the adjudication process. Following the review, the Office of the Vice Provost for Research and Graduate Studies may deny the appeal or may lower the sanction or remand the matter to the appropriate dean in the event of improper procedure or new evidence.



# Student Records

## Custody of Records

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

## Student Privacy Rights

Students have the right to:

- inspect and review information contained in their educational records. The university is not required to provide (or allow the making of) copies of these documents. Under specific circumstances, the university may allow specific documents included in a student's record to be provided. Requests for copies of such documents will be reviewed after submission of a signed request from the student concerned. The request form is available at [www.aus.edu/registration/forms](http://www.aus.edu/registration/forms). A nominal fee applies.
- request changes or updates to their personal data. Registered students are given access to update their emergency telephone/mobile contact numbers and their personal email address via the secured online student information system. For mailing address updates, an official request signed by the student concerned must be submitted to the Office of the Registrar/Student Records section. The form is available at [www.aus.edu/registration/forms](http://www.aus.edu/registration/forms).
- request non-disclosure, within the extent of UAE federal and local laws, of personally identifiable information from education records. The university reserves the right to disclose students' records to the immediate guardian of the student and to the private or public authority sponsoring the student, if applicable. For further information on students' records, please check with the Office of the Registrar/Student Records section.

## Academic Transcripts

A permanent record reflecting the academic achievements of each student who registers at the university (also referred to as a "transcript") is maintained by the Office of the Registrar. At the end of every

semester, the Office of the Registrar issues updated transcripts for all the students who were registered for the semester. These transcripts are mailed to every individual student. These copies are not official and are only intended to update students on their academic achievement. Students may also access their transcripts through the secure online student information system. Students are encouraged to review their records online periodically.

Students may obtain copies of their academic transcripts at AUS from the Office of the Registrar. Transcripts will only be released with a signed request from the student concerned or an online request submitted by the student via the secured student information system. The request form is available at [www.aus.edu/registration/forms](http://www.aus.edu/registration/forms). A nominal fee applies. The university will issue only complete transcripts, not parts of the student record.

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

## Records on Academic Integrity Code Violations

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

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

registration at AUS and then transferred to the Office of the Registrar for permanent retention.

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

## Enrollment Verifications and Certifications

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

# Registration and Course Information

## Registration

### Orientation Program

Prior to registration, each college/school holds an orientation session to familiarize students with its specific regulations and assist them with the registration process. These sessions are also to inform the students about potential research/project areas available within the program.

### Academic Advisors

Academic advising is an essential element of the educational process. American University of Sharjah requires advisor-student conferences at least once per semester.

Students are assigned academic advisors who help them in planning their schedules. However, students are responsible for selecting their courses, meeting course prerequisites and adhering to the most recent university policies and procedures. The advisor assists the student in interpreting university policies and procedures. Students are required to consult with their advisor on issues regarding degree requirements.

Some programs require that students have a graduate advisory committee, which has specific responsibilities identified by each graduate program in accordance with university policy.

### Registration Process

Before the registration period begins, the Office of the Registrar posts the registration guide at [www.aus.edu/registration](http://www.aus.edu/registration). The guide provides pertinent information and indicates the registration steps along with the place, date and time for each step. A continually updated list of courses offered is posted on the online student information system as well.

Students must register in a course prior to attending classes. It is the responsibility of the individual student to monitor his/her registration status, which may be done by accessing his/her records through the AUS student information system.

Students who register after the designated date are charged a late registration fee.

New students and transfer students register with their respective college/school. New and transfer students must ensure that all documents required for finalizing their admission, particularly those indicated in the letter of admission, are

submitted to the Office of Enrollment Management/Graduate Admissions before registration begins. Transfer students must complete their transfer file and be awarded transfer credits before the end of their first semester at AUS.

Exchange, non-degree, study abroad, transient and visiting students register through the Office of the Registrar. Registration in courses as an exchange, non-degree or a visiting graduate student requires the approval of the relevant graduate program director.

Continuing and returning students register through the AUS student information system.

Registration by way of proxy is not permitted.

### Thesis and Final Project Registration

See Thesis and Final Project Registration within the Graduation section herein.

### Student Course Load

#### Good Academic Standing

The normal student course load for a full-time graduate student in good academic standing is nine credits per semester. The graduate program director/coordinator may approve a student in good standing to register for up to 12 credits per semester.

#### Academic Probation

The course load of a full-time graduate student on academic probation is six credits.

#### Summer Term Registration

A maximum total of six credits is allowed during a five-week summer term.

The program director/coordinator may further restrict the maximum credits of a probation student in a summer term.

A graduate student may not register for more than three credits of thesis/final project during a five-week summer term.

#### Conditional Admission

Conditionally admitted students are not eligible to register for more than two graduate courses (a maximum of six credits) in their first semester of study.

#### Mature Students Admission

Students admitted as mature students are normally not eligible to register for more than two graduate courses (a

maximum of six credits) in their first semester of study.

### Auditing Courses

A graduate student who wishes to attend a course but who does not wish to participate, take examinations, receive a final grade or receive credit for the course may register to audit the course with the permission of the instructor and the graduate program director/coordinator. The instructor may establish standards of class participation and attendance that must be met if a student is to remain in audit status.

Graduate students may audit an undergraduate course with the permission of the instructor and the graduate program director/coordinator.

Registration to audit a course is managed through the Office of the Registrar. In courses with enrollment limits, priority is given to students registering for credit.

The audited course will appear on a student's transcript as audited. Tuition and fees for audit students are the same as those for students registering for credit.

Changes to or from audit status must be made before the last day of the add and drop period.

### Registration in Independent Study Courses

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

Students are allowed to take one independent study. A second independent study, for a maximum total of eight credits used toward the graduation requirements of one degree program, could be approved by the student's graduate program director/coordinator for graduation purposes only.

In order to be eligible to pursue an independent study, students must be in good academic standing.

An independent study should not be used to meet major requirements, core requirements, concentration requirements or foundation courses requirements.

Students interested in registering for an independent study course must complete the Independent Study Application form available at [www.aus.edu/registration/forms](http://www.aus.edu/registration/forms) and submit it to the Office of the Registrar

during the early registration period of the upcoming semester/term. Registration is handled by the Office of the Registrar.

Tuition and fees for independent study courses are the same as those for other courses.

Independent study courses are graded and appear on the student's transcript.

### **Independent Course (1 to 4 credits)**

An independent course is listed in the catalog but offered in an independent study format. The course is coded using the course number in the catalog. Approved special topic courses can be offered in an independent course format.

Students are not allowed to repeat courses in an independent course format.

### **Directed Study (1 to 4 credits)**

A directed study is an investigation under faculty supervision beyond the scope of existing courses. Directed study courses are numbered as 596 or 696. The three-letter course prefix reflects the field of study of the course.

A directed study proposal must be accompanied by a syllabus that provides a description and clearly specified outcomes.

### **AUS Students Studying Abroad**

AUS offers students the opportunity to study abroad at other institutions during a regular semester and gain full AUS course credit. The International Exchange Office aims to provide students the opportunity to immerse themselves in a different culture, to enhance their language skills, to build international work connections and to gain further insight into their field of expertise. With this in mind, students must choose to attend accredited institutions that provide learning experiences similar to those offered by AUS and which meet the following additional requirements:

- The host university is recognized by the UAE Ministry of Higher Education and Scientific Research.
- The language of instruction of the course(s) taken at the host university must be English, except for foreign language courses conducted in other languages. Certified translations of syllabi or other relevant material may be required.
- With the approval of the graduate program director or the student's associate dean, a student pursuing a study abroad experience at colleges and universities recognized by the United States Department of Education regional accreditation

authorities and the UAE Ministry of Higher Education and Scientific Research, or at an official AUS exchange partner university, may take course(s) the host university that are taught in languages other than English. Courses taught in languages other than English must be determined to be equivalent in content to AUS courses or approved to meet specific degree requirements. Certified translations of syllabi or other relevant material may be required.

- Business administration courses will be transferred only from programs that are accredited by AACSB or EQUIS or from universities approved by the School of Business Administration.
- Graduation residence requirements must be met. For details, see Graduation Residence Requirements under Graduation/Graduation Requirements later in this section.

Of particular interest might be institutions with which AUS has semester exchange programs.

### **Requirements**

Students who wish to study abroad during a regular semester must have, at application time, a minimum cumulative GPA of 3.30 and have completed at least six credits of graduate courses in residence at AUS.

Courses taken at AUS where D and/or F grades were earned cannot be repeated in the context of a study abroad program for transfer of credits.

Interested students must apply online to the International Exchange Office. Information related to application fees and deadlines is available at [www.aus.edu/ixo](http://www.aus.edu/ixo). Students who are approved by the AUS International Exchange Office and the relevant graduate program director or associate dean will be guided by the office through the application process. Students should be aware that further admission requirements might exist at the host institution.

The approved Course Permission Form-Outgoing Students must be deposited at the Office of the Registrar prior to the host institution's program start. Failure to do so will result in no credit being awarded for the work completed abroad.

### **Registration**

AUS students who plan to study abroad must register with the AUS Office of the Registrar in addition to registering with the study abroad host university.

### **Transfer of Credits**

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

- The student submits to the AUS Office of the Registrar an official transcript indicating that the student met the course's passing grade requirement, as indicated on the study abroad form.
- The student had a 3.30 cumulative GPA at the time study abroad courses are taken at the host university.
- The student has earned the equivalent of a B grade or higher on the study abroad course.

Grades earned in courses completed outside AUS do not count in the student's cumulative GPA (CGPA). Credits of transferred courses count in the cumulative earned hours and may apply towards meeting graduation requirements.

For further information on studying abroad, please contact the International Exchange Office at [ixo@aus.edu](mailto:ixo@aus.edu).

### **Summer Courses outside AUS**

#### **Requirements**

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

- The student must be in good academic standing at AUS at the time that the application is reviewed.
- The summer courses at the host university must not be taken as attempts to repeat AUS courses in which an F grade was previously earned.
- The host university must be located outside the UAE.
- The host university must be recognized by the UAE Ministry of Higher Education and Scientific Research.
- The host university must provide learning experiences similar to those offered by AUS.
- Contact hours for courses at the host university must be equivalent to or greater than the contact hours required for equivalent courses at AUS.
- The summer term at the host institution must not begin prior to the end of the spring semester examination period at AUS.
- The language of instruction of the course(s) taken at the host university must be English, except for foreign language courses conducted in other

languages. Certified translations of syllabi or other relevant material may be required.

- With the consent of the relevant graduate program director or associate dean, a student taking summer courses at colleges and universities recognized by the United States Department of Education Regional Accreditation Authorities and the UAE Ministry of Higher Education and Scientific Research, or at an official AUS exchange partner university, may take course(s) at the host university that are taught in languages other than English. Such courses must be determined to be equivalent in content to AUS courses or approved to meet specific degree requirements. Certified translations of syllabi or other relevant material may be required.
- Business administration courses will be transferred only from programs that are AACSB accredited or EQUIS accredited or from universities approved by the School of Business Administration.
- Graduation residence requirements must be met. For details, see Graduation Residence Requirements under Graduation/Graduation Requirements later in this section.

Some programs may reserve the right not to allow any courses to be taken at another college/university.

#### **Amount of Credit**

- Students may normally transfer no more than six credits for a five-week summer session conducted at a host university
- For summer sessions of a different duration, AUS normally allows no more than the equivalent credits of the five-week summer term at AUS.
- Students may register for more than one summer term between spring and fall semesters with approval of the relevant graduate program director/coordinator or the student's associate dean. Students may not be concurrently registered in more than one summer term.
- A college/school may place further restrictions on the allowable maximum number of credits. Students must consult with the relevant graduate program director/coordinator when planning for summer courses outside AUS.

#### **Application Process**

Prior to registering for courses at the host university, students must complete the Summer Permission to Take Courses Outside AUS form available at [www.aus.edu/registration/forms](http://www.aus.edu/registration/forms) and submit it to the Office of the Registrar.

Credits will not be awarded if the completed form is not submitted to the Office of the Registrar prior to registration in summer courses.

All courses must be approved by the relevant graduate program director/coordinator or associate dean prior to registration in summer courses.

For information on visas and other related issues, please contact the International Exchange Office at [ixo@aus.edu](mailto:ixo@aus.edu).

#### **Transfer of Credits**

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

- Upon completion of the course(s) students must submit to the Office of the Registrar an official transcript from the host university demonstrating that the minimum course passing grade requirement indicated on the permission form was met.
- The student was in good academic standing at AUS at the time summer courses are taken at the host university.

Grades earned in summer courses completed outside AUS do not count in the student's cumulative GPA (CGPA). Credits of transferred courses count in the cumulative earned hours and may apply towards meeting graduation requirements.

For further information related to transfer of credits, please contact the Office of the Registrar.

#### **Exchange, Mature, Non-degree, Transient and Visiting Student Registration**

See the corresponding sections under Admission to Graduate Studies.

#### **Tuition and Fees**

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

#### **Add and Drop**

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

Courses dropped during the add and drop period are not recorded in a student's transcript. The semester tuition is recalculated accordingly with

no fee penalty charged. Students interested in adding and/or dropping courses should first consult with their respective advisors.

Students who register for a course and do not attend it may be automatically dropped. Students who are automatically dropped will not be eligible for a tuition refund or adjustment.

#### **Attendance and Lateness**

Attendance and participation in all class, workshop and laboratory sessions are essential to the process of education at AUS. Students benefit from the lectures and discussions with their instructors and fellow students. For this reason, students are expected to attend class regularly.

Lateness or absence hinders progress for the individual and the class and affects the student's academic achievement.

#### **Course Withdrawal**

Students may withdraw from courses without grade penalty by submitting the Withdrawal Form (available at [www.aus.edu/registration/forms](http://www.aus.edu/registration/forms)). The student must submit the form in person to the Office of the Registrar.

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

As of the end of the withdrawal period and up to the last day of classes, a grade of WF will be recorded for those who withdraw from a course. The student will receive 0.00 grade points (F grade) for the WF, and this will be used in calculating the student's GPA. Furthermore, as of the end of the withdrawal period, faculty members may assign a WF for excessive absence.

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

Students who register for a course and do not attend it may be automatically dropped. Students who are automatically dropped will not be eligible for a tuition refund or adjustment.

A student may not withdraw from a course in which an academic integrity offense was committed until the case has been reviewed and a decision has been rendered by the dean (or appointed designee).

### Withdrawal from the University

Students seeking to withdraw from the university must submit the Complete Withdrawal Form to the Office of the Registrar in person. The form is available at [www.aus.edu/registration/forms](http://www.aus.edu/registration/forms).

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

<b>Withdrawal from the University*</b>
<b>Before the end of the first week of classes</b>
100% refund excluding non-refundable deposits
<b>During the second week of classes</b>
50% refund of tuition
<b>During the third week of classes</b>
25% refund of tuition
<b>After the third week of classes</b>
0% refund
<i>*Refunds for summer term withdrawals are prorated.</i>

### Interrupted Studies and Reinstatement

Students are expected to maintain continuous enrollment (fall and spring semesters) until they complete their program. For the purpose of this policy, AUS students studying abroad through an AUS-recognized semester exchange program are considered to be in residence.

Enrollment in zero-credit courses only does not establish residency for the purpose of this policy.

Students who do not complete their thesis/final project after one semester of thesis/final project work, but have otherwise completed all their course work, are exempt from this policy.

### Students Away for Two Semesters

- A graduate student may take up to two semesters off from graduate studies but must inform the Office of the Registrar in writing of their intention to do so. Reactivation of the student's record is automatic; however, students must submit a Reactivation Form to the Office of the Registrar one month prior to registration. The form is available at [www.aus.edu/registration/forms](http://www.aus.edu/registration/forms).
- Graduate students who were on probation prior to interrupting studies must petition for resuming studies to

the Office of the Registrar one month prior to registration. The Student Petition Form is available at [www.aus.edu/registration/forms](http://www.aus.edu/registration/forms). Reactivation of the student's record must be approved by the student's program director/coordinator.

- Graduate students seeking reinstatement following academic dismissal must petition to the student's program director/coordinator one month prior to registration. The Student Petition Form is available at [www.aus.edu/registration/forms](http://www.aus.edu/registration/forms). Petitions will be reviewed by the graduate program director/coordinator who will make a written recommendation to the appropriate dean (or appointed designee). The dean (or appointed designee) will then provide a recommendation to the Office of the Vice Provost for Research and Graduate Studies. Decisions regarding continuation in the program will be made by the Office of the Vice Provost for Research and Graduate Studies in consultation with the appropriate dean (or appointed designee). Reinstatement following academic dismissal is granted only in exceptional circumstances.

### Students Away Longer than Two Semesters

Graduate students in good standing who leave AUS for more than two consecutive semesters must submit a new application for admission to the Office of Enrollment Management/Graduate Admissions.

Students on probation, or academically dismissed students who have been away longer than two consecutive semesters, may not apply for readmission.

### Transfer of Credits

Courses taken at another institution while on leave from AUS will not be transferred.

## Course Information

### Course Code

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

### Course Credits

All courses are valued in credits. Normally, each credit hour represents 50 minutes of class instruction per week each semester, two or three 50-minute laboratory sessions per week

each semester, or one or two 50-minute recitation sessions per week each semester.

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

### Course Descriptions and Syllabi

Except for special topic courses and independent study courses, descriptions of courses offered by AUS are listed in the Course Descriptions section of this catalog and on the university website. Courses are grouped by college/school and sorted by course subject and course code. Descriptions of special topic courses are made available during registration in the college/school offering the course.

Course syllabi are available from the department or program office. They include course title and course code; prerequisites (if any) and co-requisites (if any); name, contact information and office hours of the instructor; course description; course outcomes; course schedule; assignments and due dates; assessment methods and the weights assigned to them; and reading material and course texts.

### Course Prerequisites

Certain courses require a minimum background of knowledge, as indicated by prerequisite courses cited in individual course descriptions. Titles and numbers refer to AUS courses. Equivalent courses satisfactorily completed at other institutions may also meet prerequisite requirements by transfer credit.

Courses for which a grade below C was received do not satisfy prerequisite requirements.

### Courses Offerings and Schedules

Courses are offered at the discretion of the individual graduate programs. Students should check with the respective programs for information on when courses will be offered.

To accommodate graduate student work schedules, some programs offer their courses in the evening or over the weekend. For details on course schedules, please refer to the semester online course offerings or check with the graduate program offering the course.

# Fields of Study

## Degree Offerings

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

### College of Architecture, Art and Design

- Master of Urban Planning

### College of Arts and Sciences

- Master of Arts in English/Arabic/ English Translation and Interpreting
- Master of Arts in Teaching English to Speakers of Other Languages
- Master of Science in Mathematics

### College of Engineering

- Master of Science in Chemical Engineering
- Master of Science in Civil Engineering
- Master of Science in Computer Engineering
- Master of Science in Electrical Engineering
- Master of Science in Engineering Systems Management
- Master of Science in Mechanical Engineering

- Master of Science in Mechatronics Engineering

### School of Business Administration

- Executive Master of Business Administration
- Master of Business Administration
- Master of Science in Accounting

## Change of Program

Students seeking to change their graduate degree program must complete the Change of Major Form available from the Office of the Registrar. Requests for a change of program should be submitted to the office of the graduate program director/coordinator of the program of the student's choice by the last day of the 12th week of classes of the fall or spring semester. The office of the graduate program director/coordinator will forward the approved forms to the Office of the Registrar. Forms received by the Office of the Registrar by the end of the add and drop period will be effective as of the following semester/term.

To be eligible for a change of program, the graduate student must meet the requirements for admission to the new program. Please refer to the relevant program's catalog section for information on admission requirements.

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

## Concentrations and Themes

Some programs allow students the choice of an area of concentration or theme. This option offers students more in-depth knowledge of a subject area. Please refer to the relevant program section for concentration/ theme requirements. Where the concentration/theme is mandatory, a student must declare his/her choice when applying to the program. Where the concentration is an option, a student must indicate his/ her choice by filling in the appropriate information on the Change of Major Form.

Change of Major forms must be submitted to the office of the graduate program director/coordinator by the last day of the 12th week of classes of the fall or spring semester. The office of the graduate program director/coordinator will forward the approved forms to the Office of the Registrar. Forms submitted by the deadline will be effective as of the following semester/term. The Change of Major Form is available from the Office of the Registrar.

# Grades and Academic Standing

## Grading System

Courses are graded using letter grades. The grade point average (GPA) is based on a four-point scale. The AUS grading system is provided below:

Excellent	
A	equals 4.00 grade points
PDS	Pass with Distinction- equals 4.00 grade points (EMBA program only)
Meets Expectation	
A-	equals 3.70 grade points
B+	equals 3.30 grade points
B	equals 3.00 grade points
P	Pass - equals 3.00 grade points (EMBA program only)
Below Expectation	
B-	equals 2.70 grade points
C+	equals 2.30 grade points
C	equals 2.00 grade points
LP	Low Pass - equals 2.00 grade points (EMBA program only)
Fail	
F	equals 0.00 grade points

Academic Integrity Violation Fail	
XF	equals 0.00 grade points
Withdrawal Fail	
WF	equals 0.00 grade points

Grades not calculated in the grade point average are:

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

The minimum passing grade for a graduate course is C. Normally, graduate students who receive an F in a graduate course will not be allowed to continue in the program.

## Incomplete Grades

The work for a course must be completed by the end of the final exam day for that course. In emergency circumstances, a student may request permission from the course instructor and graduate program director/coordinator to complete a course in the following semester. A grade of I (incomplete) is assigned for the course. The instructor of the course will then process an Incomplete Grade Form and submit it to the Office of the Registrar for final approval and implementation. The Incomplete Grade Form must be submitted within the final examinations period.

Students must complete an incomplete course before the end of the following regular semester. Otherwise, a tentative grade estimated on the basis of work already completed may be recorded. Failure to complete the course within the following semester may result in the grade being recorded

as F unless a tentative grade has been reported previously.

### In Progress Grades

A thesis/final project normally requires longer than one semester to be completed. An In Progress (IP) grade is recorded until completion of the thesis/final project. Once the thesis/final project is defended, the program director/coordinator will inform the Office of the Registrar of the final grade.

### Repeating Courses

Normally, graduate courses cannot be repeated. With the recommendation of the program director/coordinator and the approval of the appropriate dean (or appointed designee), a graduate student may be allowed to repeat any course in which a grade of B-, C+, C or F is received. The original grade and the new grade will appear in the transcript, but only the new grade will be calculated into the GPA.

No course may be taken more than twice.

Students may not repeat courses in an independent course format.

**Note:** *Normally, graduate students who receive an F in a graduate course will not be allowed to continue in the program.*

### Grade Point Average

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

#### Quality Points

The quality points earned in a course are calculated by multiplying the grade point value of the letter grade by the number of credits the course is worth.

Only the last entry of the repeated course is counted in the calculation of the CGPA.

#### Semester Grade Point Average (SGPA)

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

$$SGPA = \frac{\text{sum (quality points of courses taken in semester X)}}{\text{sum (credits of courses taken in semester X)}}$$

#### Cumulative Grade Point Average (CGPA)

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

$$CGPA = \frac{\text{sum (quality points of courses taken in all semesters)}}{\text{sum (credits of courses taken in all semesters)}}$$

Only the last entry of a repeated course is considered in the CGPA calculation.

#### Academic Standing

A student's academic standing is determined by his/her CGPA.

#### Good Standing

In order to be considered in good standing, graduate students must maintain a CGPA of at least 3.00 out of 4.00.

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

#### Academic Probation

If a graduate student's cumulative GPA is below 3.00, the student is placed on academic probation. During probation status, the following conditions apply:

- A graduate student on probation may not register for more than six credits in a semester. The program director/coordinator may restrict the summer course load of a graduate student on probation to three credits.
- A graduate student on probation may not register for thesis or final project credits until a cumulative GPA of 3.00 is achieved.

Probation will be removed at the end of any semester in which the student attains a CGPA of 3.00.

#### Academic Dismissal

A graduate student on probation who does not achieve good academic standing by the end of the regular semester following the term in which the cumulative GPA fell below 3.00 is academically dismissed from the university.

Normally, graduate students who receive an F in a graduate course will not be allowed to continue in the university.

Students who have been academically dismissed as a result of failing to meet the requirements of good standing or who receive an F in a graduate course may petition for reinstatement. Reinstatement following academic dismissal is granted only in exceptional circumstances.

Academically dismissed students seeking to move to another graduate program must petition to the Office of the Vice Provost for Research and Graduate Studies. The Student Petition Form is available at [www.aus.edu/registration/forms](http://www.aus.edu/registration/forms). Petitions will be reviewed by the graduate program director/coordinator, who will make a written recommendation to the appropriate dean (or appointed designee). The dean (or appointed designee) will then provide a written recommendation and forward the petition to the Office of the Vice Provost for Research and Graduate Studies. Decisions regarding continuation in the program will be made by the Office of the Vice Provost for Research and Graduate Studies in consultation with the appropriate dean (or appointed designee).

Students who have been academically dismissed, reinstated and subsequently dismissed will normally not be reinstated.

Academically dismissed students who have been away longer than two consecutive semesters may not apply for readmission.

# Student Petitions and Appeals

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## Student Responsibility

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

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

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## Petitions

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

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## Appeal of Academic-Related Issues

If a student wishes to discuss an issue pertaining to a course, instructor or other academic-related issues, the student may direct his/her concern to the involved faculty member. If the issue or grievance is not resolved, the student should contact the graduate program director/coordinator and/or dean (or appointed designee) of the college/school.

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

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## Appeal of a Grade

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

A student who believes that he/she has a legitimate concern regarding a final course grade must inform the professor responsible for the course in writing and then discuss the matter with the professor. If a resolution cannot be reached, the student should contact the program director/coordinator in writing to file a formal grade appeal no later than two working days after the grade has been made available on the student information system. If the matter cannot be resolved at the department level, a grade appeal review will be conducted by the college/school, and the student and the professor responsible for the course will be notified of the decision of the dean (or appointed designee).

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

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## Appeal of an XF Grade

In cases where a failing grade of XF was assigned to a course as a result of an academic offense penalty, a student may petition during the semester of graduation, or at the time of complete withdrawal from AUS, to have the

grade converted to an F on the academic transcript. The petition is submitted to the Office of the Registrar along with the Application for Graduation or the Complete Withdrawal Form. The final decision will be made by the Office of the Vice Provost for Research and Graduate Studies.

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



# Graduation

## Thesis and Final Project

Master's theses or final project reports document research conducted by AUS graduate students under the guidance and supervision of AUS faculty members. They are the culmination of the students' programs of study and are expected to reflect appropriate scholarly depth and rigor. Theses and final projects are defended publicly.

The Office of the Vice Provost for Research and Graduate Studies in collaboration with the Graduate Program Committee, establishes and oversees the regulations and requirements for theses and final projects at AUS. Degree candidates are responsible for adhering to these requirements as published in the *Guide to Graduate Thesis Policies and Procedures/Guide to Graduate Project Policies and Procedures* (available on iLearn and accessible using the following path: iLearn-Community-Office of Research and Graduate Studies (ORGS)-Graduate Studies). In addition, degree candidates are responsible for familiarizing themselves with and adhering to the standards and regulations of the latest edition of the *AUS Guide to Writing and Formatting Graduate Theses/AUS Guide to Writing and Formatting Graduate Projects* (available through the same aforementioned iLearn path).

It is AUS policy to maintain master's theses in the AUS Archives and also to make these available to other students and scholars. The AUS Library is responsible for the archiving and binding of the master's thesis. Detailed procedures and requirements for submitting master's theses to the AUS Library and Archives for binding are outlined in the *Guide to Graduate Thesis Policies and Procedures*.

AUS also has a stringent policy regarding research involving humans as subjects. Detailed information on such research activities may be found on iLearn and accessible using the following path: iLearn-Community-Office of Research and Graduate Studies (ORGS)-Research-IRB.

### Registering for Thesis/Final Project Credit

Graduate students registering for thesis/final project credits must register through the Office of the Registrar. Only students in good academic standing may register for thesis/final project credits.

### Thesis/Final Project First Registration

In the first semester of thesis/final project work (usually no earlier than the second semester of enrollment in the graduate program), a student normally registers for three thesis/final project credits working on the thesis/final project proposal.

Before the end of the add and drop period, graduate program directors/coordinators must provide the Office of the Registrar with a list of all students who will be registered for thesis/final project (XXX 699/XXX 698), along with their thesis/final project titles and the names of their advisors.

The thesis proposal must be orally presented to the thesis committee before the end of the first semester that the student is registered for thesis/final project. The thesis proposal must be approved in writing by the thesis committee. Final project proposals are approved by the graduate program director/coordinator.

Students who do not demonstrate adequate progress by the end of the 10th week of the semester will be withdrawn from the thesis/final project course by their advisors.

For details on thesis/final project proposal preparation and submission, please refer to the *Guide to Graduate Thesis Policies and Procedures/ Guide to Graduate Project Policies and Procedures* available on iLearn and accessible using the following path: iLearn-Community-Office of Research and Graduate Studies (ORGS)-Graduate Studies.

### Thesis/Final Project Continuous Enrollment

Before the end of the add and drop period, the program director/coordinator will email the Office of the Registrar a list of the names and ID numbers of those students maintaining enrollment for registration into their respective thesis/final project courses, along with their thesis/final project titles, the names of their advisors and the appropriate credit and billing hours.

### Thesis/Final Project Time Extensions

Students who do not complete the thesis/final project after registering for thesis/final project full credits must register for the full thesis/final project credits but with zero billing hours until the thesis/project is finished and defended. A thesis/final project extension fee is charged per semester.

All students must be registered in the semester in which they defend their thesis.

**Note:** *A student must complete all degree requirements within five years from the time of initial enrollment into the program.*

### Switching from Final Project to Thesis and Vice Versa

Graduate students who wish to switch from thesis to final project (or vice versa) must submit their requests within the published deadlines. The petition must be approved by the student's graduate program director/coordinator.

A student who switches from thesis to final project (or vice versa) will be given an N for no grade for the thesis/final project credits (i.e., XXX 698 or XXX 699) completed for the first option selected.

Switching from thesis to project could require the student to take additional courses. The student must pay for any additional credits or courses required as a result of switching from thesis to final project (or vice versa).

### Grading of Thesis/Final Project

A thesis/final project grade will be awarded after completion and public defense of the thesis/final project.

If the thesis/final project work continues into a second semester, an IP grade will be assigned and the student must register for the thesis/final project course again but only for the balance thesis credits (i.e., enroll in the final three credits if he/she only enrolled in three the previous semester).

The IP designation will be used until completion and successful defense of the thesis/final project.

## Graduation Requirements

### Catalog

The graduation requirements for any individual student are normally determined by the catalog that was effective when the student admitted in the major. A student may choose to follow the catalog effective for the semester when the student expects to complete graduation requirements. To change catalogs, a student must file a Change of Academic Catalog Form (available at [www.aus.edu/registration/forms](http://www.aus.edu/registration/forms)) with the Office of the Registrar no later than the end of Add/Drop period of the student's graduation semester/term. A

student who changes program may petition to revert to the catalog in effect at the time of matriculation into the university. The Petition Form (available at [www.aus.edu/registration/forms](http://www.aus.edu/registration/forms)) must be approved by the student's graduate program director or associate dean and submitted to the Office of the Registrar no later than the end of the add/drop period of the student's graduation semester/term. Every individual student is personally responsible for meeting all graduation requirements as detailed in his/her catalog year.

If a required course within a program changes its number of credits, then the number of credits required by the program for graduation may, at the discretion of the college/school, change by the same amount provided the minimum total number of credits for graduation is 30 and the CGPA is at least 3.00.

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

**Disclaimer:** *Course information, content and prerequisites may be subject to change as a result of the university's commitment to a process of continual improvement in academic programs. Students must comply with the most up-to-date course requirements.*

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#### Courses

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

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#### Graduation Residence Requirements

Candidates for the master's degree are expected to complete their last semester in residence at the university, unless registered with an official AUS exchange partner.

In order to obtain a master's degree from AUS, students must complete at least three semesters in residence at AUS. Coursework completed at an official AUS exchange partner will meet the graduation residence requirement provided the courses have been pre-approved by the relevant graduate program director or associate dean.

Transfer student may transfer up to nine graduate credits from a recognized graduate school at an accredited university. For details, please refer to the Transfer Credit Policy under the Admission to Graduate Studies section earlier in this catalog.

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#### Time Limit on Duration of Study and Course Year Limit

Regardless of the catalog by which the student's graduation requirements are governed, all degree requirements must be completed within five years of admission to AUS as a graduate student, inclusive of any leave.

In addition, credits more than five years old (courses transferred to AUS) at the time of graduation may not be counted toward the fulfillment of a graduate degree program.

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#### Academic Standing Requirement

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

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#### Graduation Procedures

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##### Participation in the Commencement Ceremony

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

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

Graduate students registered at the 11th week of a semester for courses/thesis/final project necessary to complete their degree requirements may participate in commencement at the end of that semester, unless the college/school notifies the Office of the Registrar that graduation will be delayed because of lack of progress on the thesis/final project.

Students who do not wish to participate in the commencement exercises of their semester of graduation must complete the Absentia Form, which is available at [www.aus.edu/registration/forms](http://www.aus.edu/registration/forms) or [www.aus.edu/commencement](http://www.aus.edu/commencement). Absentia graduates are not eligible to participate in another semester commencement ceremony.

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#### Application for Graduation

Candidates for graduate degrees file an Application for Graduation form (available at [www.aus.edu/registration/forms](http://www.aus.edu/registration/forms) or [www.aus.edu/commencement](http://www.aus.edu/commencement)) with the Office of the Registrar during the registration period of the last expected term of study. Only after an Application for Graduation form has been filed can

the Office of the Registrar begin processing the necessary information for final certification for graduation.

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

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#### Conferral of Degrees

Only students who have successfully completed degree requirements and all thesis requirements, including corrections and final submission of the completed thesis to the library, by the end of the term for which they have applied to graduate are certified for conferral of a degree.

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

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#### Names on Diplomas

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

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#### Attestation of Diplomas and Transcripts

The Office of the Registrar provides information relevant to the attestation of diplomas and transcripts with the UAE Ministry of Higher Education and Scientific Research. For details, please see [www.aus.edu/commencement](http://www.aus.edu/commencement).





# College of Architecture, Art and Design

## Dean

Peter Di Sabatino

## Associate Dean

Ahmed Mokhtar

## Director of Graduate Programs

Ahmed Mokhtar

## Master of Urban Planning (MUP)

Michael Hughes, Head and Coordinator

Urban planning is concerned with creating pleasing and functional places where present and future generations can live, work, entertain and engage in their customary community, social, religious and cultural activities.

Urban planning has roots in architecture, engineering, public health, law and the social sciences. Planners today combine design, analytical and communication skills to help communities manage change. Urban planning involves government, private enterprise and local communities taking concerted action toward achieving a common goal.

The Master of Urban Planning (MUP) at AUS provides a specialized and professional education that enables graduates to exert leadership in managing urban growth, developing urbanization policies and promoting social development. The program imparts to students ethical standards compatible with the values of local cultural settings, principles of social justice and concerns for environmental protection and sustainability. More details on the program are available at [www.aus.edu/programs/mup](http://www.aus.edu/programs/mup).

### Program Mission

The MUP program prepares individuals to become experts and leaders in the management and planning of urban development; in doing so, they will be guided by professional and ethical standards rooted in values of sustainability, local culture and social justice.

### Program Goals

The MUP program seeks to:

- offer a high-quality educational setting that integrates theoretical principles of urban planning with practical methods and applications
- pursue approaches to teaching and learning that emphasize dealing with practical real-world issues and problems

- support and promote original interdisciplinary research in urban planning and related fields
- advance cooperation and forge partnerships with local communities, be they governmental, professional, academic and other local groups such as community-based organizations, not-for-profit entities and non-governmental organizations

### Program Outcomes

Graduates of the MUP program will be able to:

- use quantitative, qualitative and visual techniques to analyze and interpret data and communicate information in support of planning and policy-making for cities and regions
- lead and guide locally relevant processes, which include stakeholder participation, for making and implementing different kinds of plans
- undertake theoretical and empirical research and analysis in an interdisciplinary setting to foster sound insights into planning for sustainable places

### Admission Requirements

Applicants are required to fulfill the university's general admission requirements for graduate studies.

The program admits students from all fields of study including, but not limited to, urban planning, architecture, engineering, business, the humanities and the social sciences.

The Admissions Committee consists of the Coordinator of the Master of Urban Planning program and two faculty members who teach in the program—one from the College of Architecture, Art and Design and one from the College of Engineering.

Applicants must submit their most recent curriculum vitae (CV) with the application package.

### Degree Requirements

The MUP degree is awarded after the successful completion of a minimum of 33 credits and a maximum of 48 credits (up to 15 additional credits—five courses—in foundation courses). Foundation courses may be waived when the waiver policy requirements are met.

Students must complete the degree requirements within five years from the time of initial enrollment in the program. A minimum cumulative grade point average of 3.00 is required.

### Graduation Requirements

To graduate with an MUP degree, students must successfully complete the following minimum requirements:

- 18 credits in core courses
- six credits in a required capstone experience
- a minimum of nine credits in elective courses

### Foundation Courses Requirement

Students admitted to the MUP program may be required to complete a maximum of 15 credits in foundation courses, which serve as preparation for the core courses. The number of foundation courses required will normally depend on courses completed at the undergraduate level. Foundation courses may be waived when the waiver policy requirements are met.

#### Foundation Courses (15 credits)

- UPL 501 Fundamentals of Urban Planning
- UPL 547 Research Methods and Analysis
- UPL 550 Urban Economics and Analysis
- UPL 572 Urban Transportation Systems Planning Techniques
- UPL 582 Theory and Principles of Urban Design

#### Waiver Policy

Students may qualify to waive any or all of the foundation courses. In general, a course may be waived if the student has completed comparable course work at the undergraduate level. Waivers are only granted at the time of admission, after an official, sealed transcript is received by the AUS Office of Enrollment Management/Graduate Admissions. Students may be required to submit course documentation in order to qualify. The waiver rules are as follows:

- Students may waive foundation courses if two related undergraduate courses have been completed. Only courses taken at an accredited university toward a degree and with a minimum grade of B will be considered.
- Students with relevant professional experience that indicates mastery over the content of a foundation course may be granted a waiver based on a written or oral assessment.

- Students may be required to take a placement exam in order to waive a foundation course.

### **Core Courses Requirement (18 credits)**

Students must complete the following UPL courses:

- UPL 541 Planning Theory and Methods
- UPL 548 Environmental Planning
- UPL 556 Spatial Analysis for Planners
- UPL 565 Land Use Planning Principles and Practice
- UPL 584 Urbanism and Urban Form Analysis
- UPL 597 Urban Planning Internship
- UPL 686 Space, Society and the Public Realm

#### *Internship Waiver*

MUP student who have completed a minimum of eight weeks of professional experience related to urban planning are eligible to apply for a waiver of the internship requirement (UPL 597). Requests for waivers are evaluated by the MUP coordinator. Approved waivers are communicated to the Office of the Registrar.

### **Required Capstone Experience (6 credits)**

Students must select one capstone experience from among the three listed below. Students must first receive permission from the program coordinator in order to choose the final project or master's thesis option.

- UPL 667 Urban Planning Studio

This experience involves working as a group on applying substantive urban planning skills. It involves fieldwork and hands-on analysis and application.

- UPL 698 Final Project

This involves individual work by a student, under faculty supervision, on an applied topic. For more information, please refer to the Master's Project (Guides and Documents) folder available on iLearn and accessible using the following path: iLearn-Community-Office of Research and Graduate Studies (ORGS)-Graduate Studies.

For registration details, please refer to Thesis and Final Project in the Academic Policies and Regulations section of this catalog.

- UPL 699 Master's Thesis

This involves individual work by a student, under faculty supervision, on an original piece of research. For more information, please refer to the Master's Thesis (Guides and

Documents) folder available on iLearn and accessible using the following path: iLearn-Community-Office of Research and Graduate Studies (ORGS)-Graduate Studies.

For registration details, please refer to Thesis and Final Project under the Academic Policies and Regulations section of this catalog.

### **Elective Courses (minimum of 9 credits)**

Students must complete three elective courses (a minimum of 9 credits) selected in consultation with their advisor from any university graduate-level course not counted as a core or capstone course.

### **Academic Advising**

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Program advising procedures provide students with orientation and guidance on the program and the profession. Students are assigned a faculty mentor based on their area of interest. Students meet with their faculty mentor every semester to discuss curricular progress and changes in circumstances, if any. Students subsequently meet with the program coordinator, who confirms course choices for the next semester. The program coordinator will either clear the students to register themselves via the secured online student information system or register them in the courses selected for the following semester.

# College of Arts and Sciences

## Dean

Mahmoud Anabtawi

## Associate Deans

Ahmad Al-Issa

Pia-Kristina Anderson

## Director of Graduate Programs

Pia-Kristina Anderson

## Master of Arts in English/Arabic/English Translation and Interpreting (MATI)

Ronak Husni, Head

Ahmed Ali, Coordinator

The Master of Arts in English/Arabic/English Translation and Interpreting (MATI) responds to the vital role that intercultural communication plays in international encounters and the growing impact of the Arab region on world affairs by equipping graduates with highly specialized translation and interpreting skills in English and in Arabic. The MATI program places the diverse range of skills required for translation and interpreting within a general theoretical framework, which provides students with the conceptual tools to identify, analyze and resolve problems and develop a reflective approach to translation and interpreting. The MATI program provides students with advanced training in translation and interpreting techniques, as well as in terminology management, machine translation (MT), translation memory (TM) and language engineering areas most relevant to the work of translators and interpreters in today's complex web of communication.

## Program Goals

To fulfill its mission, the MATI program aims to:

- equip graduates with highly specialized translation and interpreting skills and techniques in English and in Arabic
- provide students with the conceptual tools to identify, analyze and resolve problems and develop a reflective approach to translation and interpreting
- enhance their knowledge of English and Arabic language and linguistics as they relate to translation and interpreting

- expose students to the relevant technologies for translation and interpreting
- prepare students to respond confidently to the demands of translation and interpreting within the fields of business, science, international relations, law and journalism
- further develop students' knowledge of relevant research methods and academic writing conventions

## Program Outcomes

Graduates of the MATI program should be able to:

- demonstrate competence in translation and interpreting into and out of English and Arabic
- demonstrate the ability to reflect upon and use relevant theories of translation and interpreting in the production and assessment of translation and interpreting tasks
- apply knowledge of English and Arabic language and linguistics to the tasks of translation and interpreting
- apply relevant technologies to translation and interpreting activities
- perform competently in translating and interpreting for business, science, international relations, law and journalism
- employ appropriate research methodologies and conventions of academic writing

## Admission Requirements

Applicants are required to fulfill the general university requirements for graduate admission. In addition, non-native speakers of Arabic must hold a BA in Arabic.

Conditional admission status may be granted to applicants with a minimum overall GPA of 2.50 (or equivalent) and a 2.50 or its equivalent in 300- and 400-level courses in discipline(s) relevant to the program, and at least three years of relevant practical experience in translation and/or interpreting. In such cases, the student must take TRA 500 Principles and Strategies of Translation and another course as specified by the program director in their first semester of study, and must attain a GPA of 3.00 (B) or above for that semester to achieve full admission and to be allowed to proceed. Conditional admission applicants must also meet the general university conditional admission requirements as outlined in the

Admission to Graduate Studies section earlier in this catalog.

## Degree Requirements

To graduate with the Master of Arts in English/Arabic/English Translation and Interpreting, students must complete all the requirements of the program, which consist of 36 credits inclusive of a research thesis. Students must complete the degree requirements within five years from the time of initial enrollment in the program. A minimum cumulative GPA of 3.00 is required for graduation. Courses are offered during the weekday evenings.

## Required Courses (27 credits)

- TRA 500 Principles and Strategies of Translation
- TRA 503 Theoretical Models of Translation
- TRA 505 Interpreting and the Profession I
- TRA 509 Interpreting and the Profession II: Simultaneous Interpreting
- TRA 510 Research Methods and Academic Writing
- TRA 512 Terminology, Arabicization and the Translator
- TRA 558 Contrastive Linguistics and Translation
- TRA 630 Practicum
- TRA 699 Master's Thesis

## Practicum Waiver

The practicum requirement (TRA 630) can be waived, subject to the approval of the graduate programs director, for those students who are in full-time employment in professional organizations or recognized government organizations. To be waived out of the practicum, students must produce a letter from their employers stating the length and duration of their employment.

Students with three or more years of experience in translation and/or interpreting may be exempted from the practicum.

## Elective Courses (minimum of 9 credits)

Students must complete three courses (a minimum of nine credits) from the following, in consultation with their advisor.

- TRA 504 Discourse Semantics and Pragmatics in Translation
- TRA 556 Rhetoric for Translators

- TRA 594/694 Special Topics in Translation and Interpreting
- TRA 610 Intercultural Communication and Translation

### Master's Thesis

The thesis must be prepared under close supervision of the thesis faculty supervisor on a topic within translation/interpreting studies or an extended translation and a commentary, chosen in consultation with the faculty supervisor.

The thesis must be completed within two consecutive academic semesters. An extension may be allowed if a candidate presents acceptable mitigating circumstances.

The thesis is defended to the satisfaction of a committee composed of three faculty members. A complete guide for preparing the thesis, including the thesis proposal, thesis defense and deadlines, is given in the Master's Thesis (Guides and Documents) folder available on iLearn and accessible using the following path: iLearn-Community-Office of Research and Graduate Studies (ORGS)-Graduate Studies.

For thesis registration details, please refer to Thesis and Final Project under the Academic Policies and Regulations section of this catalog.

### Master of Arts in Teaching English to Speakers of Other Languages (MA TESOL)

Kathleen Hewett-Smith, Head

The mission of the Master of Arts in Teaching English to Speakers of Other Languages (MA TESOL) program is to provide students a balanced foundation of both practical and theoretical knowledge needed to teach English at various proficiency levels, and to prepare them for doctoral studies in areas related to language learning and teaching. By combining theory and practice, the program aims to produce informed teachers capable of using theory to enhance their teaching practice.

#### Program Goals

To fulfill this mission, the program goals are:

- to develop in students a critical approach to assessing second language learning models, teaching methodologies and materials appropriate to the UAE cultural context
- to prepare students for positions requiring high levels of proficiency in teaching English as a foreign or second language at the secondary and tertiary levels

- to equip its graduates with the required competencies to contribute to the field and prepare them to enroll in PhD programs

### Program Learning Outcomes

Upon graduation from the MA TESOL program, students should be able to:

- demonstrate an understanding of the basic models of language learning/teaching
- explain the role of culture in language learning and teaching in an ESL/EFL environment
- demonstrate critical and practical knowledge in the field of computer assisted/enhanced language learning
- apply pedagogical theories in applied linguistics to teaching practices
- apply testing and assessment concepts to real classroom situations
- develop/adapt and evaluate learner-centered curricula and materials for specific language teaching situations
- use effective classroom observation and research skills to improve teaching
- conduct original research

### Admission Requirements

In addition to fulfilling the general university requirements for graduate admission, the applicant must have a minimum score of 5 on the TWE (Test of Written English) or the EWET (Emirates Writing Test).

Applicants who meet the general university requirements for graduate admission but have not completed at least one undergraduate course in general linguistics and one undergraduate course in English grammar will be considered for conditional acceptance pending completion of Introduction to Language Study (ENG 223) and/or Advanced English Grammar (ENG 401) within their first two semesters of study.

### Degree Requirements

Students seeking an MA TESOL degree must complete a minimum of 36 credits in core courses, elective courses and a master's thesis or professional project. Students must complete the degree requirements within five years from the time of initial enrollment in the program. A minimum cumulative GPA of 3.00 is required for graduation.

Students in the MA TESOL program must choose from two options: the thesis option and the project option.

#### Thesis Option

The 36 credits needed as degree requirements for this option include:

- 21 credits of core courses
- nine credits of elective courses
- six credits of Master's Thesis

#### Project Option

The 36 credits needed as degree requirements for this option include:

- 21 credits of core courses
- 12 credits of elective courses
- three credits of Professional Project

### Required Courses (27/24 credits)

#### Core Courses (21 credits)

- ELT 510 Research Methods and Academic Writing
- ELT 511 Linguistics for ESL Teachers
- ELT 513 Language Acquisition and Development
- ELT 515 Methods and Materials Development
- ELT 517 Curriculum Design
- ELT 551 Language Testing and Evaluation
- ELT 619 Practicum in TESOL

#### Master's Thesis/Professional Project (6/3 credits)

- ELT 698 Professional Project (3 credits—project option)
- ELT 699 Master's Thesis (6 credits—thesis option)

### Elective Courses (minimum of 9/12 credits)

Students in the thesis option must complete three elective courses for a minimum of nine credits. Students in the project option must complete four elective courses for a minimum of 12 credits.

Students can select elective courses from the following list:

- ELT 501 Advanced English Grammar
- ELT 503 Contrastive Linguistics
- ELT 505 Culture and the Language Teacher
- ELT 521 Reading and Writing in ESL
- ELT 523 Bilingual Education
- ELT 525 Pragmatics for ESL Teachers
- ELT 531 Sociolinguistics
- ELT 553 Technology in the ESL Classroom
- ELT 567 Leadership and Management
- ELT 611 Classroom Research
- ELT 615 Quantitative and Qualitative Research in ELT

### Master's Thesis/Professional Project

A student must complete his/her thesis or professional project under close



supervision of a faculty supervisor on a topic related to some aspect of TESOL.

The thesis/professional project must be defended to the satisfaction of the thesis or project committee, which is composed of TESOL program faculty. One committee member may be selected from outside the TESOL program faculty upon approval of the program coordinator. A complete guide for preparing the thesis/professional project is given in the Master's Thesis (Guides and Documents)/Master's Project (Guides and Documents) folders available on iLearn and accessible using the following path: iLearn-Community-Office of Research and Graduate Studies (ORGS)-Graduate Studies.

For thesis/professional project registration details, please refer to Thesis and Final Project under the Academic Policies and Regulations section of this catalog.

## Master of Science in Mathematics (MSMTH)

Abdul Salam Jarrah, Coordinator

The Master of Science in Mathematics program will provide students with rigorous and thorough knowledge of a broad range of pure and applied areas of mathematics. It is designed to train students with different professional goals, ranging from employment or career advancement in business, industry or government, to basic training in foundations needed to obtain a research career or pursue a PhD in mathematics or mathematics-related fields.

### Program Goals

The program seeks to accomplish the following:

- provide the analytical skills necessary to formulate and solve complex mathematical problems that are of contemporary relevance in the fields of pure and applied mathematics
- develop the mathematical skills and knowledge to facilitate career advancement in education, business or industry, or to pursue more advanced study such as a PhD degree in mathematics or mathematics related-fields
- provide the mathematical skills and knowledge to describe and solve complex quantitative problems that arise in business or industry

### Program Outcomes

Upon completion of the program, graduates should be able to:

- apply advanced mathematical analysis to mathematical models

- demonstrate a comprehensive understanding of analysis, algebra, geometry and applied mathematics
- formulate and construct proofs
- clearly communicate mathematical concepts
- apply advanced mathematical techniques in their professional activities
- conduct independent research in specialized areas of mathematics
- employ mathematical methods to model and solve practical problems
- demonstrate advanced knowledge of analysis, financial mathematics, and differential equations and their applications
- formulate problems in mathematical terms arising in related areas such as engineering, finance, and the natural and physical sciences

### Admission Requirements

In addition to meeting the university's general graduate admission requirements, applicants must hold a bachelor's degree in an area of mathematical science (applied or pure mathematics, actuarial science, statistics, etc.) from an independently accredited university recognized by AUS, or a bachelor's degree from a related field with a minimum of:

- nine credits in calculus
- three credits in differential equations
- three credits in linear algebra
- three credits in abstract algebra
- three credits in advanced calculus

### Degree Requirements

The Master of Science in Mathematics degree consists of two tracks: Pure Mathematics and Applied Mathematics (industrial/financial). Students in each track must select between two options: the thesis option and the non-thesis option.

#### Thesis Option

Students in the thesis option are required to complete the following:

- 12 credits in required course work
- six credits in Master's Thesis
- a minimum of 12 credits in elective courses

#### Non-Thesis Option

Students in the non-thesis option are required to complete the following:

- 12 credits in required course work
- a minimum of 18 credits in elective courses

Students seeking an MSMTH degree must complete a minimum of 30 credits in required and elective courses, with a minimum cumulative GPA of 3.00. Students must complete the degree requirements within five years from the time of initial enrollment in the program.

### Pure Mathematics Track

#### Required Courses (18/12 credits)

In the pure mathematics track, all students must take the following four major required courses:

- MTH 510 Real Analysis I
- MTH 511 Real Analysis II
- MTH 530 Abstract Algebra I
- MTH 531 Abstract Algebra II

In addition, students in the thesis option must complete a master's thesis (MTH 599, six credits).

#### Elective Courses (12/18 credits)

Students who select to pursue the thesis option must complete four elective courses for a minimum of 12 credits. Students who select to pursue the non-thesis option must complete six elective courses for a minimum of 18 credits.

Students can select electives from the following list, in consultation with their academic advisor:

- MTH 500 Mathematical Statistics with Applications
- MTH 505 Ordinary Differential Equations
- MTH 506 Partial Differential Equations
- MTH 512 Advanced Linear Algebra
- MTH 513 Advanced Probability
- MTH 514 Combinatorics
- MTH 520 Complex Analysis
- MTH 525 Functional Analysis
- MTH 540 Algebraic Coding Theory
- MTH 560 Topology
- MTH 565 Numerical Analysis
- MTH 570 Optimal Control Theory
- MTH 594 Special Topics in Mathematics
- MTH 596 Independent Study

**Note:** With the joint permission of the directors of graduate programs from the relevant colleges, a student may replace one elective course with an elective course in a related subject, provided that the replacement elective meets the educational objectives of the program.

**Applied Mathematics Track***Required Courses (18/12 credits)*

In the applied mathematics track, all students must take the following four major required courses:

- MTH 505 Ordinary Differential Equations
- MTH 510 Real Analysis I
- MTH 511 Real Analysis II
- MTH 551 Methods of Applied Mathematics

In addition, students in the thesis option must complete a master's thesis (MTH 599, six credits).

*Elective Courses (12/18 credits)*

Students who select to pursue the thesis option must complete four elective courses for a minimum of 12 credits. Students who select to pursue the non-thesis option must complete six elective courses for a minimum of 18 credits.

Students can select electives from the following list, in consultation with their academic advisor:

- MTH 500 Mathematical Statistics with Applications
- MTH 506 Partial Differential Equations
- MTH 507 Financial Mathematics I
- MTH 508 Mathematical Biology
- MTH 512 Advanced Linear Algebra
- MTH 513 Advanced Probability
- MTH 514 Combinatorics
- MTH 516 Financial Mathematics II
- MTH 517 Numerical Methods for Derivative Pricing
- MTH 530 Abstract Algebra I
- MTH 540 Algebraic Coding Theory
- MTH 555 Loss and Risk Models
- MTH 565 Numerical Analysis
- MTH 570 Optimal Control Theory
- MTH 594 Special Topics in Mathematics
- MTH 596 Independent Study

**Note:** *With the joint permission of the directors of graduate programs from the relevant colleges, a student may replace one elective course with an elective course in a related subject, provided that the replacement elective meets the educational objectives of the program.*

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**Master's Thesis**

Students in the thesis option must complete a research thesis pertinent to the track of their choice and representing results of independent

research performed under the close supervision of a faculty advisor.

A student must select a thesis advisor no later than the first day of the third semester or after completing 12 credit hours, whatever comes first. The thesis advisor will be responsible for supervising all aspects of the student's graduate work such as course selection, thesis research, thesis committee selection, thesis writing and thesis defense training. The student should identify a faculty member of the department whose expertise most closely relates to the student's thesis topic of interest. The student must then ensure that the faculty member will be willing to work with him/her on the proposed research topic. Thesis advisor selection should be confirmed with the Graduate Program Coordinator and with the approval of the Head of Department.

A complete guide for preparing the thesis is given in the Master's Thesis (Guides and Documents) folder available on iLearn and accessible using the following path: iLearn-Community-Office of Research and Graduate Studies (ORGS)-Graduate Studies.

For thesis registration details, please refer to Thesis and Final Project under the Academic Policies and Regulations section of this catalog.

# College of Engineering

## Dean

Leland T. Blank

## Associate Dean

Hany El Kadi

## Associate Dean and Director of Graduate Programs

Mohamed El-Tarhuni

## Master of Science in Chemical Engineering (MSChE)

Naif Darwish, Head

The MSChE program will prepare professionals in an environment that combines chemical engineering practice and technical research to contribute to the growing body of chemical engineering knowledge, research and development both regionally and internationally.

### Mission Statement

The mission of the Master of Science in Chemical Engineering (MSChE) program at AUS is to prepare professionals for advanced careers and/or doctoral studies related to chemical engineering. The program is continuously striving to create a stimulating academic environment that promotes excellence in teaching and research to assist the students in becoming competent, innovative, and responsible professionals.

### Program Educational Objectives

Graduates of the MSChE program will be prepared to:

- be successful professionals in a specialized area of chemical engineering
- maintain a desire for research, innovation and lifelong learning
- uphold the responsibilities of the engineering profession

### Student Outcomes

Upon graduation, an AUS MSChE graduate should demonstrate the ability to:

- perform research emphasizing creativity, independent learning and scientific methods in a chosen area of chemical engineering
- apply advanced mathematics and engineering knowledge in identifying, formulating and solving engineering problems

- select and use techniques, skills and modern tools necessary for research or professional practice
- communicate effectively
- recognize the need for, and engage in, lifelong learning
- attend to professional and ethical responsibilities

### Admission Requirements

In addition to meeting the university's general graduate admission requirements, applicants must meet specific requirements of the MSChE program.

Applicants must hold a Bachelor of Science in Chemical Engineering from an independently accredited university recognized by AUS. Degreed individuals in other engineering fields or a quantitative science field that is closely related to the sought program field may be considered on a case-by-case basis.

### Degree Requirements

Students seeking an MSChE degree must complete a minimum of 30 credits consisting of college/program core courses, program elective courses, a seminar, and a master's thesis or a professional project, with a minimum cumulative grade point average of 3.00.

Students in the MSChE program must choose from two options: the thesis option or the project option.

To ensure that a student in either option will receive good exposure to the research environment, students are required to complete either a thesis or a professional project that includes research aspects.

### Thesis Option

The 30 credits needed as degree requirements for this option include the following:

- six credits of required college core courses
- nine credits of required program core courses
- a minimum of six credits in elective courses
- a zero-credit seminar
- nine credits in Master's Thesis

### Project Option

The 30 credits needed as degree requirements for this option include the following:

- six credits of required college core courses

- nine credits of required program core courses
- a minimum of 12 credits in elective courses
- a zero-credit seminar
- three credits in Professional Project

### Required Courses (24/18 credits)

#### College Core Courses (6 credits)

Students must complete the following courses:

- NGN 500 Advanced Engineering Mathematics
- NGN 505 Random Variables and Stochastic Processes or NGN 509 Advanced Computational Methods

#### Program Core Courses (9 credits)

Students must complete the following courses:

- CHE 510 Transport Phenomena
- CHE 511 Advanced Chemical Engineering Thermodynamics
- CHE 512 Advanced Kinetics and Reactor Design

In addition, all students must complete a seminar course (CHE 695).

#### Master's Thesis/Professional Project (9/3 credits)

- CHE 698 Professional Project (3 credits—project option)
- CHE 699 Master's Thesis (9 credits—thesis option)

### Elective Courses (minimum of 6/12 credits)

Students in the thesis option must complete a minimum of six credits in elective courses. Students in the project option must complete a minimum of 12 credits in elective courses. Students can select elective courses from the following list:

- CHE 594 Special Topics in Chemical Engineering
- CHE 610 Catalysis and Reaction Engineering
- CHE 611 Biomedical Engineering and Biotechnology
- CHE 612 Advanced Process Analysis and Control
- CHE 613 Advanced Materials Science
- CHE 614 Environmental Engineering
- CHE 694 Special Topics in Chemical Engineering
- CHE 696 Independent Study in Chemical Engineering

Students in the thesis option may elect to take one elective course outside this list, with the approval of their advisor.

Students in the project option may elect to take up to two elective courses outside this list, with the approval of their advisor.

### Master's Thesis/Professional Project

A student must complete his/her thesis/professional project under the direct supervision and guidance of a principal advisor. This principal advisor serves as the chair of the student's examining committee. The committee also includes two additional faculty members. For the thesis option, one of the additional faculty members must be selected from outside the program. The committee could also include one co-advisor or more.

A complete guide for preparing the thesis/professional project is given in the Master's Thesis (Guides and Documents)/Master's Project (Guides and Documents) folders available on iLearn and accessible using the following path: iLearn-Community-Office of Research and Graduate Studies (ORGS)-Graduate Studies.

For registration details, please refer to Thesis and Final Project Registration under the Academic Policies and Regulations section of this catalog.

### **Master of Science in Civil Engineering (MSCE)**

Osman Akan, Head

The MSCE program will prepare professionals in an environment that combines civil engineering practice and technical research to contribute to the growing body of civil engineering knowledge, research and development efforts both regionally and internationally.

#### **Mission Statement**

The mission of the Master of Science in Civil Engineering (MSCE) program at AUS is to prepare professionals for advanced careers and/or doctoral studies related to civil engineering. The program strives to create a conducive academic environment that promotes excellence in teaching and research to assist the students in becoming competent, innovative and responsible professionals with effective communication skills.

#### **Program Educational Objectives**

Graduates of the MSCE program will be prepared to:

- be successful professionals in a specialized area of civil engineering
- maintain a desire for research, innovation and lifelong learning

- uphold the responsibilities of the engineering profession

#### **Student Outcomes**

Upon graduation, an AUS MSCE graduate should demonstrate the ability to:

- perform research emphasizing creativity, independent learning and scientific methods in a chosen area of civil engineering
- apply advanced mathematics and engineering knowledge in identifying, formulating and solving engineering problems
- select and use techniques, skills and modern tools necessary for research or professional practice
- communicate effectively
- recognize the need for, and engage in, lifelong learning
- attend to professional and ethical responsibilities

#### Admission Requirements

In addition to meeting the university's general graduate admission requirements, applicants must meet specific requirements of the MSCE program.

Applicants must hold a Bachelor of Science in Civil Engineering from an independently accredited university recognized by AUS. Degreed individuals in other engineering fields or a quantitative science field that is closely related to the sought program field may be considered on a case-by-case basis.

#### Degree Requirements

Students seeking an MSCE degree must complete a minimum of 30 credits consisting of college/program core courses, program elective courses, a seminar, and a master's thesis or a professional project with a minimum cumulative grade point average of 3.00.

Students in the MSCE program must choose from two options: the thesis option or the project option.

To ensure that a student in either option will receive good exposure to the research environment, students are required to complete either a thesis or a professional project that includes research aspects. In addition, many of the civil engineering graduate courses have research components that reinforce the research element in the program.

#### **Thesis Option**

The 30 credits needed as degree requirements for this option include the following:

- three credits of required college core courses
- six to 12 credits of 500-level elective courses and six to 12 credits of 600-level elective courses, for a minimum total of 18 credits
- a zero-credit seminar
- nine credits in Master's Thesis

#### **Project Option**

The 30 credits needed as degree requirements for this option include the following:

- three credits of required college core courses
- nine to 15 credits of 500-level elective courses and nine to 15 credits of 600-level elective courses, for a minimum total of 24 credits
- a zero-credit seminar
- three credits in Professional Project

#### **Required Courses (12/6 credits)**

##### *College Core Courses (3 credits)*

Students must complete one of the following courses:

- NGN 500 Advanced Engineering Mathematics
- NGN 505 Random Variables and Stochastic Processes
- NGN 509 Advanced Computational Methods

In addition, all students must complete a seminar course (CVE 695).

##### *Master's Thesis/Professional Project (9/3 credits)*

- CVE 698 Professional Project (3 credits—project option)
- CVE 699 Master's Thesis (9 credits—thesis option)

#### **Elective Courses (minimum of 18/24 credits)**

Students in the thesis option must complete six to 12 credits from 500-level courses and six to 12 credits from 600-level courses, for a minimum total of 18 credits. Students in the project option must complete nine to 15 credits from 500-level courses and nine to 15 credits from 600-level courses, for a minimum total of 24 credits.

Students can select elective courses from the following list:

- CVE 520 Advanced Construction Materials and Methods
- CVE 521 Finite Element Method
- CVE 522 Advanced Water Resources Engineering
- CVE 523 Advanced Transportation Systems
- CVE 551 Wastewater Treatment

- CVE 572 Satellite Remote Sensing
- CVE 594 Special Topics in Civil Engineering
- CVE 620 Advanced Construction Planning and Controls
- CVE 621 Analysis and Design of Tall Buildings
- CVE 622 Physical and Chemical Processes in Environmental Engineering
- CVE 623 Advanced Transportation Planning Techniques
- CVE 624 Advanced Geotechnical Engineering
- CVE 625 Highway Bridge Design
- CVE 651 Wastewater Treatment Process Control
- CVE 694 Special Topics in Civil Engineering
- CVE 696 Independent Study in Civil Engineering
- ESM 570 Project Management

Students in both options may elect to take one course outside the list, with the approval of their advisor.

#### **Master's Thesis/Professional Project**

A student must complete his/her thesis or professional project under the direct supervision and guidance of a principal advisor. This principal advisor serves as the chair of the student's examining committee. The committee also includes two additional faculty members. For the thesis option, one of the additional faculty members must be selected from outside the program. The committee could also include one co-advisor or more.

A complete guide for preparing the thesis/professional project is given in the Master's Thesis (Guides and Documents)/Master's Project (Guides and Documents) folders available on iLearn and accessible using the following path: iLearn-Community-Office of Research and Graduate Studies (ORGS)-Graduate Studies.

For registration details, please refer to Thesis and Final Project Registration under the Academic Policies and Regulations section of this catalog.

### **Master of Science in Computer Engineering (MSCoE)**

Assim Sagahyroon, Head

The MSCoE program will prepare professionals in an environment that combines computer engineering practice and technical research to contribute to the growing body of computer engineering knowledge,

research and development both regionally and internationally.

#### **Mission Statement**

The mission of the Master of Science in Computer Engineering (MSCoE) program at AUS is to prepare professionals for advanced careers and/or doctoral studies related to computer engineering. The program strives to create a stimulating academic environment that promotes excellence in teaching and research to assist the students in becoming competent, innovative and responsible professionals with effective communication skills.

#### **Program Educational Objectives**

Graduates of the MSCoE program will be prepared to:

- be successful professionals in a specialized area of computer engineering
- maintain a desire for research, innovation and lifelong learning
- uphold the responsibilities of the engineering profession

#### **Student Outcomes**

Upon graduation, an AUS MSCoE graduate should demonstrate the ability to:

- perform research emphasizing creativity, independent learning and scientific methods in a chosen area of computer engineering
- apply advanced mathematics and engineering knowledge in identifying, formulating and solving engineering problems
- select and use techniques, skills and modern tools necessary for research or professional practice
- communicate effectively
- recognize the need for, and engage in, lifelong learning
- attend to professional and ethical responsibilities

#### **Admission Requirements**

In addition to meeting the university's general graduate admission requirements, applicants must meet specific requirements of the MSCoE program.

Applicants must hold a Bachelor of Science in Computer Engineering from an independently accredited university recognized by AUS. Degreed individuals in engineering fields or a quantitative science field that is closely related to the sought program field may be considered on a case-by-case basis.

#### **Degree Requirements**

Students seeking an MSCoE degree must complete a minimum of 30 credits consisting of college/program core courses, program elective courses, a seminar, and a master's thesis or a professional project with a minimum cumulative grade point average of 3.00.

Students in the MSCoE program must choose from two options: the thesis option or the project option.

To ensure that a student in either option will receive good exposure to the research environment, all students are required to complete either a thesis or a professional project that includes research aspects. In addition, many of the computer engineering courses have research components that reinforce the research element in the program.

#### **Thesis Option**

The 30 credits needed as degree requirements for this option include the following:

- three credits of required college core courses
- six to 12 credits of 500-level elective courses and six to 12 credits of 600-level elective courses, for a minimum total of 18 credits
- a zero-credit seminar
- nine credits in Master's Thesis

#### **Project Option**

The 30 credits needed as degree requirements for this option include the following:

- three credits of required college core courses
- nine to 15 credits of 500-level elective courses and nine to 15 credits of 600-level elective courses, for a minimum total of 24 credits
- a zero-credit seminar
- three credits in Professional Project

#### **Required Courses (12/6 credits)**

##### *College Core Courses (3 credits)*

Students must complete one of the following courses:

- NGN 500 Advanced Engineering Mathematics
- NGN 505 Random Variables and Stochastic Processes
- NGN 509 Advanced Computational Methods

In addition, all students must complete a seminar course (COE 695).

##### *Master's Thesis/Professional Project (9/3 credits)*

- COE 698 Professional Project (3 credits—project option)

- COE 699 Master's Thesis (9 credits—thesis option)

### **Elective Courses (minimum of 18/24 credits)**

Students in the thesis option must complete six to 12 credits from 500-level elective courses and six to 12 credits from 600-level elective courses for a minimum total of 18 credits.

Students in the project option must complete nine to 15 credits of 500-level elective courses and nine to 15 credits of 600-level elective courses, for a minimum total of 24 credits.

Students can select elective courses from the following list:

- COE 530 Advanced Computer Networks
- COE 531 Advanced Software Design for Engineers
- COE 532 Advanced Embedded Systems and Industrial Automation
- COE 533 Advanced Computer Architecture
- COE 594 Special Topics in Computer Engineering
- COE 630 Wireless Networks
- COE 632 Advanced Database Systems
- COE 633 Advanced Internet Computing
- COE 634 Computer-Aided Design and Optimization of Digital Systems
- COE 635 Optical Networks
- COE 636 Advanced Multicore Computing
- COE 694 Special Topics in Computer Engineering
- COE 696 Independent Study in Computer Engineering

Students in both options may elect to take up to two elective courses outside the program with the approval of their advisor.

### **Master's Thesis /Professional Project**

A student must complete his/her thesis/professional project under the direct supervision and guidance of a principal advisor. This principal advisor serves as the chair of the student's examining committee. The committee also includes two additional faculty members. For the thesis option, one of the additional faculty members must be selected from outside the program. The committee could also include one co-advisor or more.

A complete guide for preparing the thesis/professional project is given in the Master's Thesis (Guides and Documents)/Master's Project (Guides and Documents) folders available on

iLearn and accessible using the following path: iLearn-Community-Office of Research and Graduate Studies (ORGS)-Graduate Studies.

For registration details, please refer to Thesis and Final Project Registration under the Academic Policies and Regulations section of this catalog.

### **Master of Science in Electrical Engineering (MSEE)**

Nasser Qaddoumi, Interim Head

The MSEE program will prepare professionals in an environment that combines electrical engineering practice and technical research to contribute to the growing body of electrical engineering knowledge, research and development both regionally and internationally.

#### **Mission Statement**

The mission of the Master of Science in Electrical Engineering (MSEE) program at AUS is to prepare professionals for advanced careers and/or doctoral studies related to electrical engineering. The program is continuously striving to create a stimulating academic environment that promotes excellence in teaching and research to assist the students in becoming competent, innovative and responsible professionals.

#### **Program Educational Objectives**

Graduates of the MSEE program will be prepared to:

- be successful professionals in a specialized area of electrical engineering
- maintain a desire for research, innovation and lifelong learning
- uphold the responsibilities of the engineering profession

#### **Student Outcomes**

Upon graduation, an AUS MSEE graduate should demonstrate the ability to:

- perform research emphasizing creativity, independent learning and scientific methods in a chosen area of electrical engineering
- apply advanced mathematics and engineering knowledge in identifying, formulating and solving engineering problems
- select and use techniques, skills and modern tools necessary for research or professional practice
- communicate effectively
- recognize the need for, and engage in, lifelong learning

- attend to professional and ethical responsibilities

### **Admission Requirements**

In addition to meeting the university's general graduate admission requirements, applicants must meet specific requirements of the MSEE program.

Applicants must hold a Bachelor of Science in Electrical Engineering from an independently accredited university recognized by AUS. Degreed individuals in engineering fields or a quantitative science field that is closely related to the sought program field may be considered on a case-by-case basis.

### **Degree Requirements**

Students in the MSEE program must choose from three options: the thesis option, the project option or the course option.

Students seeking an MSEE degree must complete a minimum of 30 credits consisting of college/program core courses, program elective courses, a seminar, and a thesis or a professional project (for students in the thesis and project options only) with a minimum cumulative grade point average of 3.00.

To ensure that students in the three options will receive good exposure to the research environment, all students will be required to complete research-oriented class projects within many of the electrical engineering graduate courses.

#### **Thesis Option**

The 30 credits needed as degree requirements for this option include the following:

- six credits of required college core courses
- six to nine credits of 500-level elective courses and six to nine credits of 600-level elective courses, for a minimum total of 15 credits
- a zero-credit seminar
- nine credits in Master's Thesis

#### **Project Option**

The 30 credits needed as degree requirements for this option include the following:

- six credits of required college core courses
- nine to 12 credits of 500-level elective courses and nine to 12 credits of 600-level elective courses, for a minimum total of 21 credits
- a zero-credit seminar
- three credits in Professional Project

### Course Option

The 30 credits needed as degree requirements for this option include the following:

- six credits of required college core courses
- nine to 15 credits of 500-level elective courses and nine to 15 credits of 600-level elective courses, for a minimum total of 24 credits
- a zero-credit seminar

### Required Courses (15/9 credits)

#### College Core Courses (6 credits)

Students must complete two of the following courses:

- NGN 500 Advanced Engineering Mathematics
- NGN 505 Random Variables and Stochastic Processes
- NGN 509 Advanced Computational Methods

In addition, all students must complete a seminar course (ELE 695).

#### Master's Thesis/Professional Project (9/3 credits)

This requirement applies to students in the thesis and project options:

- ELE 698 Professional Project (3 credits—project option)
- ELE 699 Master's Thesis (9 credits—thesis option)

### Elective Courses (minimum of 15/24 credits)

Students in the thesis option must complete six to nine credits from 500-level courses and six to nine credits from 600-level courses, for a minimum total of 15 credits. Students in the project option must complete nine to 12 credits from 500-level courses and nine to 12 credits from 600-level courses, for a minimum total of 21 credits. Students in the course option must complete nine to 15 credits from 500-level courses and nine to 15 credits from 600-level courses, for a minimum total of 24 credits.

Students can select elective courses from the following list:

- ELE 540 Principles of Digital Communications
- ELE 542 Applied Electromagnetics
- ELE 543 Analog Microelectronics
- ELE 544 Advanced Signal Processing
- ELE 545 Power System Operation and Control
- ELE 546 Advanced Power Electronics
- ELE 594 Special Topics in Electrical Engineering

- ELE 640 Bioelectric Phenomena
- ELE 641 Advanced Microwave Engineering
- ELE 642 Digital and Wireless Communications
- ELE 643 Image and Video Processing
- ELE 644 Dynamics and Control of Electrical Drives
- ELE 645 High Voltage Engineering
- ELE 646 Radio Frequency Integrated Circuits
- ELE 647 Digital Protection of Power Systems
- ELE 648 Pattern Classification
- ELE 694 Special Topics in Electrical Engineering
- ELE 696 Independent Study in Electrical Engineering

Students in the thesis and project options may elect to take one course outside the program with the approval of their advisor. Students in the course option may elect to take up to two courses outside the program with the approval of their advisor.

### Master's Thesis/Professional Project

A student must complete his/her thesis/professional project under the direct supervision and guidance of a principal advisor. This principal advisor serves as the chair of the student's examining committee. The committee also includes two additional faculty members. For the thesis option, one of the additional faculty members must be selected from outside the program. The committee could also include one co-advisor or more.

A complete guide for preparing the thesis/professional project is given in the Master's Thesis (Guides and Documents)/Master's Project (Guides and Documents) folders available on iLearn and accessible using the following path: iLearn-Community-Office of Research and Graduate Studies (ORGS)-Graduate Studies.

For registration details, please refer to Thesis and Final Project Registration under the Academic Policies and Regulations section of this catalog.

### Master of Science in Engineering Systems Management (MSESM)

Moncer Hariga, Head

The mission of the Master of Science in Engineering Systems Management (MSESM) program is to considerably increase the opportunities for practicing engineers to be successful in their efforts to build effective teams, lead and manage major engineering projects, and expand economic

development for the private and public sectors of the UAE and the Gulf region countries.

The curriculum provides core courses followed by concentration courses in the theme areas of construction management (CM), engineering management (EM) and information technology management (ITM).

With quality standards similar to those established in comparable North American institutions, the program offers a multidisciplinary curriculum designed to integrate management skills with technical knowledge from different engineering disciplines for the purpose of accomplishing work activities and entire projects more economically and productively. The program provides students from engineering and related disciplines with the knowledge and skills needed to plan, design, analyze and improve integrated systems of people, material, technology and information. It also aims to contribute to the related world body of knowledge and advance research and development efforts in the region.

### Program Educational Objectives

Graduates of the MSESM program will be prepared to:

- utilize engineering system management tools and techniques to design and implement economically and technically sound solutions to real-world problems
- lead the change management process to meet organizational goals and objectives
- communicate effectively in a multidisciplinary team work environment
- act professionally and ethically in the practice of engineering systems management
- engage in lifelong learning and carry out independent research in ESM fields

### Student Outcomes

Upon graduation, an AUS MSESM graduate should demonstrate the ability to:

- apply the techniques, tools and skills of engineering systems management to address real-world problems
- conduct economic and financial analysis of projects and engineering operations
- function as effective members of multidisciplinary teams and communicate effectively in both written and verbal forms

- recognize professional and ethical responsibilities and act accordingly within a global and social context
- engage in theoretical and applied research projects

### Admission Requirements

In addition to meeting the university's general graduate admission requirements, applicants must meet specific requirements of the MSES program.

Applicants must have a Bachelor of Science degree in engineering from an independently accredited university recognized by AUS. Degreed individuals in a quantitative science field that is closely related to engineering may be considered on a case-by-case basis. Degreed individuals in computer science or information technology may be considered only for the information technology theme. Preference will be given to applicants with relevant work experience.

### Degree Requirements

Students in the MSES program must choose from two options: the thesis/professional project option, or the course option.

Students seeking an MSES degree must complete a minimum of 36 credits consisting of core courses, theme courses, and a thesis or a professional project (for students in the thesis/professional project option only) with a minimum cumulative grade point average of 3.00.

#### Thesis/Professional Project Option

The 36 credits needed as degree requirements for this option include:

- 15 credits in core courses
- 15 credits in theme required and elective courses
- six credits in Master's Thesis or Professional Project

#### Course Option

The 36 credits needed as degree requirements for this option include:

- 18 credits in core courses
- 18 credits in theme required and elective courses

#### Required Courses (18/24 credits)

##### Core Courses (15/18 credits)

Students in the thesis/professional project option must complete 15 credits in core courses; students in the course option must complete 18 credits.

- ESM 515 Fundamentals of Statistics and Engineering Economy
- ESM 520 Management for Engineers

- ESM 532 Introduction to Applied Operations Research
- ESM 555 Information Technology Management
- ESM 575 Advanced Engineering Economy
- ESM 600 Research Methodology (course option only)

##### Theme Courses (3/6 credits)

Students in the thesis/professional project option must complete three credits in theme required courses; students in the course option must complete six credits.

#### Construction Management Theme

- ESM 570 Project Management
- ESM 686 Capstone Course in Construction Management (course option only)

#### Engineering Management Theme

- ESM 570 Project Management
- ESM 685 Capstone Course in Engineering Management (course option only)

#### IT Management Theme

- ESM 580 IT Project Management
- ESM 687 Capstone Course in Information Technology Management (course option only)

##### Master's Thesis/Professional Project (6 credits)

This requirement applies to students in the thesis and professional project options:

- ESM 698 Professional Project (6 credits—professional project option)
- ESM 699 Master's Thesis (6 credits—thesis option)

#### Elective Courses (minimum of 12 credits)

Students must complete a minimum of 12 credits in courses taken from the list of elective courses of their declared theme. A maximum of two courses can be completed outside the student's designated theme elective courses. Elective courses from outside the student's theme must be approved by the program director.

#### Construction Management Theme

- ESM 600 Research Methodology (thesis/professional project option only)
- ESM 642 Business Process Management
- ESM 650 Construction Management
- ESM 652 Construction Planning and Scheduling
- ESM 660 Construction Contracts Law

- ESM 668 Construction Safety Management
- ESM 694 Special Topics in ESM

#### Engineering Management Theme

- ESM 600 Research Methodology (thesis/professional project option only)
- ESM 630 Quality Engineering and Management
- ESM 634 Advanced Modeling and Simulation
- ESM 636 Human Resources Management
- ESM 638 Decision Analysis
- ESM 640 Supply Chain Management
- ESM 642 Business Process Management
- ESM 644 Financial Management for Engineers
- ESM 694 Special Topics in ESM

#### IT Management Theme

- ESM 600 Research Methodology (thesis/professional project option only)
- ESM 612 Advanced Information Systems Management
- ESM 614 Communication and Network Management
- ESM 620 Security Management
- ESM 624 Knowledge Management
- ESM 642 Business Process Management
- ESM 694 Special Topics in ESM

#### Master's Thesis/Professional Project

To be eligible for master's thesis/professional project registration, a student must have completed a minimum of 12 credits of course work and must be approved for thesis/professional project registration by the ESM program director. Normally, minimum GPAs of 3.50 and 3.25 after 12 credits of course work are required to register in thesis and professional project, respectively.

A student must complete his/her thesis or professional project under the direct supervision and guidance of a principal advisor. This principal advisor serves as the chair of the student's examining committee. The committee also includes two additional faculty members. For the thesis option, one of the additional faculty members must be selected from outside the program. The committee could also include one co-advisor or more.

A complete guide for preparing the thesis/professional project is given in the Master's Thesis (Guides and Documents)/Master's Project (Guides and Documents) folders available on



iLearn and accessible using the following path: iLearn-Community-Office of Research and Graduate Studies (ORGS)-Graduate Studies.

For registration details, please refer to Thesis and Final Project under the Academic Policies and Regulations section of this catalog.

## Master of Science in Mechanical Engineering (MSME)

Essam M. Wahba, Interim Head

The MSME program will prepare mechanical engineering and associated professionals in an environment that combines mechanical engineering practice and technical research to contribute to the growing body of mechanical engineering knowledge, research and development both regionally and internationally.

### Mission Statement

The mission of the Master of Science in Mechanical Engineering (MSME) program at AUS is to prepare professionals for advanced careers and/or doctoral studies related to mechanical engineering. The program is continuously striving to create a stimulating proactive learning environment that promotes excellence in teaching and research to assist the students in becoming competent, innovative, and responsible professionals.

### Program Educational Objectives

Graduates of the MSME program will be prepared to:

- be successful professionals in a specialized area of mechanical engineering
- maintain a desire for research, innovation and lifelong learning
- uphold the responsibilities of the engineering profession

### Student Outcomes

Upon graduation, an AUS MSME graduate should demonstrate the ability to:

- perform research emphasizing creativity, independent learning and scientific methods in a chosen area of mechanical engineering
- apply advanced mathematics and engineering knowledge in identifying, formulating and solving engineering problems
- select and use techniques, skills and modern tools necessary for research or professional practice
- communicate effectively

- recognize the need for, and engage in, lifelong learning
- attend to professional and ethical responsibilities

### Admission Requirements

In addition to meeting the university's general graduate admission requirements, applicants must meet specific requirements of the MSME program.

Applicants must hold a Bachelor of Science in Mechanical Engineering from an independently accredited university recognized by AUS.

Degreed individuals in engineering fields or a quantitative science field that is closely related to the sought program field may be considered on a case-by-case basis.

### Degree Requirements

Students seeking an MSME degree must complete a minimum of 30 credits consisting of college core courses, program elective courses, a seminar, and a thesis or a professional project with a minimum cumulative grade point average of 3.00.

Students in the MSME program must choose from two options: the thesis option or the project option.

To ensure that a student in either option will receive good exposure to the research environment, all students are required to complete either a thesis or a professional project that includes research aspects. In addition, all students will be required to complete research-oriented class projects within many of the mechanical engineering graduate courses.

#### Thesis Option

The 30 credits needed as degree requirements for this option include the following:

- six credits of required college core courses
- six to nine credits of 500-level elective courses and six to nine credits of 600-level elective courses, for a minimum total of 15 credits
- a zero-credit seminar
- nine credits in Master's Thesis

#### Project Option

The 30 credits needed as degree requirements for this option include the following:

- six credits of required college core courses
- nine to 12 credits of 500-level elective courses and nine to 12 credits of 600-

level elective courses, for a minimum total of 21 credits

- a zero-credit seminar
- three credits in Professional Project

### Required Courses (15/9 credits)

#### College Core Courses (6 credits)

Students must complete two of the following courses:

- NGN 500 Advanced Engineering Mathematics
- NGN 505 Random Variables and Stochastic Processes
- NGN 509 Advanced Computational Methods

In addition, all students must complete a seminar course (MCE 695).

#### Master's Thesis/Professional Project (9/3 credits)

- MCE 698 Professional Project (3 credits—project option)
- MCE 699 Master's Thesis (9 credits—thesis option)

### Elective Courses (minimum of 15/21 credits)

Students in the thesis option must complete six to nine credits from 500-level courses and six to nine credits from 600-level courses, for a minimum total of 15 credits. Students in the project option must complete nine to 12 credits from 500-level courses and nine to 12 credits from 600-level courses, for a minimum total of 21 credits.

Students can select elective courses from the following list:

- MCE 550 Mechanical Systems Design
- MCE 552 Modeling and Simulation of Mechanical Systems
- MCE 553 Advanced Thermodynamics
- MCE 554 Advanced Fluid Dynamics
- MCE 594 Special Topics in Mechanical Engineering
- MCE 650 Advanced Machine Dynamics
- MCE 651 Advanced Engineering Materials
- MCE 652 Advanced Topics in Manufacturing
- MCE 653 HVAC Systems Design
- MCE 655 Advanced Measurements and Design of Experiments
- MCE 694 Special Topics in Mechanical Engineering
- MCE 696 Independent Study in Mechanical Engineering

Students in both options may elect to take one course outside the program with the approval of their advisor.

## Master's Thesis/Professional Project

A student must complete his/her thesis/professional project under the direct supervision and guidance of a principal advisor. This principal advisor serves as the chair of the student's examining committee. The committee also includes two additional faculty members. For the thesis option, one of the additional faculty members must be selected from outside the program. The committee could also include one co-advisor or more.

A complete guide for preparing the thesis/professional project is given in the Master's Thesis (Guides and Documents)/Master's Project (Guides and Documents) folders available on iLearn and accessible using the following path: iLearn-Community-Office of Research and Graduate Studies (ORGS)-Graduate Studies.

For registration details, please refer to Thesis and Final Project Registration under Academic Policies and Regulations section of this catalog.

## Master of Science in Mechatronics Engineering (MSMTR)

Mamoun Abdel-Hafez, Director

The Master of Science in Mechatronics Engineering (MSMTR) program is committed to being an international, multidisciplinary center of excellence in synergistic applications of the latest techniques in embedded systems, precision mechanical engineering, control theory, computer science and electronics through education, research and outreach. The technological gap between developing and industrialized nations continues to widen at an alarming rate, largely due to the lack of skilled engineers capable of integrating new technologies into existing systems and networks. The mandate of the mechatronics engineering program is to improve this situation by equipping engineers with the design, analysis and synthesis abilities to plan, implement and manage the latest technologies. The curriculum of the mechatronics program meets the region's needs—both present and future—through the education of engineers and scientists.

Professional jobs considered to be in the mechatronics engineering field are grounded in the multidisciplinary aspects of electrical, mechanical, control, computer and software engineering. The unique skills of mechatronics graduates are becoming increasingly valuable to employers in a variety of areas, including modern industrial installations and systems, computer integrated manufacturing systems, maintenance diagnosis and

troubleshooting, defense systems, vehicle design and manufacturing, robotics and many more.

The MSMTR graduate program provides students with state-of-the-art knowledge in their areas of specialization with practical strategies for adapting that knowledge to serve the specific needs of the region. Multidisciplinary engineers are needed now more than ever to meet the demand for a flexible engineering workforce to deal with highly integrated engineering systems.

### Mission Statement

The Master of Science in Mechatronics Engineering at AUS is an interdisciplinary program that synergistically integrates advances in science and technology to prepare students for advanced research and applied systems engineering practices. The program hosts a research center equipped with world-class resources enabling hands-on teaching and advanced research, promoting entrepreneurial initiatives to assist students in becoming competent, innovative and responsible professionals.

### Program Educational Objectives

Graduates of the MSMTR program will be prepared to:

- apply the latest techniques in precision mechanical engineering, control theory, computer engineering and science, and electronics to design more functional, adaptable and cost-effective products
- provide employers with interdisciplinary skills necessary to utilize cutting-edge technology tools in the design, development and implementation of modern engineering systems
- understand and develop technologies such as information technology, embedded systems, modeling and simulation, and precision engineering systems in the design and development of smart products
- apply mechatronics principles in the broad context of engineering system design
- address open-ended problems and maintain an attitude of self-learning

### Student Outcomes

Upon graduation, an AUS MSMTR graduate should demonstrate the ability to:

- apply advanced engineering tools necessary to identify, model and analyze mechatronics engineering problems

- formulate and propose alternative solutions that satisfy specific performance requirements of a mechatronics system
- design and implement a mechatronics component, process or system and assess its performance
- function effectively in multidisciplinary teams in a leadership role or as an active member
- act professionally and ethically
- recognize contemporary issues and their influence on technology advancement in a global and societal context
- engage in lifelong learning in engineering and related professional areas
- conduct research and development activities in mechatronics and related areas
- communicate effectively through technical presentations and documentations

### Admission Requirements

In addition to meeting the university's general graduate admission requirements, applicants must meet the specific requirements of the mechatronics engineering program.

Applicants must hold a bachelor of science degree in engineering from an accredited institution. Degreed individuals in fields closely related to engineering or a quantitative science may be considered on a case-by-case basis.

### Degree Requirements

The formal program of study of the MSMTR program consists of a minimum of 30 credits with two options: the thesis option and the course option.

Students must declare the option of their choice by submitting a formal study plan upon completion of 12 credits of approved MTR graduate courses.

A minimum cumulative grade point average of 3.00 is required for graduation.

### Thesis Option

Students in the thesis option must complete a minimum of 30 credits, as follows:

- 15 credits in core courses
- a minimum of six credits in elective courses
- nine credits in Master's Thesis

**Course Option**

Students in the course option must complete a minimum of 30 credits, as follows:

- 15 credits in core courses
- a minimum of 15 credits in elective courses

**Prerequisite Discipline-Bridging Course**

Students admitted to the MSMTR program, with the exception of students with a Bachelor of Science in Mechatronics Engineering, are required to complete the prerequisite discipline-bridging course MTR 501 Introduction to Mechatronics.

The prerequisite discipline-bridging course does not generate credits toward the completion of the degree.

The prerequisite-discipline course could be waived by the Mechatronics Engineering Admissions Committee, depending on the student's background.

*Waiver Policy*

The prerequisite discipline-bridging course may be waived if the student has completed comparable course work at the undergraduate level. Students may be required to submit course documentation. A waiver is only granted after an official, sealed transcript is received by the AUS Office of Enrollment Management/Graduate Admissions.

The waiver must be established at the time of admission.

The following rules apply:

- Students may waive the prerequisite discipline-bridging course if similar undergraduate courses have been taken at an accredited university.
- Students with professional experience that indicates mastery of the discipline-bridging course content may be granted a waiver.

**Core Courses (15 credits)**

Students must complete the following courses:

- MTR 520 Embedded Systems for Mechatronics
- MTR 530 Modeling and Simulation of Dynamic Systems
- MTR 540 Advanced Control Systems
- MTR 690 Mechatronics Design
- MTR 695 Mechatronics Seminar
- NGN 500 Advanced Engineering Mathematics

**Elective Courses (minimum of 6/15 credits)**

Students in the thesis option must complete a minimum of six credits from the following list of courses; students in the course option must complete a minimum of 15 credits:

- MTR 605 Digital Signal Processing
- MTR 610 Automated Manufacturing Systems
- MTR 615 Artificial Intelligent Systems
- MTR 630 Real-Time Robotics Systems
- MTR 640 Nonlinear and Intelligent Control Systems
- MTR 644 Electric Drives for Mechatronics Systems
- MTR 645 Image Processing and Computer Vision
- MTR 650 Applied Linear Estimation
- MTR 694 Special Topics in Mechatronics Engineering
- MTR 696 Independent Study in Mechatronics Engineering

Students in both the thesis option and the course option may elect to take one elective course outside the program, with the approval of their advisor and the program director.

**Master's Thesis**

Students in the thesis option must complete a program of research culminating in a thesis, for at least nine credits, that contributes to a selected area of knowledge.

A student must complete his/her thesis under direct supervision and guidance of a principal advisor. This principal advisor will serve as the chair of the student's examining committee and is appointed no later than the end of the third semester of study in the program. The committee also includes two additional faculty members. One of the additional faculty members must be selected from outside the program. The committee could also include one or more co-advisor.

The thesis must be defended to the satisfaction of the thesis examining committee.

A complete guide for preparing the thesis, including the thesis proposal, thesis defense and deadlines, is given in the Master's Thesis (Guides and Documents) folder available on iLearn and accessible using the following path: iLearn-Community-Office of Research and Graduate Studies (ORGS)-Graduate Studies.

For registration details, please refer to Thesis and Final Project under the Academic Policies and Regulations section of this catalog.

# School of Business Administration

## Dean

Robert Grosse

## Associate Dean

Jörg Bley

## Master of Business Administration (MBA)

Patrick McClelland, Director

The Master of Business Administration (MBA) program prepares students for leadership positions in the private and public sectors.

The MBA is designed to help managers in the Gulf region think and act globally by integrating the latest business knowledge into problem solving. The program provides advanced management education in an environment that encourages students to extend their leadership capabilities.

Our high-quality curriculum, taught in the evening, carries a total of 46.5 credits and includes three kinds of courses. Seven foundation courses cover basic skills for students who are new to business or who need a review before moving into advanced management topics. The number of foundation courses waived depends on previous education and experience. Eight core courses cover principles of analysis and leadership skills expected of an executive manager. Finally, two elective courses among the many on offer are required for a general MBA, but three electives are required for a concentration in finance, human resource management, innovation and entrepreneurship, management consulting or public management. More details on the program are available at [www.aus.edu/mba](http://www.aus.edu/mba).

### Program Educational Goals and Outcomes

Our MBA program is designed for students with a high managerial potential. MBA graduates are expected to achieve the following objectives:

- Proficiency in the core business knowledge required of an executive manager

Students will appropriately apply principles of economics, financial analysis, information and operations management, and marketing to the diagnosis of complex business problems.

- Understanding of the interrelations between business organizations and other societal institutions

Students will use principles of ethics and social responsibility to understand the management of relationships between a business enterprise and its key internal and external stakeholders.

- Teamwork, interpersonal, communication and leadership skills expected from an executive manager

Students will demonstrate graduate-level competence in team interaction, effective writing and presentation skills, and leadership.

- Application of critical thinking, analysis and problem-solving skills to crucial business decisions

Students will apply a variety of techniques to analyze problems critically; to develop, evaluate and select from competing alternative courses of action; then implement decisions in an organizational context.

### Admission Requirements

In addition to meeting the university's general graduate admission requirements, applicants must meet the specific requirements of the MBA program.

Admission to the MBA program is competitive. Applicants are required to take the MBA Admissions Test. This exam is administered through the AUS Testing Center. The score on this exam is then considered with the student's work experience and the undergraduate grade point average, particularly for the last two years of study. These results are used to assist the SBA Graduate Committee in determining the admission status of an applicant. Students unable to travel to Sharjah prior to enrollment may submit a score of 500 or more on the Graduate Management Admission Test (GMAT), taken within the last five years.

### Conditional Admission

Conditional admission to the MBA program is limited. During the semester in which they have conditional admission status, applicants must satisfy all admission requirements for the MBA program, including the requirement to earn an average of at least 3.00 in all coursework. Failure to do so will result in dismissal.

### Proficiency Requirements

Prior to enrolling in MBA courses students must demonstrate proficiency in computer skills and basic statistics. These requirements can be met by passing an undergraduate university-level course in computer skills or statistics, respectively. Students who

have not taken these courses may meet the proficiency requirements by earning a passing grade in a proficiency placement test.

### Academic Load

An MBA student may register for up to nine credits per semester. Upon a student's request, the program director can approve three additional credits if the student has achieved a cumulative GPA of 3.50 or above.

### Academic Standing Policy

In addition to the university guidelines on academic dismissal, as outlined in the Academic Policies and Regulations section of this catalog, the following rule applies:

- A student is allowed to receive two Cs (C or C+) in courses in the MBA program. If the student receives a third C or C+, he/she is dismissed from the program.

### Degree Requirements

To be awarded an MBA degree, students must complete 30 credits in MBA core courses and electives as follows:

- 24 credits in MBA core courses
- a minimum of six credits in elective courses

Students enrolled in the program also have the option to choose an area of concentration in one of the following fields: finance, human resource management, innovation and entrepreneurship, management consulting or public management.

Students who select an area of concentration are required to complete 33 credits in core courses and concentration electives as follows:

- 24 credits in MBA core courses
- a minimum of nine credits in concentration electives

Students may also be required to complete up to 16.5 credits in foundation courses at the beginning of their program.

Courses are offered in the evenings. The MBA program can be completed in 18 months, including summers, if all the foundation courses are required and 12 months if all the foundation courses are waived.

### Foundation Courses Requirement

Students admitted to the MBA program may be required to complete a maximum of 16.5 credits in foundation

courses, which serve as preparation for the core courses. The number of foundation courses required will normally depend on courses completed by the student as an undergraduate. Foundation courses may be waived when the waiver policy requirements are met.

#### *Foundation Courses (16.5 credits)*

- MBA 501 Foundations of Economics
- MBA 503 Financial Accounting for Managers
- MBA 504 Managerial Statistics
- MBA 505 Financial Management
- MBA 508 Analytical Methods and Modeling\*
- MBA 509 Marketing Concepts\*
- MBA 512 Organizational Behavior\*

\*Indicates a half-semester or compressed course format.

#### *Waiver Policy*

Students may qualify to waive any or all of the foundation courses. In general, a course may be waived if the student has completed comparable course work at the undergraduate level. Students may be required to submit course documentation. Waivers are only granted after an official, sealed transcript is received by the AUS Office of Enrollment Management/Graduate Admissions. Waivers are evaluated at admission. Listed below are the waiver rules:

- Each of the foundation courses in the MBA program may be waived for students who have taken equivalent coursework at the undergraduate level. Two equivalent courses are required to waive each of the following foundation courses: MBA 501, 503 and 504. One equivalent course is required to waive MBA 505, 508, 509 and 512. Waiver consideration will only be given for courses taken at an accredited university. Only courses in which the student earned a grade of B or better will be considered.
- Students who waive the following foundation courses will be required to take the core courses indicated:

Waived Foundation Course	Required Core Course
MBA 501	MBA 601
MBA 503	MBA 613
MBA 504	MBA 609
MBA 505	MBA 611
MBA 508	MBA 606
MBA 509	MBA 614
MBA 512	MBA 612

- Students with professional experience and/or holders of commonly recognized certificates (e.g., CPA or CFA) that indicate mastery of the content of a foundation course may be granted a waiver.
- Students may be required to take a placement exam in order to waive a foundation course. Waiver exams must be completed at the beginning of the program.

#### **Core Courses Requirement**

To be awarded an MBA degree, students must complete 24 credits in core courses.

#### *Core Courses (24 credits)*

- MBA 601 Managerial Economics
- MBA 606 Management Information Systems
- MBA 609 Operations Management
- MBA 611 Advanced Financial Management or MBA 625 Public Financial Management (public management concentration only)
- MBA 612 Leadership and Change Management
- MBA 613 Accounting Analysis for Managers
- MBA 614 Marketing Management
- MBA 618 Strategic Management in a Global Environment

#### *Substitution Policy*

With permission of the MBA program director, students may replace one core course with an elective course in a related subject, provided that the elective meets the educational objectives of the program.

Students may not substitute for a core course if the corresponding foundation course was waived. In addition, the following restrictions apply:

- Students concentrating in finance cannot substitute MBA 611.
- Students concentrating in human resource management cannot substitute MBA 612.
- Students concentrating in management consulting cannot substitute MBA 612.
- Students concentrating in public management can substitute MBA 611 with MBA 625 only. This substitution is encouraged.

#### **General MBA Degree**

In addition to meeting the core courses requirements, students who do not elect an area of concentration must complete two elective courses (a minimum of six credits) selected from any MBA courses not counted as core or

foundation courses. Electives selected from outside of the MBA program must be approved by the MBA program director.

#### **Finance Concentration (9 credits)**

Students may choose from the following or any other approved elective:

- MBA 632 Investment Analysis
- MBA 633 Financial Derivatives
- MBA 634 Commercial Banking
- MBA 635 Islamic Economics
- MBA 636 Islamic Banking and Finance
- MBA 637 Investing in Real Estate

#### **Human Resource Management Concentration (9 credits)**

Students may choose from the following or any other approved elective:

- MBA 661 Strategic Human Resource Management
- MBA 662 International Human Resource Management
- MBA 663 Staffing
- MBA 664 Training and Development
- MBA 665 Performance Management

#### **Innovation and Entrepreneurship Concentration (9 credits)**

#### *Required Course (3 credits)*

- MBA 615 Innovation and Entrepreneurship

#### *Elective Courses (6 credits)*

Students may choose from the following or any other approved elective:

- MBA 680 Project Management

#### **Management Consulting Concentration (9 credits)**

#### *Required Course (3 credits)*

- MBA 670 Management Consulting

#### *Elective Courses (6 credits)*

Students may choose from the following or any other approved elective:

- MBA 610 Business Research Applications
- MBA 615 Innovation and Entrepreneurship
- MBA 680 Project Management
- MBA 690 Global Consulting Practicum

#### **Public Management Concentration (9 credits)**

#### *Required Course (3 credits)*

- MBA 620 Public Administration and the Policy Process

### *Elective Courses (6 credits)*

Students may choose from the following or any other approved elective:

- MBA 621 Management of Nonprofit Organizations
- MBA 622 The Public-Private Partnership
- MBA 623 e-Government
- MBA 624 Ethics, Law, Democracy and Society

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### Academic Advising

The MBA program director and the MBA program coordinator provide academic and career advising to students. Additionally, the graduate committee provides assistance in advising as required. The graduate committee consists of faculty members who teach in the MBA program and are appointed on a yearly basis.

### **Master of Science in Accounting (MSA)**

Taisier Zoubi, Head

The Master of Science in Accounting (MSA) program is designed to provide students with knowledge and preparation to pursue professional careers in public and private accounting; develop skills necessary to solve accounting problems that are of contemporary relevance and more challenging in the fields of accounting, finance and other business areas; and teach the required technical and nontechnical accounting competencies. Although pre-class readings and in-class lectures remain essential for presenting key accounting theories and concepts, the reinforcement and assessment methods are oriented toward experiential exercises that require the students to apply the material to real-life cases. Thus, the program makes extensive use of case studies, individual and team projects and other "real-world" opportunities to use the material covered.

The MSA program creates additional employment opportunities and promotes the career success of our graduates. Career options for graduates will include positions in public accounting such as auditors, controllers, financial analysts and management consultants. This program will allow students to meet the current 150-semester-hour education requirement to take the Certified Public Accountant (CPA) Examination in most US states. The objective of the proposed accounting program is to give our students an edge in passing the CPA exam and to prepare them for careers in professional accountancy. The combination of undergraduate and

graduate courses in the MSA program deepens students' competencies in business in general and accounting in particular. This knowledge is needed to achieve professional certifications such as CPA, CMA and CIA—qualifications expected of top professionals in the accounting field. The MSA program will open a broader career path to students who enter public accounting as auditors, consultants, corporate accountants or financial analysts. The Big Four accounting firms in the region and other top employers will hire graduates from the MSA program particularly because of its solid auditing/assurance component.

### **Program Educational Goals and Outcomes**

The MSA program prepares students for careers in accounting and helps them develop the decision-making skills necessary to lead successful business enterprises. The curriculum presents global business perspectives and challenges students to apply them to the Gulf region. MSA graduates are expected to achieve the following goals:

- Provide accounting students with the additional knowledge and preparation required to pursue careers in private and public accounting

Students will be able to demonstrate advanced knowledge of financial statements, regulations, auditing standards and procedures, standards of ethical conduct and their applications.

- Provide accounting students with the necessary additional knowledge and preparation required to pass the CPA exam

Students will gain knowledge to assess the financial, ethical and social implications of selecting various accounting policies to support decisions made by internal and external users of accounting information.

- Provide the skills necessary to solve challenging accounting problems that are of contemporary relevance in finance and other business areas

Students will be able to integrate accounting skills and knowledge to resolve current complex accounting issues.

- Develop accounting skills and knowledge to facilitate career advancement in business or pursuit of further advanced study in accounting

Students will be able to apply judgment in selecting financial reporting standards to a set of financial statements.

- Provide students with professional sophistication to manage business

complexities using professional leadership and critical-thinking skills.

Students will develop skills to apply appropriate professional skepticism in evaluating financial assertions.

- Provide accounting students with technical and non-technical accounting competencies.

Students will be able to explain effectively technical accounting concepts in written and oral form.

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### Admission Requirements

Admission to the MSA program is competitive. Regardless of undergraduate major, to be considered for admission, each applicant to the MSA program is expected to have achieved a minimum undergraduate CGPA of 3.00, in addition to meeting the university's graduate admission requirements. For details, please refer to Admission to Graduate Studies/General University Requirements for Graduate Admission section earlier in this catalog.

Applicants with a lower CGPA may be granted conditional admission, but are generally expected to participate in a face-to-face interview. Such applicants may also be required to meet additional specific requirements of the MSA program.

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### Academic Load

An MSA student may register for up to nine credits per semester. Upon a student's request, the Head of the Department of Accounting can approve three additional credits if the student has achieved a cumulative GPA of 3.50 or above.

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### Academic Standing Policy

In addition to the university guidelines on academic dismissal, as outlined in the Academic Policies and Regulations section of this catalog, the following rule applies:

- A student is allowed to receive two Cs (C or C+) in courses in the MSA program. If the student receives a third C or C+, he/she is dismissed from the program.

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### Degree Requirements

To be awarded an MSA degree, students must complete 30 credits in MSA core courses and electives as follows:

- 18 credits in core courses
- six credits in ACC elective courses
- six credits in MBA elective courses

### **Prerequisite Courses**

Students admitted to the MSA program may be required to complete a

maximum of 24 credits in courses that serve as prerequisites to the MSA program degree requirements. All MSA students must meet this prerequisite requirement, whether by demonstrating completion of the required courses as an undergraduate at AUS, by demonstrating acceptable performance in equivalent courses at another accredited institution, or by completing the prerequisites before taking the corresponding graduate courses.

Students may qualify to waive any or all of the prerequisite courses. Waivers are evaluated by the Department of Accounting Graduate Committee at admission. Waivers are only granted after an official, sealed transcript is received by the AUS Office of Enrollment Management/Graduate Admissions.

#### *Prerequisite Courses (24 credits)*

- ACC 301 Intermediate Financial Accounting I
- ACC 302 Intermediate Financial Accounting II
- ACC 303 Cost Accounting
- ACC 305 Income Tax I
- ACC 360 Accounting Information Systems
- ACC 410 Auditing
- six credits in courses selected from:
  - ACC 306 Income Tax II
  - ACC 401 Advanced Financial Accounting
  - ACC 413 Introduction to Accounting for Government and Non-Profit Entities
  - ACC 420 International Accounting Standards

#### **Core Courses Requirement**

To be awarded an MSA degree, students must complete 18 credits in core courses:

- ACC 610 Topics in Financial Accounting
- ACC 611 Auditing and Attestation
- ACC 612 Advanced Topics in Managerial and Cost Accounting
- ACC 613 Advanced Topics in International Financial Reporting Standards
- ACC 614 Regulatory Environment in Accounting
- ACC 615 Enterprise Database Systems

#### **Elective Courses (12 credits)**

In addition to meeting the core course requirements, students must complete two accounting (ACC) elective courses (six credits) and two MBA elective courses (six credits) as follows:

#### *ACC Elective Courses (6 credits)*

Students must select from the following list of courses:

- ACC 620 Forensic Accounting and Fraud Examination
- ACC 621 Ethical Environment and Corporate Governance
- ACC 622 Internal Auditing
- ACC 623 Financial Statement Reporting and Analysis
- ACC 624 Oil and Gas Accounting
- ACC 625 Tax Research
- ACC 626 Information Technology Auditing and Assurance
- ACC 627 Advanced International Taxation
- ACC 628 Fraudulent Financial Reporting

#### *MBA Elective Courses (6 credits)*

Students must complete two courses from the following:

- MBA 601 Managerial Economics
- MBA 606 Management Information Systems
- MBA 609 Operations Management
- MBA 611 Advanced Financial Management

#### **Area of Specialization**

Students interested in furthering their knowledge in the areas of auditing, taxation or forensic accounting may elect to complete their ACC electives in that area of specialization, as follows:

##### *Auditing*

- ACC 622 Internal Auditing
- ACC 626 Information Technology Auditing and Assurance

##### *Taxation*

- ACC 625 Tax Research
- ACC 627 Advanced International Taxation

##### *Forensic Accounting*

- ACC 620 Forensic Accounting and Fraud Examination
- ACC 628 Fraudulent Financial Reporting

#### **Academic Advising**

The Department of Accounting faculty provides academic and career advising to MSA students through the head of the department, advisor and graduate faculty in the department. Additionally, the Department of Accounting Graduate Committee (DAGC) provides assistance in advising as required. The graduate committee consists of all eligible graduate faculty members within the Department of Accounting.

The head of the department and his assistant will be available in the evening on specified weekdays to address any academic concerns students may have. In practice, this advising often focuses on coaching students on academic discipline or assisting them with practical matters that are difficult to resolve when campus offices are closed. Program information will also be available on the AUS website at the following link: [www.aus.edu/sba/msa](http://www.aus.edu/sba/msa).

### **Executive Master of Business Administration (EMBA)**

Melvin Ayogu, Director

The Executive MBA program equips business professionals with the leadership skills required to excel in any domain of business endeavor. The uniquely American curriculum helps our graduates acquire adaptive decision-making skills and mastery of systems thinking that have become a crucial skills-set for effective management of, and leadership in modern enterprises within an increasingly integrated and competitive global business environment.

With an embedded multiple study-tour component, participants are exposed to comparative business culture as well as contrasting leadership and managerial perspectives for a fully enriching educational experience. Formative and summative evaluations keep our program globally competitive and regionally relevant, helping to contribute significantly to the professional advancement of our graduates.

#### **Program Educational Goals and Outcomes**

Designed for executives with high achievement potential, the EMBA program is for the unique few seeking to leave indelible career footprints as value-creators for their employers and generally as entrepreneurs and innovators in business. Our explicit focus on leadership and managerial competencies define a clear thematic focus that is grounded in active learning and local application to the opportunities and challenges of business enterprises within the Gulf region. The program is based on a visibly strong commitment to partnership for building a critical mass of world-class business leaders in the region. Specific goals and outcomes include:

- Application of business knowledge to the development of organizational strategy

Participants will apply principles from business disciplines such as economics, finance, marketing, information systems, human resources and operations research to the development of integrated strategies for growth and innovation.

- Management of relations between business organizations, stakeholders and social institutions

Participants will use principles of ethics and social responsibility, knowledge of local expectations, as well as the mastery of the influence of globalization on corporate governance to position a business enterprise appropriately with key internal and external stakeholders.

- Demonstrate leadership, teamwork, and interpersonal and communication skills expected of an authentic leader

Participants will demonstrate an ability to use leadership techniques, high-level team interaction, presentation skills, application of technology, and effective writing in executing projects that emphasize the role of a leader in enhancing organizational performance.

- Application of critical thinking, analysis and problem-solving skills to executive decisions

Participants will apply a variety of techniques to analyze problems critically; to develop, evaluate and select from competing alternative courses of actions; then implement decisions in an organizational context.

### Admission Requirements

Admission requirements for the EMBA program limit participation to professionals with significant career growth potential. The selectivity is designed to ensure that in contributing meaningfully to the cohort interaction, these executives can leverage their experiences off each other.

Applications for admission to AUS graduate programs are processed through the Office of Enrollment Management/Graduate Admissions, which determines whether an applicant meets minimum university standards.

Each applicant must satisfy the following requirements:

- possess a four-year bachelor's degree from an accredited university recognized by AUS and the UAE Ministry of Higher Education and Scientific Research
- achieved a minimum cumulative grade point average (CGPA) of 3.00 (on a scale of 4.00) or its equivalent, and 3.00 or its equivalent in 300- and 400-level courses in disciplines relevant to the graduate program. An

applicant with a lower CGPA must present evidence of at least five years of relevant work experience after earning the bachelor's degree and provide evidence of suitable preparation for graduate work. Such students may be admitted on a conditional basis, subject to passing all assessments during their first six months in the program.

- have attained a minimum Internet-Based TOEFL score of 80 or a minimum IELTS score of 6.5 (Academic Version)

The SBA Graduate Committee will require the following additional information before determining whether an applicant will be admitted to the program:

- CV or a resume indicating the current position title, responsibilities and any awards or special recognition received by the applicant. Each participant will be expected to have a minimum of three to five years of management-level leadership experience.
- a recommendation letter from a supervisor or other relevant executive indicating his/her assessment of the applicant's prospects for taking on increased levels of responsibility in the organization, and the employer's willingness to provide a supportive work environment, e.g., time off, flexible work arrangements, etc.
- a statement of interest describing the applicant's reasons for seeking admission

After reviewing these materials, the SBA Graduate Committee will schedule interviews with candidates judged most likely to benefit from the program. The evaluation and interview results are used in the admission decision. AUS EMBA admissions policy promotes equal opportunity and diversity.

The structure and sequencing of program (the cohort approach) do not accommodate transfer applicants or non-degree participants.

### Attendance Policy

Students are expected to participate in all the EMBA courses with their cohort for maximal experience. The EMBA Program Director may, in extenuating circumstances, permit a participant to make up missed sessions on special arrangement in order to both remedy any gaps and satisfy the attendance requirement.

### Academic Load

The academic load comprises 15 courses of three credits each delivered on weekends over a period of two years.

### Academic Standing Policy

Grading in the EMBA program is on the basis of Pass with Distinction/Pass/Low Pass/Fail. A grade of Pass with Distinction is awarded to participants who demonstrate exceptional performance by achieving a numerical grade of 3.75 or above.

University guidelines on repeating courses and on academic standing apply, as outlined in the Academic Policies and Regulations section of this catalog.

### Degree Requirements

To be awarded an EMBA degree, the program requires the completion of 15 courses totaling 45 credits with a CGPA of 3.00 or above.

### Required Courses (45 credits)

- EMB 601 Business Foundations
- EMB 602 Principles of Leadership
- EMB 603 Economics and Analytical Foundations
- EMB 604 Operations Management
- EMB 605 Market Analysis and Marketing Strategy Development
- EMB 606 Statistics and Research Methods
- EMB 607 Leadership and Human Capital
- EMB 608 Global Economics and Decision Support
- EMB 609 International Finance and Investment
- EMB 610 Society and Governance
- EMB 611 Executive Leadership
- EMB 612 Corporate Financial Management and Islamic Finance
- EMB 613 Supply Chain Management
- EMB 614 Market Leadership: Program Development and Implementation
- EMB 615 Capstone: Developing and Defending a Business Plan

### Academic Advising

The EMBA program director provides academic advising to the EMBA participants on a continuing basis throughout their academic engagement in the program.







# College of Architecture, Art and Design

## UPL Urban Planning

**UPL 501 Fundamentals of Urban Planning (3-0-3).** (Cross-listed as ARC 571). Introduces the discipline of urban planning. Surveys the history of the field as well as its links with other fields of environmental studies, such as architecture, urban design, geography, engineering and others. Overviews what planners do and the tools they use in their practice.

**UPL 541 Planning Theory and Methods (3-0-3).** Explores the theoretical foundations of planning and its associated methods. Examines the basic theoretical framework that fosters good planning practice. Reviews the classical theoretical paradigms of planning, examines the major roles played by practicing planners, and looks at the application of theory in dealing with such issues as community development, environmental protection, economic policies, political and administrative structure, and social equity.

**UPL 547 Research Methods and Analysis (3-0-3).** Introduces the quantitative and qualitative methods and techniques used in urban planning research and practice. Analytic approaches include research design, multivariate regression, survey research, case study research, evaluation and graphic data presentation. Emphasizes methods in the context of planning and urban policy research. Prerequisite/concurrent: UPL 501.

**UPL 548 Environmental Planning (3-0-3).** Provides a comprehensive overview of the field of environmental planning and how it relates to efforts intended to manage, organize and protect environmental resources. Reviews the political and administrative context of environmental planning. Addresses principles of sustainability, ethics and the law in relation to land, air, water and other natural resources. Prerequisite/concurrent: UPL 501.

**UPL 550 Urban Economics and Analysis (3-0-3).** Examines the economics of cities and urban problems. Undertakes economic analysis of the location and growth of urban and regional areas with emphasis on public policy issues. Discusses land-use patterns, measurement and change in regional economic activity, and urban problems such as transportation, housing, poverty and crime. Places special attention on local fiscal behavior, overlapping jurisdictions and the provision of local public goods, and

intergovernmental fiscal relations. Prerequisite: UPL 501.

**UPL 556 Spatial Analysis for Planners (4-0-3).** Introduces key concepts and technical skills involved in analyzing spatial phenomena. Includes the following topics: spatial inferences, cartographic quality, geospatial data and exploratory spatial data analysis. Introduces and applies key software tools in urban and regional contexts. Prerequisite/concurrent: UPL 501. Lab/Tech fee rate A applies.

**UPL 558 Spatial Planning Principles and Practice (3-0-3).** Traces the history of spatial planning in Europe, Australia and the US. Previews the principles and strategies of spatial planning. Examines the environmental, political, economic and social dimensions and dynamics of spatial planning. Reviews "best" practices in spatial planning. Analyzes spatial planning as a tool for sustainable development in the United Arab Emirates and the developing world.

**UPL 562 Urban Infrastructure Planning (3-0-3).** Explores the challenges and prospects for planning sustainable urban infrastructure. Examines the conceptual basis of infrastructure planning, as well as empirical cases of planning, financing and managing sustainable urban infrastructure. Reviews case studies and best practices of infrastructure planning worldwide and locally.

**UPL 563 Urban Planning and Housing Policy (3-0-3).** Provides an overview of housing policy as it relates to urban planning. Reviews different approaches to housing provision from around the world including housing finance mechanisms. Considers housing typologies as well as policy issues specific to the UAE.

**UPL 565 Land Use Planning Principles and Practice (3-0-3).** Examines various theoretical and practice-based approaches to land use planning. Gives an overview of the various social, economic, political and legal influences on land use and the planning process and application appropriate to balance such influences. Prerequisite/concurrent: UPL 501.

**UPL 572 Urban Transportation Systems Planning Techniques (3-0-3).** Covers data collection, trip generation, trip distribution, factors underlying the choice of mode, traffic assignment, modeling and evaluation techniques, use of planning software packages, development and evaluation

of alternatives. Prerequisite/concurrent: UPL 501.

**UPL 574 Urban Transportation Systems Analysis (3-0-3).** Explores the use of quantitative techniques for modeling urban transportation systems' performance. Covers the application of graph theory and network analysis to transportation problems, and analytical approaches to formulate network equilibrium assignment problems and solution algorithms. Introduces dynamic traffic assignment. Prerequisite: UPL 572.

**UPL 582 Theory and Principles of Urban Design (3-0-3).** Examines major concepts, principles and theories of urban design. Reviews the historic development of urban design as a professional field and surveys current urban design issues, trends and practices in both the Western and non-Western/Islamic contexts. Prerequisite/concurrent: UPL 501.

**UPL 584 Urbanism and Urban Form Analysis (3-0-3).** Examines urban form elements, patterns and evolution. Focuses on the forces that have shaped cities in history and analyzes contemporary trends that impact urban formation and regeneration. Explores methods of urban morphological analysis as related to urban design. Places special attention on the study of cities of the Middle East and Islamic societies. Prerequisite: UPL 501.

**UPL 597 Urban Planning Internship (0-0-0).** Consists of eight weeks (320 hours) of approved internship. At the end of the internship, the student must submit a report of the internship work experience. Course is offered on a Pass/Fail basis. Prerequisite: UPL 501. Registration fees apply.

**UPL 651 Negotiation Strategies (3-0-3).** Introduces the theory, strategies and dynamics of negotiation, bargaining and consensus building in the corporate, governmental and non-profit sectors. Reviews relevant social theory and simulates experiences in negotiation and issue resolution.

**UPL 667 Urban Planning Studio (12-0-6).** Covers the application of substantive skills in urban planning. Focuses on comprehensive planning exercises for an urban area in the UAE/Gulf region, involving fieldwork and hands-on analysis and application. Emphasizes the methods and tools of preparing plans. Addresses development of baseline data; analysis of existing conditions; identification of strategic planning and development issues; forecasting of future conditions;

review of development goals, objectives and policies; development and synthesis of alternative plans; evaluation of alternatives; and development of implementation strategies and programs that support policymaking. Prerequisites: UPL 501, UPL 556 and completion of a minimum of 15 UPL credits. Lab/Tech fee rate A applies. Must be taken two times for a total of 6 credits.

**UPL 676 Transportation Systems Operations and Control (3-0-3).**

Studies the operation and control of transportation systems with emphasis on traffic characteristics, capacity analysis, traffic improvements, signalization, signs and marking, channelization, intersection capacity, and principles and techniques used to improve the efficiency and safety of transportation systems. Prerequisite: UPL 572.

**UPL 686 Space, Society and the Public Realm (3-0-3).**

Explores the nature of urban space and its role in the social being. Focuses on the potentials of space as a tool in shaping the public realm and nurturing citizenship. Examines critical issues of globalization and the transforming role of space in the post-industrial, informational city. Prerequisite: UPL 582.

**UPL 698 Final Project (6 credits).**

Requires students to choose an applied research topic often in conjunction with a real planning problem and/or client. Students will produce a high-quality project report guided by an advisor and a minimum of two readers. The final project serves as a capstone course requiring students to draw on the basic knowledge, skills and techniques learned from their coursework. Graded as Pass/Fail. Prerequisite: approval of program coordinator.

**UPL 699 Master's Thesis**

**(6 credits).** Requires independent, significant original research conceived and developed by the student and guided by an advisor and a minimum of two readers. Students will demonstrate scholarly capabilities and expertise based on the theoretical knowledge and methodological skills they have developed in their previous coursework. The thesis experience serves as a capstone course for students who intend to pursue careers in research, teaching and/or scholarship. Graded as Pass/Fail. Prerequisite: approval of program coordinator.

## Independent Study

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

**Independent Course (1 to 4**

**credits).** A course listed in the catalog but offered in an independent study format. The course is coded using the course number in the catalog.

**Directed Study (1 to 4 credits).** An investigation under faculty supervision beyond what is offered in existing courses.

Directed study courses are numbered as 596 or 696 courses. The three-letter course prefix reflects the field of study of the course (e.g., directed study courses in UPL are coded as UPL 696).

For further details on independent study, please refer to Registration in Independent Study Courses in the Academic Policies and Regulations section of this catalog.

## Special Topic Courses

**Special Topic (1 to 4 credits).**

Presents a theoretical or practical topic proposed by the faculty beyond what is offered in existing courses. Can be repeated for credit. Prerequisites: topic specific. Lab/tech fee may apply.

Special topic courses are numbered as 594 or 694 courses. The three-letter course prefix reflects the field of study of the course.

Descriptions of particular special topic courses are made available in the college/school offering the course during registration.

# College of Arts and Sciences

## ELT

## TESOL

**ELT 501 Advanced English Grammar (3-0-3).** (Cross-listed as ENG 401). Examines the structure, function and meaning of contemporary English. Discusses issues relative to descriptive/prescriptive approaches to language and ESL instruction.

**ELT 503 Contrastive Linguistics (3-0-3).** Compares and contrasts English and Arabic phonology, morphology, syntax and semantics. Promotes a functional approach to language to demonstrate the applications of contrastive linguistics to ESL teaching.

**ELT 505 Culture and the Language Teacher (3-0-3).** Investigates how identities, values, assumptions, behaviors and communication styles affect teaching and learning a second language. Analyzes methods and approaches for cross-cultural research.

**ELT 510 Research Methods and Academic Writing (3-0-3).** Develops students' academic writing competencies and research skills. Introduces students to quantitative and qualitative research methods and teaches them how to conduct and report research.

**ELT 511 Linguistics for ESL Teachers (3-0-3).** (Formerly ENG 511). Focuses on areas in linguistics relevant to ESL teachers. Explores ways of utilizing research and generalizations derived from linguistics to inform ESL teaching practice.

**ELT 513 Language Acquisition and Development (3-0-3).** Focuses on processes involved in acquiring first and second languages. Examines different theoretical perspectives explaining acquisition and analyzes the factors that affect language development and learning. Explores the implications of SLA research in ELT classroom contexts.

**ELT 515 Methods and Materials Development (3-0-3).** Examines traditional and contemporary approaches to English language teaching. Various aspects of classroom practice are analyzed, including teacher and learner roles, classroom management, and integrated versus separate teaching of the language skills.

**ELT 517 Curriculum Design (3-0-3).** Introduces students to the principles of ESL course design. Examines the stages of developing and evaluating learning centered curricula and materials. Prerequisite/concurrent: ELT 515.

**ELT 521 Reading and Writing in ESL (3-0-3).** Discusses various theoretical models dealing with teaching literacy skills in a second language to children and adults. Explores ways to adapt and apply these models for effective ESL instruction. Prerequisite: ELT 510.

**ELT 523 Bilingual Education (3-0-3).** Reviews different models of bilingual education and issues in bilingualism. Discusses how to achieve a balanced bilingual education system by examining the challenges posed by cultural and linguistic diversity in a bilingual education setting.

**ELT 525 Pragmatics for ESL Teachers (3-0-3).** Focuses on social implications of language use in social contexts (world English, international English, regional English or intranational English). Provides training for ESL/EFL teachers in practical and theoretical areas of pragmatics and teaches them how to prepare, present and evaluate lessons in pragmatics utilizing authentic materials. Prerequisite: ELT 511.

**ELT 531 Sociolinguistics (3-0-3).** Studies the relationship between language, society and culture. Investigates the implications of sociolinguistic research for ESL teachers. Prerequisite: ELT 510.

**ELT 551 Language Testing and Evaluation (3-0-3).** Covers the fundamental goals, principles, standards and uses of language assessment and language assessment research. Reviews the factors involved in assessing proficiency in second language skills and in selecting appropriate testing instruments and evaluation tools. Prerequisite/concurrent: ELT 515.

**ELT 553 Technology in the ESL Classroom (3-0-3).** Introduces a wide range of current applications of technology in the ESL classroom. Focuses on creating innovative and effective ESL learning and teaching environments using computers and other educational technologies. Prerequisite/concurrent: ELT 515.

**ELT 567 ELT Leadership and Management (3-0-3).** Introduces students to basic concepts in ELT leadership and management. Explores the areas of educational organizations, human resources in ELT, language program development and marketing as well as establishing stakeholder relations. Prerequisite: ELT 510.

**ELT 611 Classroom Research (3-0-3).** Reviews ESL classroom-based research as a means of understanding how ESL instruction and learning take place. Discusses research topics such as

teacher talk, wait time, conversational repair, error correction, learning strategies and feedback. Prerequisite: ELT 510.

**ELT 615 Quantitative and Qualitative Research in ELT (3-0-3).** Surveys both quantitative and qualitative theoretical and epistemological approaches in TESOL research. Emphasizes how choices in research designs and analytical procedures impact data collection and results. The course is applications-oriented using the results of established theory. Graduate students can use this course to develop their research project proposals. Prerequisite: ELT 510.

**ELT 619 Practicum in TESOL (1 to 3 credits).** Provides the opportunity to observe, explore and implement effective ESL teaching strategies. Involves weekly seminars in which the students discuss their classroom experiences and reflect on their personal growth as ESL teachers. Prerequisite: ELT 551.

**ELT 698 Professional Project (3-0-3).** Requires students to further develop their teaching skills by directing them to conceptualize, plan, adapt and apply innovative approaches to different components of English language teaching and learning. At the end of the course, students must write a project report to be defended in front of an examining committee. Graded as Pass/Fail.

**ELT 699 Master's Thesis (6 credits).** Requires students to complete individual and original research work on a topic related to some aspect of TESOL that addresses both theoretical and practical aspects of ELT. The thesis is supervised by the thesis faculty supervisor and is defended to the satisfaction of the thesis committee. Graded as Pass/Fail.

## MTH

## Mathematics

**MTH 500 Mathematical Statistics with Applications (3-0-3).** Introduces formulation of statistical models, transformations and expectations, methods of estimation and optimal theory, hypothesis testing and methods of evaluations, nonparametric statistics, and Monte Carlo simulation and applications using statistical packages. Prerequisite: admission to the MSMTH program.

**MTH 505 Ordinary Differential Equations (3-0-3).** Covers the following topics: scalar and planar autonomous systems, nonlinear systems and linearization, existence and

uniqueness of solutions, matrix solution of linear systems, series solutions, phase plane analysis, stability analysis, bifurcation theory, Liapunov's method, limit cycles and Poincaré Bendixon theory. Prerequisite: admission to the MSMTH program.

**MTH 506 Partial Differential Equations (3-0-3).** Covers the classification of first- and second-order partial differential equations and analyzing its applications. Introduces eigenfunction expansions, separation of variables, and transform methods for solving PDEs, Green's functions for PDEs, and the method of characteristics. Prerequisite: admission to the MSMTH program.

**MTH 507 Financial Mathematics I (3-0-3).** Provides a basic introduction to financial mathematics. Introduces mathematical perspective on the valuation of financial instruments such as futures and options, and their risk-management using the Cox-Ross-Rubenstein framework. Introduces the stochastic techniques employed in derivative pricing. Prerequisite: admission to the MSMTH program.

**MTH 508 Mathematical Biology (3-0-3).** Explores continuous and discrete methods for modeling biological systems. Covers ordinary differential equations models, multistate logical models and polynomial dynamical systems. Introduces phase portraits, bifurcation diagrams, perturbation theory, parameter estimation and system identification. Examines some biological systems and their mathematical models. Prerequisite: admission to the MSMTH program.

**MTH 510 Real Analysis I (3-0-3).** Covers Least upper bound axiom, the real numbers, compactness, sequences, infinite series, continuity, uniform continuity, sequences and series of functions, uniform convergence, differentiation, the Riemann integral and fundamental theorem of calculus, sequences and series of functions, and the Weierstrass approximation theorem. Prerequisite: admission to the MSMTH program.

**MTH 511 Real Analysis II (3-0-3).** Covers Lebesgue measure on the real line, measurable functions and integration on  $\mathbb{R}$ , abstract measure spaces, bounded convergence theorem, Fatou's lemma, monotone convergence theorem, convergence in measure, Radon-Nikodym theorem,  $L_p$  spaces, Hölder and Minkowski inequalities, and Fourier transforms. Prerequisite: MTH 510.

**MTH 512 Advanced Linear Algebra (3-0-3).** Covers the proof-based theory of matrices, determinants, vector spaces, linear spaces, linear transformations and their matrix

representations, linear systems, linear operators, eigenvalues and eigenvectors, invariant subspaces of operators, spectral decompositions, functions of operators, and applications to science, industry and business. Prerequisite: admission to the MSMTH program.

**MTH 513 Advanced Probability (3-0-3).** Covers probability spaces, random variables, independence, integration and expectation, convergence concepts, strong and weak laws of large numbers, convergence in distribution, characteristic functions and central limit theorem, conditional probability, and martingales. Prerequisite: MTH 511.

**MTH 514 Combinatorics (3-0-3).** Covers enumeration, combinatorial optimization, random methods in combinatorics (random graphs, random matrices, randomized algorithms), combinatorial designs, matroids, formal languages and combinatorics on words, combinatorial number theory, and combinatorial and symbolic methods in dynamical systems. Prerequisite: admission to the MSMTH program.

**MTH 516 Financial Mathematics II (3-0-3).** Introduces fundamental concepts of discrete-time binomial model and continuous-time. Covers probability measure theory and conditional expectation, Brownian motion and quadratic variation, martingales, Itô integral, stochastic calculus, replicating portfolios and hedging, Black-Scholes-Merton formulae for a European-style call option price, change of measure and Girsanov's Theorem, risk-neutral pricing theory, no-arbitrage and existence of risk-neutral measure, market completeness and uniqueness of risk-neutral measure. Prerequisite: MTH 507.

**MTH 517 Numerical Methods for Derivative Pricing (3-0-3).** Covers modeling and pricing of equity options in the Black-Scholes framework including analytic methods, PDE methods and simulation methods. Examines pricing and hedging of exotic derivatives including path-dependent options (e.g., barriers, look-backs, Asian options). Explores extensions of the Black-Scholes model including local volatility and stochastic volatility models. Presents implementations of some models in the computer algebra system MATLAB. Prerequisite: admission to the MSMTH program.

**MTH 520 Complex Analysis (3-0-3).** Covers the following topics: analytic functions, Cauchy's theorem and consequences, singularities and expansion theorems, maximum modulus principle, residue theorem and its application, compactness and convergence in space of analytic and meromorphic functions, elementary conformal mappings, Riemann mapping

theorem, elliptic functions, analytic continuation and Picard's theorem. Prerequisite: admission to the MSMTH program.

**MTH 525 Functional Analysis (3-0-3).** Covers normed linear spaces, completeness, Banach spaces, Hilbert spaces, duality and Hahn-Banach theorem. Examines topics related to linear operators including boundedness, invertibility, adjoints, closed graph theorem, open mapping theorem, compactness and spectral analysis. Prerequisite: MTH 511.

**MTH 530 Abstract Algebra I (3-0-3).** Covers basic concepts in group theory with examples and theorems, Krull-Schmidt theorem, groups acting on sets, cosets, stabilizers, Sylow's theorems, free groups, and classification of finitely generated abelian groups, nilpotent and solvable groups. Introduces rings and fields. Prerequisite: admission to the MSMTH program.

**MTH 531 Abstract Algebra II (3-0-3).** Covers rings, ideals, integral domains, unique factorization domains, rings with zero-divisors, modules over a principal ideal domain (PID), and rational and Jordan canonical form. Introduces Fields extension and Galois Theory. Prerequisite: MTH 530.

**MTH 540 Algebraic Coding Theory (3-0-3).** Employs the theory of rings and finite fields. Covers linear codes, cyclic codes, BCH codes, Reed-Solomon codes, convolutional codes, codes over rings, and encoding/decoding. Prerequisite: admission to the MSMTH program.

**MTH 551 Methods of Applied Mathematics (3-0-3).** Covers integral equations, Volterra and Fredholm type equations, relation to differential equations, solutions by Neumann series, Green's functions, asymptotic analysis of solutions, and perturbation techniques with eigenvalue problems. Prerequisite: admission to the MSMTH program.

**MTH 555 Loss and Risk Models (3-0-3).** Covers severity models, frequency models, aggregate models, the impacts of coverage modifications, and risk measures. Prerequisite: admission to the MSMTH program.

**MTH 560 Topology (3-0-3).** Introduces topological spaces, continuous functions and homeomorphisms. Covers connectedness, compactness, separation axioms, product and quotient topologies, and metric spaces. Introduces algebraic topology: homotopy, fundamental groups, covering spaces and applications such as the Brouwer fixed point theorem and the Borsuk-Ulam theorem. Prerequisite: admission to the MSMTH program.

**MTH 565 Numerical Analysis (3-0-3).** Covers interpolation, numerical evaluation of definite integrals and solution of ordinary differential equations, stability and convergence methods, and error estimates. Prerequisite: admission to the MSMTH program.

**MTH 570 Optimal Control Theory (3-0-3).** Introduces deterministic optimal control. Covers examples involving calculus of variations, optimal trajectories, and engineering control problems. Prerequisite: admission to the MSMTH program.

**MTH 599 Master's Thesis (6 credits).** Requires students to complete original research work in the field of study. Requires the thesis to be completed under the supervision of a faculty member from the department serving as thesis advisor, and a final defense to the examining committee. Graded as Pass/Fail. Prerequisite: approval of the program coordinator.

## TRA English/Arabic/ English Translation and Interpreting

**TRA 500 Principles and Strategies of Translation (3-0-3).** Provides advanced training in principles and methods of translation from English to Arabic and vice versa. A variety of text types are covered, ranging from legal to journalistic genres.

**TRA 503 Theoretical Models of Translation (3-0-3).** Provides a conceptual map of translation studies and outlines the various theoretical approaches and trends that impact the practice of translation. Introduces the range of factors that govern the process of translation and to the theoretical underpinnings that have motivated different attitudes to translating and translations. Prerequisite: TRA 500.

**TRA 504 Discourse Semantics and Pragmatics in Translation (3-0-3).** Addresses the needs of the practicing translator and interpreter within a discourse framework. Advanced training in semantics and pragmatics is provided, and linguistic analysis in these domains is re-considered from the vantage point of cross-cultural communication.

**TRA 505 Interpreting and the Profession I (3-0-3).** Provides the students with high-level training in those interpreting skills most relevant to the translator at work. Provides advanced training in liaison and consecutive interpreting with a focus on professional standards and community needs. Theoretical insights into the process of interpreting are presented and placed within an overall, practice-driven model of the process.

**TRA 509 Interpreting and the Profession II: Simultaneous Interpreting (3-0-3).** Builds on TRA 505 and provides high-level training in those skills most relevant to Simultaneous Interpreting (SI), including professional standards and international conventions as well as equipment simultaneous interpreters use. Theoretical insights into the process of interpreting are presented and placed within an overall, practice-driven model of the process. Prerequisite: TRA 505.

**TRA 510 Research Methods and Academic Writing (3-0-3).** Examines academic writing conventions and research methods. Addresses quantitative and qualitative research approaches. Deals with the requirements of preparing/writing MA theses.

**TRA 512 Terminology, Arabization and the Translator (3-0-3).** Introduces the field of terminology and reviews it within the work of the translator. Explains term formation, standardization, term banks and coordination, among others. Reviews the process and problems of Arabization and its impact on translation into Arabic. Demonstrates the application of theoretical framework of terminology and Arabization on translation work.

**TRA 556 Rhetoric for Translators (3-0-3).** Surveys the various traditions within both English and Arabic grammar and rhetoric and their application to translation. Develops and applies a text-linguistic model rooted in rhetorical thinking.

**TRA 558 Contrastive Linguistics and Translation (3-0-3).** Deals with how English and Arabic compare and contrast at various levels of linguistic organization: phonology, morphology, syntax and semantics. A discourse pragmatic perspective, together with a functional approach to the lexico-grammar, is promoted throughout to enable students to look at the way texts are organized functionally. Prerequisite: TRA 500.

**TRA 610 Intercultural Communication and Translation (3-0-3).** Addresses the interface between culture and translation in intercultural communication between Arabic and English. Examines macro and micro culture and the translational strategies used in cross-cultural communication through translation. Prerequisite: approval of program coordinator.

**TRA 630 Practicum (0-0-0).** Provides the opportunity for practical hands on experience in translation and/or interpreting. Involves working within a translation and/or interpreting organization and reporting back weekly

to the practicum supervisor over a period of four weeks. Graded as Pass/Fail. Prerequisite: approval of program coordinator.

**TRA 699 Master's Thesis (6 credits).** Requires students to complete an extended piece of individual research (10,000–12,000 words) on a topic within translation/interpreting studies, including an extended translation (c. 5000 words) and a commentary, chosen in consultation with the thesis faculty supervisor. Emphasis is placed on the theoretical and practical aspects of translating or interpreting. The thesis must be completed within two consecutive academic semesters. An extension may be allowed if a candidate presents acceptable mitigating circumstances. The thesis is defended to the satisfaction of the thesis committee. Graded as Pass/Fail. Prerequisite: approval of program coordinator.

## Independent Study

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

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

**Directed Study (1 to 4 credits).** An investigation under faculty supervision beyond what is offered in existing courses.

Directed study courses are numbered as 596 or 696 courses. The three-letter course prefix reflects the field of study of the course (e.g., directed study courses in TESOL are coded as ELT 596).

For further details on independent study, please refer to Registration in Independent Study Courses in the Academic Policies and Regulations section of this catalog.

## Special Topic Courses

**Special Topic (1 to 4 credits).** Presents a theoretical or practical topic proposed by the faculty beyond what is offered in existing courses. Can be repeated for credit. Prerequisites: topic specific. Lab/tech fee may apply.

Special topic courses are numbered as 594 or 694 courses. The three-letter course prefix reflects the field of study of the course.

Descriptions of particular special topic courses are made available in the college/school offering the course during registration.



# College of Engineering

## CHE

### Chemical Engineering

#### **CHE 510 Transport Phenomena (3-0-3).**

Covers the following topics: differential analysis of momentum; heat and mass transport; models transport processes; and formulation of appropriate boundary conditions, mathematical solutions and interpretation of results. Prerequisite: NGN 500.

#### **CHE 511 Advanced Chemical Engineering Thermodynamics (3-0-3).**

Investigates advanced concepts in thermodynamics. Includes in-depth study of the following topics: fundamental laws of thermodynamics, equations of state, property relations for pure materials and mixtures, phase equilibria and intermolecular forces. Prerequisite: admission to the MSChE or MSME programs.

#### **CHE 512 Advanced Kinetics and Reactor Design (3-0-3).**

Covers the following principles of chemical reaction and reactor analysis and design: non-elementary reaction kinetics, estimation of thermochemical and reaction rate parameters, detailed chemical kinetic modeling, catalysis with particular emphasis on coupled chemical kinetics and transport phenomena, heterogeneous nonisothermal reactor design and real reactors. Prerequisite: admission to the MSChE program.

#### **CHE 594/CHE 694 Special Topic in Chemical Engineering (1 to 4 credits).**

Presents a theoretical or practical topic proposed by the faculty beyond what is offered in existing courses. Can be repeated for credit. Prerequisites: topic specific. Lab/Tech fee may apply.

#### **CHE 596/CHE 696 Independent Study in Chemical Engineering (1 to 4 credits).**

Independent study is the umbrella term used to label two types of independent work: independent course and directed study. For further details, refer to Independent Study later in this section.

#### **CHE 610 Catalysis and Reaction Engineering (3-0-3).**

Introduces the fundamental concepts underlying catalytic processes and their application in reactor design. Covers the following topics: molecular theories of adsorption and surface reactions on catalysts; catalyst characterization techniques; transport in catalysts and shape selective catalysts; and applications in fixed-bed catalytic reactors, fluidized bed reactors and multiphase reactors. Prerequisite: admission to the MSChE program.

#### **CHE 611 Biomedical Engineering and Biotechnology (3-0-3).**

Explores chemical engineering concepts related to the human body. Covers the following topics: body material balances, blood properties and rheology, circulatory dynamics, neuroprosthetics, body heat exchange, body thermoregulation, heat transfer in tumors, pharmacokinetic models, non-invasive imaging, orthopedics, biomaterials, membrane transport, tissue engineering and drug delivery systems. Assumes a basic understanding of physiological functions. Prerequisite/concurrent: NGN 500.

#### **CHE 612 Advanced Process Analysis and Control (3-0-3).**

Covers the following topics: linear multi-input multi-output (MIMO) systems; state-space representation of process dynamic systems; controllability and observability analysis; stability analysis; frequency-domain analysis and system identification; controller synthesis for multivariable process systems; decentralized control, state feedback control, model predictive control and optimal control; digital control systems-Z transforms, discrete time models, closed loop analysis and digital control system implementation; and application of advanced control concepts to chemical process units. Prerequisite: NGN 500; prerequisite/concurrent: NGN 509.

#### **CHE 613 Advanced Materials Science (3-0-3).**

Introduces advanced materials for engineers, emphasizing process-structure-property relations. Covers concepts in materials science, engineering and technology dealing with traditional and advanced materials, surface science and engineering, evaluation and standards. Prerequisite: admission to the MSChE program.

#### **CHE 614 Environmental Engineering (3-0-3).**

Provides a review of fundamentals, applied knowledge and recent advances in environmental engineering. Covers the following topics: causes of environmental pollution; environmental regulations; mass and energy balance for environmental systems under steady state and transient conditions; and contaminant transport in air, water and solids. Focuses on microbiology and reaction kinetics related to the environment and the application of environmental principles to water and wastewater treatment, air pollution control and solid waste management. Prerequisite: admission to the MSChE program.

#### **CHE 695 Seminar (1-0-0).**

Introduces research methodologies. Explores the planning and realization of research projects. Examines current research issues in engineering using case studies that emphasize the utilization of applied research in designing engineering systems. Graded as Pass/Fail. Prerequisite: admission to the MSChE program.

#### **CHE 698 Professional Project (3 credits).**

Requires an approved professional project on selected area of chemical engineering for completion of the MS degree. Includes development of the project concept, investigation of needs, initial data collection and assembly of written and field materials necessary to conduct a professional project, as well as exploration of alternative means to conduct the project. Requires a report and final presentation to the examining committee. Graded as Pass/Fail. Prerequisite: approval of department head; prerequisite/concurrent: CHE 695.

#### **CHE 699 Master's Thesis (9 credits).**

Requires students to complete original research work in the field of study. Requires the thesis to be completed under the supervision of a faculty member serving as thesis advisor, and a final defense to the examining committee. Graded as Pass/Fail. Prerequisite: approval of department head; prerequisite/concurrent: CHE 695.

## COE

### Computer Engineering

#### **COE 530 Advanced Computer Networks (3-0-3).**

Focuses on advanced topics in computer networking and performance modeling. Covers the following: performance modeling and simulation, congestion control and quality of service (QoS) techniques, overview of computer networks security, and recent advances in computer networks. Prerequisite: admission to the MSCoE program.

#### **COE 531 Advanced Software Engineering (3-0-3).**

Covers fundamental principles of software engineering with emphasis on methodologies for requirements engineering, design, and verification and validation. Explores recent research trends in software engineering. Prerequisite: admission to the MSCoE program.

#### **COE 532 Advanced Embedded Systems and Industrial Automation (3-0-3).**

Covers the following topics:



embedded systems hardware, advanced embedded systems programming and interface, serial communications and control area networks, real-time operations of embedded systems, supervisory control and data acquisition (SCADA) systems, distributed control systems (DCS) and embedded systems applications. Prerequisite: admission to the MSCoE program.

**COE 533 Advanced Computer Architecture (3-0-3).** Covers techniques of quantitative analysis and evaluation of modern computing systems. Emphasizes the major component subsystems of high-performance computers: pipelining, instruction level parallelism, memory hierarchies, input/output and network-oriented interconnections. Prerequisite: admission to the MSCoE program.

**COE 594/COE 694 Special Topic in Computer Engineering (1 to 4 credits).** Presents a theoretical or practical topic proposed by the faculty beyond what is offered in existing courses. Can be repeated for credit. Prerequisites: topic specific. Lab/Tech fee may apply.

**COE 596/COE 696 Independent Study in Computer Engineering (1 to 4 credits).** Independent study is the umbrella term used to label two types of independent work: independent course and directed study. For further details, refer to Independent Study later in this section.

**COE 630 Wireless Networks (3-0-3).** Explores advanced concepts in wireless networking and mobile communications. Covers the following topics: antennas and multipath propagation, wireless propagation modeling, multiple access, spread spectrum, modulation, coding and error control, orthogonal frequency division multiplexing (OFDM), cellular wireless networks, wireless local area networks (LANs), mobile Internet Protocol (IP), ad hoc networks, Bluetooth, transmission control protocol (TCP) over wireless, Worldwide Interoperability for Microwave Access (WiMAX), satellite networks, security issues in wireless networks and sensor networks. Prerequisite: admission to the MSCoE program.

**COE 632 Advanced Database Systems (3-0-3).** Covers the following advanced topics in database systems: file structures, indexing techniques, query processing and optimization, concurrency control and backup and recovery Extensible Markup Language (XML) databases and languages, and mobile databases and data mining. Prerequisite: admission to the MSCoE program.

**COE 633 Advanced Internet Computing (3-0-3).** Covers advanced

topics in Internet computing including search engines; client-side and web-server technologies; web-crawlers, information retrieval and filtering methods; Internet-specific database technologies; web-services architectures; and Internet of Things. Prerequisite: admission to the MSCoE program.

**COE 634 Computer-Aided Design and Optimization of Digital Systems (3-0-3).** Covers the following topics in computer-aided design of very-large-scale integration (VLSI) circuits: functional verification; logic synthesis; verification of combinational and sequential circuits; technology mapping; and logic simulation, optimization and testing. Prerequisite: COE 533.

**COE 635 Optical Networks (3-0-3).** Covers the following advanced concepts in optical communications and networking: single-mode and multi-mode fibers, fiber loss and dispersion, fiber nonlinearities, lasers and optical transmitters, photo-detectors and optical receivers, single-channel system design, synchronous optical network (SONET)/synchronous digital hierarchy (SDH) networks, Wavelength-Division Multiplexing (WDM) components, WDM network design issues, wavelength routing and assignment, protection and restoration in optical networks, and control and management of optical networks. Prerequisite: admission to the MSCoE program.

**COE 636 Advanced Multicore Computing (3-0-3).** Covers software development on multicore systems including CPUs, GPUs and hybrid systems. Covers performance metrics and performance prediction of parallel algorithms. Examines models of parallel computation and associated software architectures such as master-worker, pipelining, data-flow and streaming. Studies advanced load-balancing mathematical models and algorithms. Uses selected applications as case-studies as well as state-of-the-art software tools such as CUDA and OpenCL. Prerequisite: admission to the MSCoE program.

**COE 695 Seminar (1-0-0).** Introduces research methodologies. Explores the planning and realization of research projects. Examines current research issues in engineering using case studies that emphasize the utilization of applied research in designing engineering systems. Graded as Pass/Fail. Prerequisite: admission to the MSCoE program.

**COE 698 Professional Project (3 credits).** Requires an approved professional project on selected area of computer engineering for completion of the MS degree. Includes development

of the project concept, investigation of needs, initial data collection and assembly of written and field materials necessary to conduct a professional project, as well as exploration of alternative means to conduct the project. Requires a report and final presentation to the examining committee. Graded as Pass/Fail. Prerequisite: approval of department head; prerequisite/concurrent: COE 695.

**COE 699 Master's Thesis (9 credits).** Requires students to complete original research work in the field of study. Requires the thesis to be completed under the supervision of a faculty member serving as thesis advisor, and a final defense to the examining committee. Graded as Pass/Fail. Prerequisite: approval of department head; prerequisite/concurrent: COE 695.

## CVE Civil Engineering

**CVE 520 Advanced Construction Materials and Methods (3-0-3).** Covers emerging construction materials that impact new construction and repair of existing infrastructure. Introduces material design concepts related to the development of advanced composites through combinations of new materials. Introduces advanced concrete materials, fiber-reinforced concrete and advanced steel applications. Covers principles and applications of building and heavy construction methods including safe formwork. Focuses on sustainable materials and methods in construction. Prerequisite: admission to the MSCE program.

**CVE 521 Finite Element Method (3-0-3).** Introduces the theory and application of modern structural analysis. Emphasizes finite element formulations for truss, frame, plane stress, plane strain and axisymmetric problems. Covers variational principles and isoparametric formulation. Introduces fundamentals of nonlinear analysis concepts. Covers computer modeling and practical analysis of large structural systems. Prerequisite: admission to the MSCE or MSME programs.

**CVE 522 Advanced Water Resources Engineering (3-0-3).** Presents advanced hydrologic and hydraulic principles in planning, modeling and designing storage, irrigation, drainage, flood control and related water resource facilities. Covers the following topics: unsteady and non-uniform flow, conveyance channels and spillways, control and diversion structures, outlet works, energy dissipation, hydraulic machinery, flow measurements and reservoir hydraulics.

Employs applicable case studies.  
Prerequisite: admission to the MSCE program.

**CVE 523 Advanced Transportation Systems (3-0-3).** Focuses on transportation systems modeling, simulation, analysis and evaluation techniques. Covers transportation systems operations, traffic signal systems design and optimization. Includes intelligent transportation systems (ITS) concepts and applications. Uses available software packages to evaluate transportation systems performance and ITS applications. Prerequisite: admission to the MSCE program.

**CVE 551 Wastewater Treatment (3-0-3).** Covers wastewater characterization; different stages in wastewater treatment; preliminary, primary, secondary and tertiary treatment of wastewater; sludge treatment and disposal; small wastewater treatment systems; ecological wastewater treatment systems; and site visits to wastewater treatment plant(s). Prerequisite: admission to the MSCE program.

**CVE 572 Satellite Remote Sensing (3-0-3).** Covers the concepts of satellite remote sensing, spectral reflectance, electromagnetic radiation, aerial photography, image interpretation and analysis, image enhancement, land observation satellite systems, filtering, image rectification, land use/land cover mapping, and examples of case studies in civil engineering and urban planning. Prerequisite: admission to the MSCE or MUP programs.

**CVE 594/CVE 694 Special Topic in Civil Engineering (1 to 4 credits).** Presents a theoretical or practical topic proposed by the faculty beyond what is offered in existing courses. Can be repeated for credit. Prerequisites: topic specific. Lab/Tech fee may apply.

**CVE 596/CVE 696 Independent Study in Civil Engineering (1 to 4 credits).** Independent study is the umbrella term used to label two types of independent work: independent course and directed study. For further details, refer to Independent Study later in this section.

**CVE 620 Advanced Construction Planning and Control (3-0-3).** Covers the following topics: application of advanced planning and control techniques critical to the success of construction projects, advanced resource allocation and leveling, time-cost optimization, project monitoring, updating and control, stochastic scheduling, contractual implications of construction schedules, analysis of time-related change orders and delays,

schedule diagnostics, and advanced use of construction planning and scheduling software. Employs case studies from the construction industry. Prerequisite: admission to the MSCE program.

**CVE 621 Analysis and Design of Tall Buildings (3-0-3).** Introduces design strategies for tall buildings. Covers the following topics: selection of the structural systems for tall buildings; modeling of gravity, wind and earthquake loads using relevant codes; structural modeling and static and dynamic analysis of tall buildings; design of structural elements and effects of creep, shrinkage and temperature; and P-Delta effects and instability of tall buildings. Emphasizes the use of computers in analysis and design of tall buildings. Prerequisite: admission to the MSCE program.

**CVE 622 Physical and Chemical Processes in Environmental Engineering (3-0-3).** Explores advanced analysis and design methods for various environmental engineering problems in water treatment, wastewater treatment, air pollution control and water quality management. Covers the following topics: materials transport, reaction kinetics, reactor modeling, separation processes, disinfection and process optimization. Prerequisite: admission to the MSCE program.

**CVE 623 Advanced Transportation Planning Techniques (3-0-3).** Presents an overview of both theoretical and applied issues in planning transportation systems. Focuses on everyday planning-oriented problems associated with development and project evaluation issues and techniques with emphasis on the development, calibration and validation of master transportation plans and traffic impact study analysis. Covers engineering economics and procedures for traffic impact studies. Prerequisite: admission to the MSCE program.

**CVE 624 Advanced Geotechnical Engineering (3-0-3).** Covers site investigation with an emphasis on advanced site testing, and shallow and deep foundations. Includes footing and rafting for difficult subsoil conditions, excavation support systems, groundwater control, slope stability, soil improvement and construction monitoring techniques. Explores offshore geotechnical engineering and elements of geotechnical earthquake engineering. Prerequisite: admission to the MSCE program.

**CVE 625 Highway Bridge Design (3-0-3).** Introduces highway bridge analysis, design and evaluation based on the American Association of State Highway and Transportation Officials (AASHTO) Load and Resistance Factor

Design (LRFD) Bridge Design Specifications. Covers the following topics: types of bridges, highway bridge loading, bridge analysis, deck slabs, composite steel bridge design, pre-stressed concrete girders, substructure design and bridge rating. Prerequisite: admission to the MSCE program.

**CVE 651 Wastewater Treatment Process Control (3-0-3).** Presents bacterial growth kinetics in wastewater, biochemical oxygen demand (BOD) tests for wastewater treatment, design and control of activated sludge process, determination of wastewater treatment process performance criteria and monitoring methods, and aeration in water. Prerequisite: admission to the MSCE program.

**CVE 695 Seminar (1-0-0).** Introduces research methodologies. Explores the planning and realization of research projects. Examines current research issues in engineering using case studies that emphasize the utilization of applied research in designing engineering systems. Graded as Pass/Fail. Prerequisite: admission to the MSCE program.

**CVE 698 Professional Project (3 credits).** Requires an approved professional project on selected area of civil engineering for completion of the MS degree. Includes development of the project concept, investigation of needs, initial data collection and assembly of written and field materials necessary to conduct a professional project, as well as exploration of alternative means to conduct the project. Requires a report and final presentation to the examining committee. Graded as Pass/Fail. Prerequisite: approval of department head; prerequisite/concurrent: CVE 695.

**CVE 699 Master's Thesis (9 credits).** Requires students to complete original research work in the field of study. Requires the thesis to be completed under the supervision of a faculty member serving as thesis advisor, and a final defense to the examining committee. Graded as Pass/Fail. Prerequisite: approval of department head; prerequisite/concurrent: CVE 695.

## ELE Electrical Engineering

**ELE 540 Principles of Digital Communications (3-0-3).** Reviews random processes. Covers representation of bandpass signals and systems, baseband and bandpass digital modulation schemes, optimum receiver design and performance analysis, channel capacity, and block

and convolutional channel coding and decoding schemes. Prerequisite: approval of department head.

**ELE 542 Applied Electromagnetics (3-0-3).** Covers the following topics: Maxwell's equations; electromagnetic boundary conditions; potentials and the representation of electromagnetic fields; theorems of field calculations (uniqueness, duality, equivalence, reciprocity and Babinet's principles); plane, cylindrical and spherical waves; polarization properties of waves; and waveguides and elementary antennas. Prerequisite: admission to the MSEE program.

**ELE 543 Analog Microelectronics (3-0-3).** Covers analysis and design of advanced electronic circuits. Explores topics such as electronic device modeling, processing and layout, current mirrors, noise analysis, voltage reference and regulators, Opamp design, OTAs and filter circuits. Prerequisite: admission to the MSEE program.

**ELE 544 Advanced Signal Processing (3-0-3).** Explores topics such as signal representation and system response, signal sampling and reconstruction, convolution, transfer function and system characteristics, digital filter design and realization, adaptive filters, spectral analysis, multirate signal processing, time-frequency analysis and wavelets. Prerequisite: admission to the MSEE program.

**ELE 545 Power System Operation and Control (3-0-3).** Introduces economic operation, and unit commitment of power systems. Covers modeling of system components and control equipment, automatic control of generation and frequency regulation, and aspects of interconnected operation. Prerequisite: admission to the MSEE program.

**ELE 546 Advanced Power Electronics (3-0-3).** Covers operation and modeling of power electronic devices, DC/DC converters, single phase and three phase inverters, different type of PWM techniques, theory of space transformation, space vector representation and space vector PWM inverters. Includes DSP based control and implementation of power converters and power electronics applications in renewable energy systems. Prerequisite: admission to the MSEE program.

**ELE 594/ELE 694 Special Topic in Electrical Engineering (1 to 4 credits).** Presents a theoretical or practical topic proposed by the faculty beyond what is offered in existing courses. Can be repeated for credit.

Prerequisites: topic specific. Lab/Tech fee may apply.

**ELE 596/ELE 696 Independent Study in Electrical Engineering (1 to 4 credits).** Independent study is the umbrella term used to label two types of independent work: independent course and directed study. For further details, refer to Independent Study later in this section.

**ELE 640 Bioelectric Phenomena (3-0-3).** Provides an overview of the following topics: electrical sources and electric fields, membrane biophysics, action potentials, volume conductor fields, electrophysiology of the heart, electric and magnetic lead fields, electroencephalography (EEG) and magnetoencephalography (MEG). Prerequisite/concurrent: NGN 500.

**ELE 641 Advanced Microwave Engineering (3-0-3).** Covers transmission-line theory; microstrip and coplanar lines; S-parameters; signal-flow graphs; matching networks; microwave devices; design, fabrication and measurements of microwave-integrated circuits using CAD tools; radar equation; resolution techniques; calibration; scatterometers; and scattering models. Prerequisite/concurrent: NGN 500.

**ELE 642 Digital and Wireless Communications (3-0-3).** Covers the following topics: signal design for communications over band-limited channels, optimum and suboptimal receiver structures for band-limited channels, adaptive equalization, communications over mobile radio channels with fading and mitigation techniques against channel fading. Prerequisite: ELE 540.

**ELE 643 Image and Video Processing (3-0-3).** Provides an overview of the principles and techniques of digital image processing in applications related to digital imaging system design and analysis. Covers the following topics: analysis and implementation of image and video processing algorithms and standards, methods and filters for image enhancement and restorations, source and transform coding techniques for lossless and lossy compression, and basic elements of object recognition systems. Prerequisite/concurrent: NGN 500.

**ELE 644 Dynamics and Control of Electrical Drives (3-0-3).** Covers dynamic models of DC and AC machines, torque and speed control of DC motors, PWM inverters, scalar control, field oriented control, and direct flux/torque control of induction motors. Prerequisite: admission to the MSEE program.

**ELE 645 High Voltage Engineering (3-0-3).** Covers the following topics: destructive and non-destructive testing of power system components; breakdown mechanism of gas, liquid and solid insulating materials; generation and measurement of high-voltage AC; and DC and impulse voltages and non-destructive testing such as surface and internal discharges, capacitance and loss factor. Prerequisite: admission to the MSEE program.

**ELE 646 Radio Frequency Integrated Circuits (3-0-3).** Covers design of advanced radio frequency integrated circuits as it applies to contemporary electronic systems. Includes RFIC systems and architectures, low-voltage MOS, transceiver complex circuits, RF signal processing, RF power amplifiers and linearization, PLL topologies, frequency synthesizers, phase noise analysis, layout considerations, packaging of RF circuits and design case studies. Use of software tools and analytical techniques for circuit design and simulations. Prerequisite: admission to the MSEE program.

**ELE 647 Digital Protection of Power Systems (3-0-3).** Covers digital relay hardware, phasor computations, frequency estimation techniques, digital protection algorithms, fault location techniques, signal processing and artificial intelligence for relays, relay testing, relay modeling and simulation. Prerequisite: admission to the MSEE program.

**ELE 648 Pattern Classification (3-0-3).** Covers description of the elements of pattern recognition systems, Bayesian decision theory and parameter estimation, maximum likelihood estimation, linear discriminant analysis, dimensionality reduction techniques, neural networks, clustering techniques, and Gaussian Mixture Models. Provides a description of decision trees, support vector machines and Hidden Markov Models. Prerequisite: approval of department head.

**ELE 695 Seminar (1-0-0).** Introduces research methodologies. Explores the planning and realization of research projects. Examines current research issues in engineering using case studies that emphasize the utilization of applied research in designing engineering systems. Graded as Pass/Fail. Prerequisite: admission to the MSEE program.

**ELE 698 Professional Project (3 credits).** Requires an approved professional project on selected area of electrical engineering for completion of the MS degree. Includes development of the project concept, investigation of

needs, initial data collection and assembly of written and field materials necessary to conduct a professional project, as well as exploration of alternative means to conduct the project. Requires a report and final presentation to the examining committee. Graded as Pass/Fail. Prerequisite: approval of department head; prerequisite/concurrent: ELE 695.

**ELE 699 Master's Thesis (9 credits).**

Requires students to complete original research work in the field of study. Requires the thesis to be completed under the supervision of a faculty member serving as thesis examining, and a final defense to the advisory committee. Graded as Pass/Fail. Prerequisite: approval of department head; prerequisite/concurrent: ELE 695.

## ESM Engineering Systems Management

**ESM 515 Fundamentals of Statistics and Engineering Economy (3-0-3).**

Covers concepts of statistics and probability including descriptive statistics, statistical inference, estimation theory, elementary probability theory, simple regression, and experimental design. Introduces economic decision making with discounted cash flows. Includes time value of money and alternative economic evaluation methods. Use of statistical software to solve assigned problems. Prerequisite: admission to the MSES program.

**ESM 520 Management for Engineers (3-0-3).**

Explores a full range of integrated topics for individuals in both public and private sector organizations who coordinate and manage engineering projects, personnel, resources and systems. Covers human resources, communication skills, leadership styles, team building, the basics of marketing management and financial management, and the management needs in multicultural and multinational environments. Integrates the core management principles with engineering experiences using case studies and applications. Prerequisite: admission to the MSES program.

**ESM 532 Introduction to Applied Operations Research (3-0-3).**

(Formerly ESM 632). Covers formulation of mathematical models and explores solution techniques such as linear programming, sensitivity and cost analysis, simulation and stochastic modeling. Applications include transportation and networks, inventory control, and production planning and control. Team project is required. Prerequisite/concurrent: ESM 515.

**ESM 555 Information Technology Management (3-0-3).**

Provides an overview of the important managerial and strategic issues associated with using IT in today's networked organization. Covers IS/IT strategy, IT/business strategy alignment, IT-enabled business models, IT governance, managing integration with partners, planning and implementing new systems in organizations, and managing IT outsourcing. Previous knowledge of statistics is required. Includes case studies and team projects. Prerequisite: admission to the MSES program.

**ESM 570 Project Management (3-0-3).**

Covers the elements of project management critical to the success of engineering projects: project management framework, strategic management and project selection, scope management, time management, cost management, risk management, and project monitoring and control. Integrates and clarifies the principles and tools through case studies from a variety of disciplines. Prerequisite/concurrent: ESM 515 or approval of program director.

**ESM 575 Advanced Engineering Economy (3-0-3).**

Covers the theory and application of advanced engineering economy principles and methods. Studies the effects of inflation, depreciation and taxes, cost estimation, sensitivity analysis, risk and uncertainty, capital budgeting, multi-attribute decision making, advanced asset replacement analysis and real option analysis. Includes case studies and a term project related to the topic. Prerequisite: ESM 515.

**ESM 580 IT Project Management (3-0-3).**

Provides an overview and explores concepts of IT project management. Includes the following topics: IT project planning and its relationship to CMMI levels, IT project risk management and configuration management techniques for IT projects. Discusses prevailing alternative life-cycle models such as RUP/Agile/SCRUM and their relationship to PMBOK and CPM. Covers IT project estimation techniques such as COCOMO. Includes case studies in IT project management. Prerequisite: admission to the MSES program.

**ESM 594/ESM 694 Special Topic in Engineering Systems Management (1 to 4 credits).**

Presents a theoretical or practical topic proposed by the faculty beyond what is offered in existing courses. Can be repeated for credit. Prerequisites: topic specific. Lab/Tech fee may apply.

**ESM 596/ESM 696 Independent Study in Engineering Systems Management (1 to 4 credits).**

Independent study is the umbrella term used to label two types of independent work: independent course and directed study. For further details, refer to Independent Study later in this section.

**ESM 600 Research Methodology (3-0-3).**

Introduces the methodology of scientific research. Covers topics such as internal and external construct validity and reliability issues in research; normative, prescriptive and descriptive theories; process and variance approaches to theory formulation; introduction to quasi-experimental design and case study methodologies; practical strategies for literature review; APA and IEEE style guidelines; and presenting research results and conclusions. Includes invited speakers from industry and business. Prerequisites: ESM 515 and ESM 520.

**ESM 612 Advanced Information Systems Management (3-0-3).**

Introduces topics in IT services management, resource planning and governance. Covers IT value-chain and related processes. Discusses IT portfolio management and maturity models. Discusses enterprise architectures and outsourcing strategies. Includes an overview of CMMI, CoBIT and ITIL. Prerequisite: ESM 555.

**ESM 614 Communication and Network Management (3-0-3).**

Addresses the key technological and managerial issues related to the design, operation and maintenance of computer networks and the enterprise telecommunication system. Provides an overview of telecom technologies, including telecom architectures and protocols, voice technologies, LANs, WANs, cellular and mobile networks, satellite systems and Internet/intranet architectures. Covers feasibility analysis, service level agreements, service quality monitoring, network planning, network management, survivability, telecom equipment procurement, contracting, outsourcing, technology forecasting and replacement, telecom investment decisions, legal and regulatory issues in telecommunications, and performance modeling and monitoring tools. Includes case studies related to the topic. Prerequisite: ESM 555.

**ESM 620 Security Management (3-0-3).**

Provides a solid background in the administration and management of security for computer-based systems. Introduces the management of security, including managing identity, IT threats, vulnerabilities and trust. Covers planning for security and contingencies, the development of security programs

and legal and ethical issues in security. Prerequisite: ESM 555.

**ESM 624 Knowledge Management (3-0-3).** Introduces the roots of knowledge and knowledge management (KM); theories/definitions of knowledge; theories, applications, tools, and practices of KM; the Knowledge Management Life-Cycle Framework and Models; significant issues in KM (e.g., best practices, culture, economics, strategy, intellectual capital and sustainable innovation). Includes case studies related to the topic. Prerequisite: ESM 555.

**ESM 630 Quality Engineering and Management (3-0-3).** Covers the techniques and applications of quality control and management. Includes total quality management, quality award models, service quality, statistical process control charts, process capability analysis, and six sigma. Prerequisite: ESM 515.

**ESM 634 Advanced Modeling and Simulation (3-0-3).** (Formerly ESM 540). Covers advanced principles associated with systems modeling and simulation using contemporary software tools. Includes topics such as problem formulation, queuing theory, discrete event simulation modeling, and analysis of alternatives and selection of the optimum solution. Prerequisite: ESM 532.

**ESM 636 Human Resources Management (3-0-3).** Covers human resource planning processes, tools and techniques, job specification and methods of job analysis. Describes the requirements and ethical context of HRM methods of recruitment, evaluation, career training and development programs, salary systems and employee benefits, HR information systems and international HR issues. Integrates HR management practices and methodologies with engineering experiences. Prerequisite: ESM 520.

**ESM 638 Decision Analysis (3-0-3).** Covers the theory and practice of analyzing decisions in the public and private sectors. Covers multiple objectives, influence diagrams, decision trees, sensitivity analysis, probability assessment, multi-attribute utility and human biases. Describes practical applications through real-world systems model building. Uses decision analysis software and spreadsheets to solve real-life problems through case studies. Prerequisite: ESM 515.

**ESM 640 Supply Chain Management (3-0-3).** Explores key issues related to the design, planning and operation of supply chains. Includes topics such as supply chain structure, supply chain performance metrics, network design,

facility location in a supply chain, aggregate planning, planning and managing inventory in a supply chain, transportation in a supply chain, pricing and revenue management. Prerequisite: ESM 532.

**ESM 642 Business Process Management (3-0-3).** Introduces the important issues in alignment of business internal activities and resources with external requirements through process design and process improvements. Includes process types and hierarchies, workflow management systems, incremental process improvement, process re-engineering and benchmarking. Covers implementation and change management. Prerequisite: ESM 520.

**ESM 644 Financial Management for Engineers (3-0-3).** Provides engineers with financial management knowledge necessary for value-added decision making. Covers structure and analysis of financial statements, corporate valuation, working capital management, capital structure and budget, securities analysis and financial markets, and financial forecasting. Includes practical financial management case studies in technical organizations. Prerequisites: ESM 575 and admission to the MSES program.

**ESM 650 Construction Management (3-0-3).** Covers both the fundamental concepts and contemporary applications of construction management. Discusses elements of the construction project life cycle, project stakeholders, project administration and coordination, and construction delivery methods. Provides the student with the opportunity to simulate real-life construction management problems and apply acquired skills in their solution through case studies and team projects. Prerequisites: ESM 570 and admission to the MSES program.

**ESM 652 Construction Planning and Scheduling (3-0-3).** Covers the application of planning and scheduling techniques critical to the success of construction projects, critical path method, resource allocation and leveling, time-cost optimization, project monitoring, updating and control, linear scheduling, stochastic scheduling, contractual implications of construction schedules, analysis of time-related change orders and delays, schedule diagnostics, and use of construction planning and scheduling software. Includes case studies from the construction industry. Prerequisites: ESM 570 and admission to the MSES program.

**ESM 660 Construction Contracts Law (3-0-3).** Introduces construction contracts and their administration with special emphasis for engineering.

Covers construction claims, matters of time, delays and litigation. Includes the following professional topics: analysis of specific issues concerning contracts, subcontracting, tort claims, insurance and bonds. Covers strategies for avoiding or terminating litigation, methods of dispute resolution, key aspects of prosecuting and defending claims, the role of dispute review boards and their use, procedures of claims presentation, conducting cost evaluation of claims and methods of international construction contracts. Covers actual legal cases involving construction and law. Prerequisites: ESM 570 and admission to the MSES program.

**ESM 668 Construction Safety Management (3-0-3).** Covers safety and health concerns in the construction worksite. Concentrates on safety process development and management in construction. Provides the student with a comprehensive background in worksite hazard assessment, safety and health program development, and risk management in the construction industry. Prerequisites: ESM 570 and admission to the MSES program.

**ESM 685 Capstone Course in Engineering Management (3-0-3).** Presents students with an opportunity to showcase the theory and the practical knowledge accumulated throughout their studies. The general intent of the engineering capstone is to demonstrate students' knowledge of the integrative aspects of ESM tools through rigorous written and oral communication of case analysis and a team project. Uses case studies to demonstrate the integrative aspects of ESM applications. Prerequisite: ESM 600.

**ESM 686 Capstone Course in Construction Management (3-0-3).** Presents students with an opportunity to showcase the theory and the practical knowledge accumulated throughout their studies. The general intent of the engineering capstone is to demonstrate students' knowledge of the integrative aspects of ESM tools through rigorous written and oral communication of case analysis and a team project. Uses case studies to demonstrate the integrative aspects of ESM applications. Prerequisite: ESM 600.

**ESM 687 Capstone Course in Information Technology Management (3-0-3).** Presents students with an opportunity to showcase the theory and the practical knowledge accumulated throughout their studies. The general intent of the engineering capstone is to demonstrate students' knowledge of the integrative aspects of ESM tools through rigorous

written and oral communication of case analysis and a team project. Uses case studies to demonstrate the integrative aspects of ESM applications.  
Prerequisite: ESM 600.

**ESM 698 Professional Project (6 credits).** Requires completion of an approved professional project on a selected area of engineering management and systems engineering. Requires students to demonstrate the ability to integrate the information and the skills accumulated in their study plan through rigorous written and oral communication. A final report and presentation must be submitted to the examining committee. Graded as Pass/Fail.

**ESM 699 Master's Thesis (6 credits).** Requires students to complete original research work in a multidisciplinary area in engineering systems management. Requires students to demonstrate the ability to integrate the information and the skills accumulated in their study plan through rigorous written and oral communication. The thesis is completed under the supervision of a faculty member serving as the thesis advisor, and a final defense to the examining committee is required. Graded as Pass/Fail.

## MCE Mechanical Engineering

**MCE 550 Mechanical Systems Design (3-0-3).** Introduces the design methodology applicable to mechanical systems. Includes the following topics: materials selection; specialized design methods such as design for manufacture, design for reliability and life cycle design; applications of optimization techniques; and finite element analysis to solve typical mechanical engineering problem. Prerequisite: admission to the MSME program.

**MCE 552 Modeling and Simulation of Mechanical Systems (3-0-3).** Addresses the importance of modeling and simulation and the interface between computer models and actual processes. Covers the formulation of systems of equations representing linear and non-linear mechanical systems behavior, and black box modeling of mechanical systems such as artificial intelligence schemes. Employs commercial software applied to the different fields of mechanical engineering. Prerequisite: admission to the MSME program.

**MCE 553 Advanced Thermodynamics (3-0-3).** Explores advanced thermodynamics used in engineering applications. Covers phase

transition and stability, multi-component and multi-phase systems, chemical and kinetics. Explains the essential concepts of quantum mechanics, classical statistical mechanics, potentials of statistical thermodynamics, micro-states and macro-states, entropy-generation minimization and the equilibrium particle distribution, corrected Maxwell-Boltzmann statistics, ideal monatomic and diatomic gases, imperfect gases, quantum analysis of internal energy modes, and statistical modeling of thermodynamics. Prerequisite: admission to the MSME program.

**MCE 554 Advanced Fluid Dynamics (3-0-3).** (Formerly MCE 654). Examines the conservation equations for viscous fluids and Navier-Stokes equations. Covers advanced topics such as Stokesian flow, boundary layer concept, laminar boundary layer equations and methods of solutions, theory of stability of laminar flows and introduction to turbulent flow. Prerequisite: admission to the MSME program.

**MCE 594/MCE 694 Special Topic in Mechanical Engineering (1 to 4 credits).** Presents a theoretical or practical topic proposed by the faculty beyond what is offered in existing courses. Can be repeated for credit. Prerequisites: topic specific. Lab/Tech fee may apply.

**MCE 596/MCE 696 Independent Study in Mechanical Engineering (1 to 4 credits).** Independent study is the umbrella term used to label two types of independent work: independent course and directed study. For further details, refer to Independent Study later in this section.

**MCE 650 Advanced Machine Dynamics (3-0-3).** Covers the following topics: kinematics and kinetics of three-dimensional rigid bodies and multibody systems, momentum and energy methods, and holonomic and non-holonomic constraints. Introduces Hamilton's principle for holonomic systems, Lagrange's equations, relativistic dynamics, central force motion, Euler equations of motion, Hamilton's equations and phase space, and the Hamilton-Jacobi equation. Prerequisite: MCE 550.

**MCE 651 Advanced Engineering Materials (3-0-3).** Explores advanced materials used in engineering applications. Covers the following topics: fatigue, fracture, experimental techniques, nondestructive evaluation, inelastic behavior, and the effect of processing and environmental conditions on mechanical properties. Prerequisite: admission to the MSME program.

**MCE 652 Advanced Topics in Manufacturing (3-0-3).** Provides an in-depth study of manufacturing processes. Covers a quantitative analysis of metal cutting and analyzes the relationship between production performance and crucial process parameters. Introduces contemporary manufacturing technologies. Prerequisite: admission to the MSME program.

**MCE 653 HVAC Systems Design (3-0-3).** Aims at developing a solid background in the practical design and analysis of HVAC systems. Covers building load using transfer functions and energy estimation methods, renewable energy technologies (solar, wind, geothermal, photovoltaics) and their applications on HVAC systems, solar thermal energy and wind energy conversion systems, passive design strategies, HVAC system controls, thermal energy storage, absorption chillers, energy efficiency for buildings, and design of large commercial and industrial HVAC systems w/without renewable energy.

**MCE 655 Advanced Measurements and Design of Experiments (3-0-3).** Explores advanced experimental methods used in mechanical engineering systems. Covers the following topics: advanced measurement techniques in fluids, solids and motion variables; instrumentation; data acquisition; error and noise reduction; experimental data processing; error analysis; and design of experiments. Prerequisite: MCE 552.

**MCE 695 Seminar (1-0-0).** Introduces research methodologies. Explores the planning and realization of research projects. Examines current research issues in engineering using case studies that emphasize the utilization of applied research in designing engineering systems. Graded as Pass/Fail. Prerequisite: admission to the MSME program.

**MCE 698 Professional Project (3 credits).** Requires an approved professional project on selected area of mechanical engineering for completion of the MS degree. Includes development of the project concept, investigation of needs, initial data collection and assembly of written and field materials necessary to conduct a professional project, as well as exploration of alternative means to conduct the project. Requires a report and final presentation to the examining committee. Graded as Pass/Fail. Prerequisite: approval of department head; prerequisite/concurrent: MCE 695.

**MCE 699 Master's Thesis (9 credits).** Requires students to complete original research work in the

field of study. Requires the thesis to be completed under the supervision of a faculty member serving as thesis advisor, and a final defense to the examining committee. Graded as Pass/Fail. Prerequisite: approval of department head; prerequisite/concurrent: MCE 695.

## MTR Mechatronics Engineering

**MTR 501 Introduction to Mechatronics (2-3-3).** Covers applied mechanical and electrical engineering principles used in mechatronics products. Introduces the modeling and analysis of electromechanical systems, hydraulic systems, signal processing and conditioning, power amplifiers and switches, data communication systems. Develops design skills in system integration using mechanisms, electronic devices, CAD tools, and information technology in order to create, test and verify mechatronics systems. Includes laboratory projects. Graded as Pass/Fail. Prerequisite: admission to the MSMTR program.

**MTR 520 Embedded Systems for Mechatronics (2-3-3).** Explores microprocessor hardware and software modules. Covers microcontroller hardware and software architectures, microcontrollers programming and interface with real-time mechatronics systems, data acquisition unit and designing stand-alone embedded systems for mechatronics products. Includes case studies and course projects. Prerequisite/concurrent: MTR 501.

**MTR 530 Modeling and Simulation of Dynamic Systems (3-0-3).** Introduces multi-domain systems. Covers mechanical, thermal, fluid, electrical, electronic and electromechanical system dynamics. Emphasizes modeling and simulation of hybrid systems using computer-aided tools. Prerequisite/concurrent: NGN 500.

**MTR 540 Advanced Control Systems (3-0-3).** Covers state variable models, design of control systems in state space, full state observers, reduced order observers, digital compensator design LQ regulator and LQG theory, servomechanism design, and design of continuous and digital control systems using modern analytic and computer design tools. Prerequisite/concurrent: MTR 530.

**MTR 594/MTR 694 Special Topic in Mechatronics Engineering (1 to 4 credits).** Presents a theoretical or practical topic proposed by the faculty beyond what is offered in existing courses. Can be repeated for credit.

Prerequisites: topic specific. Lab/Tech fee may apply.

**MTR 596/MTR 696 Independent Study in Mechatronics Engineering (1 to 4 credits).** Independent study is the umbrella term used to label two types of independent work: independent course and directed study. For further details, refer to Independent Study later in this section.

**MTR 605 Digital Signal Processing (3-0-3).** Covers signal representation and system response, signal sampling and reconstruction, convolution, transfer function and system characteristics, digital filter design and realization, adaptive filters, spectral analysis, multirate signal processing, and time-frequency analysis and wavelets. Prerequisites: MTR 501 and NGN 500.

**MTR 610 Automated Manufacturing Systems (3-0-3).** Describes and demonstrates automated machine tools and machining cells. Covers machining center configuration and operation, machine tool controller, machining code generation, in-process sensing and control, cell controllers and system simulation. Prerequisite: NGN 500.

**MTR 615 Artificial Intelligent Systems for Mechatronics (3-0-3).** Covers artificial intelligent systems for mechatronics engineering, concepts of expert and fuzzy logic decision-making systems, fuzzy logic modeling and control, artificial neural networks, genetic algorithms, decision trees and applications. Prerequisite: NGN 500.

**MTR 630 Real-Time Robotics Systems (2-3-3).** Covers components of robot systems, analysis and design of modern robotic and industrial control systems, hardware and software, computational methods and techniques used in vision-based robotics, real-time embedded control, optimization techniques, matrix analysis and analytic 2D/3D geometry. Prerequisites: MTR 520 and NGN 500.

**MTR 640 Nonlinear and Intelligent Control Systems (3-0-3).** Introduces nonlinear systems, Lyapunov stability theory, linearization by high gain and sliding modes, nonlinear observers, Lyapunov design methods, feedback linearization, and intelligent control strategies, such as neural networks and fuzzy logic. Prerequisite: MTR 540.

**MTR 644 Electric Drives for Mechatronics Systems (3-0-3).** Provides an overview of modern electrical machines in terms of their dynamic and steady-state performance. Covers power electronic conversion and modulation principles, magnetic systems, dynamic models of AC and DC machines, and pulse-width modulated

power electronic converters. Includes case studies with practical current control techniques. Prerequisite: MTR 501.

**MTR 645 Image Processing and Computer Vision (3-0-3).** Discusses fundamentals of digital images, image enhancement, restoration and segmentation. Covers color representation, morphological image processing, representation of images and object recognition. Prerequisite: NGN 500.

**MTR 650 Applied Linear Estimation (3-0-3).** Presents a review of probability and stochastic processes. Introduces deterministic and stochastic least squares estimators. Defines the innovation process and its properties. Introduces state space models, Weiner-Kalman filters for scalar and vector processes as well as smoothed estimators, and non-linear parameter estimation. Introduces fast array algorithms. Includes a project that applies the estimation algorithms on mechatronics application case studies. Prerequisite: NGN 500.

**MTR 690 Mechatronics Design (2-3-3).** (Formerly MTR 590). Requires individual and team projects involving the development and integration of hardware and software into a smart system, which includes sensing, processing and controlling functions. Prerequisites: MTR 520 and MTR 530; prerequisite/concurrent: MTR 695.

**MTR 695 Mechatronics Seminar (1-0-0).** Explores project planning development and realization, case studies of engineering systems design and realization, and current research topics in mechatronics engineering, including areas such signal processing, image processing, control, robotics, intelligent systems, computer vision and MEMS. Prerequisite: approval of program director.

**MTR 699 Master's Thesis (9 credits).** Requires students to complete extended and original research work on a topic related to elements of computing, mechanics, electronics and intelligence. Graded as Pass/Fail. Prerequisite: approval of program director; prerequisite/concurrent: MTR 695.

## NGN Engineering

**NGN 500 Advanced Engineering Mathematics (3-0-3).** Covers analysis of linear and nonlinear physical systems described by ODEs and PDEs, Sturm-Liouville problems, tensors, partial differential equations of mathematical physics (wave, diffusion, Laplace, Poisson Equations), transform and integral methods for solving boundary

and initial value problems for ordinary and partial differential equations. Prerequisite: admission to the MSChE or MSCoE or MSCE or MSEE or MSME or MSMTR programs.

**NGN 505 Random Variables and Stochastic Processes (3-0-3).**

Covers the following topics: random variables, transformation of functions of random variables, vectors of random variables, random processes: correlation and power spectral density, LTI systems with stochastic signals, Markov chains and queuing theory. Prerequisite: admission to the MSChE or MSCoE or MSCE or MSEE or MSME programs.

**NGN 509 Advanced Computational Methods (3-0-3).**

Covers topics such as numerical analysis methods (error analysis, roots of equation, linear algebraic equations, interpolation, approximation, finite difference and quadrature); numerical linear algebra; numerical solutions of ordinary differential equations; numerical solutions of partial differential equations; control volume technique; and numerical modeling, simulation and visualization of engineering problems using MATLAB. Prerequisite: admission to the MSChE or MSCoE or MSCE or MSEE or MSME programs.

repeated for credit. Prerequisites: topic specific. Lab/tech fee may apply.

Special topic courses are numbered as 594 or 694 courses. The three-letter course prefix reflects the field of study of the course.

Descriptions of particular special topic courses are made available in the college/school offering the course during registration.

## Independent Study

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

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

**Directed Study (1 to 4 credits).** An investigation under faculty supervision beyond what is offered in existing courses.

Directed study courses are numbered as 596 or 696 courses. The three-letter course prefix reflects the field of study of the course (e.g., directed study courses in ESM are coded as ESM 696).

For further details on independent study, please refer to Registration in Independent Study Courses in the Academic Policies and Regulations section of this catalog.

## Special Topic Courses

**Special Topic (1 to 4 credits).**

Presents a theoretical or practical topic proposed by the faculty beyond what is offered in existing courses. Can be



# School of Business Administration

## ACC

## Accounting

**ACC 610 Topics in Financial Accounting (3-0-3).** Focuses on contemporary financial reporting issues, including development of the conceptual framework as presented by the Financial Accounting Standards Board (FASB), contemporary accounting research and recent financial accounting pronouncements. Examines theories relevant for financial accounting and reporting. Prerequisite: ACC 302.

**ACC 611 Auditing and Attestation (3-0-3).** Focuses on current developments in auditing and attestation standards as promulgated by the American Institute of Certified Public Accountants (AICPA). Covers international auditing standards promulgated by the International Federation of Accountants (IFAC) as well. Prepares students for the CPA exam section on Auditing and Attestation. Prerequisite: ACC 410.

**ACC 612 Advanced Topics in Managerial and Cost Accounting (3-0-3).** Addresses advanced issues in cost allocation and transfer pricing. Considers also the use of modeling such as linear programming, probability theory and other quantitative techniques to solve business problems. Prerequisite: ACC 303.

**ACC 613 Topics in International Financial Reporting Standards (3-0-3).** Addresses current topics and rules promulgated by the International Accounting Standards Board (IASB) and commonly referred to as International Financial Reporting Standards (IFRS). Covers standards issued or proposed by IASB with a special emphasis on the complex standards that may have not been covered in depth at the undergraduate level. Considers the worldwide convergence of national standards toward IFRS. Helps students prepare for the Financial Accounting and Reporting (FAR) Section of the CPA exam. Prerequisite: ACC 302.

**ACC 614 Regulatory Environment in Accounting (3-0-3).** Examines the sources, rules, regulations and laws covering business transactions including leases, contracts, loans, contingencies, commitments and purchases. Evaluates authoritative regulations and standards issued by the Securities and Exchange Commission (SEC) and AICPA. Emphasizes development of procedures for identifying applicable accounting issues and locating appropriate laws/standards. Prerequisite: ACC 302.

**ACC 615 Enterprise Database Systems (3-0-3).** Focuses on building information systems that meet multiple needs for transaction-level processing, control specification and financial statement preparation, while simultaneously supporting the needs of a variety of other decision-makers in finance, management, marketing and supply chain logistics. Emphasizes the design and use of conceptually modeled databases. Devotes significant attention to Extensible Business Reporting Language (XBRL). Prerequisite: ACC 360.

**ACC 620 Forensic Accounting and Fraud Examination (3-0-3).** Considers fraud as a cost for businesses and society as a whole. Focuses on examining fraud committed by white-collar criminals. Addresses questions of why and how fraud is committed and identifies red flags that may indicate the presence of fraud. Examines methods for deterring, investigating and uncovering fraud schemes. Discusses empirical surveys on the extent and nature of occupational fraud worldwide, considering real-life cases in which managers are caught manipulating company records and committing widespread fraud. Prerequisite: ACC 410.

**ACC 621 Ethical Environmental and Corporate Governance (3-0-3).** Discusses the fundamentals of corporate governance from many different angles that include the board of directors, senior management, investors, the media, proxy advisors, regulators and other stakeholders. Focuses on assessing the effectiveness and execution of governance roles and responsibilities. Considers ethical issues and corporate governance in accounting and auditing, including ethical reasoning, integrity, objectivity, ethical failure, independence, core values and professional issues. Prerequisite: ACC 301.

**ACC 622 Internal Auditing (3-0-3).** Focuses on the theory and practice of internal auditing. Addresses the role of internal auditing in strengthening the corporate governance system in business and nonbusiness organizations. Provides a foundation for accounting and auditing students to be objective professionals in order to provide assurance and consulting services to top- and lower-level management. Emphasizes achieving the organization's objectives efficiently and effectively. Helps students as aspiring professionals to prepare for the Certified Internal Auditor (CIA) exam. Prerequisite: ACC 410.

**ACC 623 Financial Statement Reporting and Analysis (3-0-3).** Emphasizes the analysis of financial statements and related footnotes from the standpoint of the different users of financial reporting. Provides an opportunity for students to conduct a review of financial statements for fairness and completeness in reporting. Applies tools and skills used to analyze and interpret financial reports to assess the financial performance of firms and facilitate investment, lending and other financial decisions in a variety of business contexts. Prerequisite: ACC 302.

**ACC 624 Oil and Gas Accounting (3-0-3).** Focuses on accounting for exploration, acquisition, drilling, production and conveyances of oil and gas using full-cost and successful efforts methods. Considers financial accounting and reporting for oil and gas operations in the US and internationally. Examines international joint venture accounting and accounting for international concession and profit sharing agreements. Prerequisite: ACC 302.

**ACC 625 Tax Research (3-0-3).** Provides a basic understanding and knowledge of sources available in conducting tax research. Develops tax research skills. Teaches students to read and interpret federal tax laws and regulations. Applies research skills and uses tax sources authority in preparing written materials. Prepares students for a career in the tax planning and research. Prerequisite: ACC 305.

**ACC 626 Information Technology Auditing and Assurance (3-0-3).** Focuses on the process of collecting and evaluating evidence of IT system practices and operations. Develops understanding of procedures to test whether the systems are able to safeguard assets, maintain data security, and operate effectively and efficiently. Covers theories and practices of information systems auditing and the role of the information systems auditor in systems development and creation of computer-based system controls. Prerequisite: ACC 410.

**ACC 627 Advanced International Taxation (3-0-3).** Focuses on taxation of multinational enterprises. Covers topics such as international tax treaties, tax haven territories, and tax systems utilized by different nations and cross-border taxation of transfer pricing. Prerequisite: ACC 306.

**ACC 628 Fraudulent Financial Reporting (3-0-3).** Covers different

financial reporting schemes that are utilized by firms to mislead investors and influence their investment actions. Covers different accounting methods and schemes that are used to provide misleading information. Examines landmark fraudulent cases and their impact on society. Prerequisite: ACC 410.

## EMB Executive Business Administration

### EMB 601 Business Foundations

**(3-0-3).** Focuses on the uses of accounting information in making managerial, investment and credit decisions. Covers financial as well as managerial accounting for business entities as well as for governmental entities. Discusses issues related to internal control, attestation and corporate governance and unique topics relevant to multinational enterprises. Prerequisite: admission to the EMBA program.

### EMB 602 Principles of Leadership

**(3-0-3).** Focuses on building the leadership skills required to lead individuals, groups and organizations to their optimal levels of performance. Utilizes principles of organizational behavior (OB) as a foundation of leadership, and introduces key OB topics to enhance the participant's understanding of leadership. Considers individual behavior, leadership styles, motivation theory, alignment between individuals and organizations, and the role of reward systems in managing organizations. Prerequisite: admission to the EMBA program.

### EMB 603 Economics and Analytical

**Foundations (3-0-3).** Introduces principles and develops techniques of economic analysis used to support decision-making in business organizations and understand a firm's competitive environment. Reviews essential elements of microeconomic and macroeconomic theory such as supply and demand, consumer behavior, economic costs, market structures and estimation techniques as they apply to competition, market behavior, interest rates and other phenomena impacting global and Gulf enterprises. Incorporates statistical analysis into business decision making and research. Prerequisite: admission to the EMBA program.

### EMB 604 Operations Management

**(3-0-3).** Focuses on management decisions in manufacturing and services as well as the sourcing and distribution factors of an organization. Considers principles of operations strategy, productivity, capacity planning, quality, introductory supply chain management, and the design and control of

processes. Explores a wide variety of analytical techniques for critically evaluating and continuously improving business processes. Prerequisite: admission to the EMBA program.

### EMB 605 Market Analysis and Marketing Strategy Development

**(3-0-3).** Introduces participants to methods for conducting consumer and business buyer analysis, techniques for understanding market trends, and fundamental marketing research methods. Culminates in an application of market analysis and research to the key tasks in developing marketing strategy, i.e., segmentation and market positioning. Provides insights into unique aspects of foreign as well as Gulf markets and their implications for marketing strategy. Prerequisite: EMB 603.

### EMB 606 Statistics and Research

**Methods (3-0-3).** Introduces the theories and tools of applied business research. Considers research methodologies and techniques including quantitative data collection and various statistical methods and tools of analysis as well as qualitative data collection and analysis. Provides experience in conducting actual research in management, marketing, finance, accounting and other areas of business. Builds skills in researching and analyzing business problems to support better decision-making. Prerequisite: EMB 603.

### EMB 607 Leadership and Human

**Capital (3-0-3).** Examines executive responsibility to manage human resources from a leadership perspective. Utilizes cases to analyze theories and practices in terms of organizational effectiveness when competing in a global business environment. Explores management communication across culture. Includes frameworks for understanding differences across cultures, and cross-cultural awareness. Analyzes issues pertaining to ethics and leadership, including ethical theory and frameworks, codes of ethics, corrupt practices and various systems of corporate ethics, including global ethics. Prerequisite: EMB 602.

### EMB 608 Global Economics and

**Decision Support (3-0-3).** Covers the value of macroeconomics factors in exchange decision making. Introduces measures of economic performance such as productivity, business cycles, economic growth, price stability, unemployment rates, interest rates, government budgets and trade deficits. Includes a mixture of decision analysis, macroeconomic theory and real-world applications from recent global experience and economies in the Gulf. Prerequisite: EMB 603.

### EMB 609 International Finance and

**Investment (3-0-3).** Focuses on valuation of stocks and bonds within the framework of international financial markets, based on both investor and corporate financing perspectives. Introduces trading aspects, such as margin buying and short selling, with emphasis on risk-return trade-offs implicit in the various investment strategies. Explores the effect of diversification and duration management on portfolio risk. Introduces exchange rate-determination and key macroeconomic variables in the context of exchange rate risk management. Introduces hedging techniques using financial derivatives. Prerequisite: EMB 601.

### EMB 610 Society and Governance

**(3-0-3).** Focuses on the position of business in society and examines its relations with other stakeholders. Explores societal expectations, corporate accountability and strategic approaches to social responsibility. Analyzes concepts of management accountability and fiduciary responsibility based on agent and stewardship models with an emphasis on corporate governance and the challenges faced by boards of directors. Examines the evolving legal structure of the UAE and considers issues such as contracts, dispute resolution and employment law. Prerequisite: admission to the EMBA program.

### EMB 611 Executive Leadership

**(3-0-3).** Focuses on Gulf firms, emphasizing the leader's responsibility for diagnosing problems in organizations and enabling appropriate changes in the firm. Prerequisite: EMB 607.

### EMB 612 Islamic Finance and

**Corporate Financial Management (3-0-3).** Focuses on the tools and concepts necessary for making advanced financial decisions. Introduces students to the application of time value of money, cost of capital, capital budgeting, capital structure, risk management, use of hedging, transfer pricing and minimizing international taxation. Explores the foundations of Islamic financing and identifies key differences with traditional financial practices. Prerequisite: EMB 609.

### EMB 613 Supply Chain Management

**(3-0-3).** Extends understanding of operations management and emphasizes its importance in global environments. Focuses on integration of the supply chain and the resultant corporate advantages at both the local and the global levels. Emphasizes application of analytical techniques to quality, purchasing and logistic. Prerequisite: EMB 604.

**EMB 614 Market Leadership: Program Development and Implementation (3-0-3).**

Introduces students to the fundamental concepts of marketing, including product, price, promotion and placement. Develops a focus on value creation for customers resulting in profitability and long-term outcomes for the organization. Considers key principles underlying the establishment of market leadership. Explores the balance between standardization and adaptation of marketing programs in an era of globalization and examines techniques to stimulate innovation in the development of new marketing strategies, and product and service offerings. Prerequisite: EMB 605.

**EMB 615 Capstone: Developing and Defending a Business Plan (3-0-3).**

Serves as a vehicle for integration of student learning. Requires cross-functional business skills to blended organically to produce a business plan detailing analysis of market opportunity, a viable marketing strategy and detailed financing options. Requires a concluding session comprising a presentation to a simulated panel of demanding investors and a feedback from the same panel. Prerequisite: EMB 612, prerequisite/concurrent: EMB 614.

## MBA Business Administration

**MBA 501 Foundations of Economics (3-0-3).**

Provides an introductory survey of microeconomics and macroeconomics, designed primarily for MBA students unfamiliar with economics principles. The microeconomics side of the course includes elements of demand and supply, consumer behavior, costs, market structures and income distribution. The macroeconomic side of the course analyzes movements in prices and national output, inflation, unemployment, and monetary and fiscal policy.

**MBA 503 Financial Accounting for Managers (3-0-3).**

Addresses reading, analyzing and interpreting financial statements for the purpose of making managerial as well as investing and financing decisions. Explores management motivation in choosing accounting policies and how these policies have social, ethical and legal implications. Considers the basic financial statements, basis of valuations and the extent of financial disclosure.

**MBA 504 Managerial Statistics (3-0-3).**

Examines the decision-aiding tools that can be applied by managers to gain insight into decision problems, ranging from simple graphic displays of

data to sophisticated statistical tests. Students use real-world data sets and PC-based software to describe sets of measurements, construct probability distributions, estimate numerical descriptive measures and build multiple regression models. Prerequisite: a college-level finite mathematics course is highly recommended. Prerequisite: placement test or completion of a college-level statistics course.

**MBA 505 Financial Management (3-0-3).**

Covers financial theory and techniques of analysis, including valuation theory, theories of risk measurement, managing a firm's investment decisions and capital structure, sources of financing for a firm, and financial planning and analysis. Prerequisite/concurrent: MBA 503.

**MBA 508 Analytical Methods and Modeling (1.5-0-1.5).**

Examines analytical tools and methods used to make effective management decisions. Introduces decision analysis, process analysis and design, capacity management and queuing with an emphasis on the use of analytical models to solve complex business problems. Includes such techniques as decision trees, value stream mapping, process modeling, spreadsheet simulations and dynamic modeling. Prerequisite: computer proficiency.

**MBA 509 Marketing Concepts (1.5-0-1.5).**

Covers the fundamental aspects of marketing including the marketing mix (product, pricing, advertising and promotion, and distribution), by focusing on problem-solving and decision-making abilities. Includes lectures, case studies and experiential learning activities in which students learn to research customer needs, segment markets and perform other basic marketing functions.

**MBA 512 Organizational Behavior (1.5-0-1.5).**

Applies management theory to factors that influence individual and group performance while incorporating current management theory and research. Topics discussed range from motivation to the use of power and influence, organizational design and culture, and the role of leadership.

**MBA 601 Managerial Economics (3-0-3).**

Covers the application of economic theory to management problems using basic economic tools and techniques of economic analysis to analyze decision-making problems faced in private businesses, government agencies and non-profit organizations. Prerequisite: MBA 501.

**MBA 606 Management Information Systems (3-0-3).**

Provides the theoretical, technological, practical and

managerial foundations of management information systems. Covers information technologies, systems development, the impact of information systems on business organizations, information technology as a competitive tool and the management of information systems within domestic and multinational corporations. Introduces students to current systems and software. Prerequisite: MBA 508.

**MBA 607 Business Communication (3-0-3).**

Focuses on the written and oral communication skills of the participants. Emphasizes the use of technology in business communication. Covers effective business writing and presentation, listening and negotiation skills. Stresses the study and practice of advanced techniques of argumentative writing.

**MBA 609 Operations Management (3-0-3).**

Takes an analytical approach to solving problems in production and operations management. Explores basic principles, functions and concepts involved in the design, operation and control of operations in contemporary organizations as well as key elements of supply chain management. Covers development of operations strategy, the application of linear programming, quality management, supply chain design and procurement, inventory management, and lean production. Prerequisites: MBA 504 and MBA 508.

**MBA 610 Business Research Applications (3-0-3).**

Introduces students to the basic tools of business research by explaining various research methodologies and techniques. Includes numerous illustrations, portraying actual research in management, marketing, finance, accounting and other areas of business, that show how to perform the research function. Prerequisite: MBA 504.

**MBA 611 Advanced Financial Management (3-0-3).**

Examines, at an intermediate level, the problems of managing short-term assets including cash, marketable securities, accounts receivable and inventory, managing the acquisition and disposal of long-term assets and financing decisions including leverage, leasing, mergers and international issues. Familiarizes students with both the basic theories in each of these areas and various strategies for integrating the theory with practice. Prerequisite: MBA 505.

**MBA 612 Leadership and Change Management (3-0-3).**

Investigates the role of leadership in the context of global change. Gives particular attention to leadership issues as they pertain to organizational development, culture and the dynamics of change. Prerequisite: MBA 512.

**MBA 613 Accounting Analysis for Managers (3-0-3).** Explains the role of accounting information in facilitating the functions of management. Covers decision making, planning, performance evaluation, budgeting, cost control and international transfer prices. Prerequisite: MBA 503.

**MBA 614 Marketing Management (3-0-3).** Introduces current marketing management techniques and the tools necessary for effective marketing decision making. Provides global perspectives on marketing management and international marketing issues. Interactive learning techniques include the case method and active class participation. Incorporates issues such as ethics, minorities and the ecological environment. Requires familiarity with microeconomic theory, basic concepts of accounting and relevant support software. Prerequisite: MBA 509.

**MBA 615 Innovation and Entrepreneurship (3-0-3).** Introduces business innovation and explores the entrepreneurial process through which new ideas become the basis for viable enterprises. Considers the development of a product or concept, assessment of technical and commercial feasibility, preparation of a business plan, and the need for funding. Requires students to take part in an interdisciplinary, team-based project developing a proposal for the prospective commercialization of a product, process or other business concept. Exposes the constant interplay between innovation and risk, feasibility and function, ownership and financing, marketing and delivery. Prerequisite: completion of all foundation courses or approval of the MBA program director.

**MBA 616 e-Commerce Business Models and Technology (3-0-3).** Presents a survey of consumer and business-to-business electronic commerce models, systems and technical solutions. Includes hands-on projects and assignments. Prerequisite: MBA 606.

**MBA 617 Ethics and Legal Issues (3-0-3).** Intensively introduces the legal and ethical issues confronting the global business manager. Addresses the legal system, legal processes and several areas of substantive commercial law relevant to the business manager. Discusses the developing recognition of legal and ethical issues and their managerial implications. Examines product liability, the administrative legal process of regulation, antitrust and the contract as the fundamental legal instrument of global commercial relations.

**MBA 618 Strategic Management in a Global Environment (3-0-3).** Focuses on developing and applying strategic management to successfully position organizations in a competitive global environment. Integrates previous course experiences to hone decision making, analysis, and oral and written communication skills. Requires students to work in small teams to analyze a real company's external environment, perform an internal corporate audit and build detailed action plans including implementation issues and financial forecasting. Normally taken during the last semester in the MBA program. Prerequisites: completion of all MBA foundation courses and completion of at least five MBA core courses; prerequisites/concurrent: MBA 609 and MBA 611.

**MBA 620 Public Administration and the Policy Process (3-0-3).** Introduces the public policy process and considers concepts such as competing values, externalities, market failure, risk and uncertainty. Presents alternate models of policy decision making and explores the approaches used by public service managers to build support for specific programs. Examines the roles of agency culture, administrative reform, public trust, judgment and ethical norms. Prerequisite: MBA 501.

**MBA 621 Management of Nonprofit Organizations (3-0-3).** Focuses on the application of management theory and practice in nonprofit organizations. Examines the establishment of nonprofits, strategic planning, governance, accountability, communication, budgeting and fundraising, human resource management, design of volunteer programs, ethics and responsiveness to stakeholders. Prerequisite: MBA 512.

**MBA 622 The Public-Private Partnership (3-0-3).** Explores key tenets of the New Public Management and their implications for the delivery of public services. Examines the political, managerial, legal and ethical issues associated with use of non-governmental organizations. Considers types of services amenable to new approaches and introduces elements of performance monitoring in acquisition, contracting and program delivery. Prerequisite: MBA 620.

**MBA 623 e-Government (3-0-3).** Introduces the concept of e-government and explores the role of IT and the Internet in the delivery of public services and reengineering of administrative processes. Explores dramatic changes in public administration and methods of transformation. Examines issues of technology, public interfaces, transparency and accountability, access

and security, equity, privacy and their impact on the deployment of government electronic services. Considers the influence of government information delivery in the development of an informed citizenry and expanded citizen participation in public decision making. Prerequisite: MBA 606.

**MBA 624 Ethics, Law, Democracy and Society (3-0-3).** Considers ethical issues and moral reasoning in the context of public policy formulation and implementation. Examines ethical standards and legal requirements that apply to managers in the public sector. Explores concepts such as the rule of law, constitutional constraints, administrative legitimacy, due process, rulemaking, administrative appeal and managerial liability. Reviews the impact of interests, privilege, political power and conflict of interest on public trust. Addresses differences in values, norms and social objectives based on culture and tradition. Prerequisite: MBA 620.

**MBA 625 Public Financial Management (3-0-3).** Introduces fundamental concepts and practice in budgeting, financial administration and revenue generation. Considers the budget process, budget preparation, resource allocation, cost analysis and audit. Presents basic management functions including cash management, debt administration and communication of financial performance. Surveys various public funding sources in the context of the Gulf Region. Prerequisite: MBA 503.

**MBA 632 Investment Analysis (3-0-3).** Covers the purpose and operations of security markets; investment instruments and their characteristics; introduction to portfolio and capital market theory; theory of valuation, bonds and the term structure of interest rates; options, commodity and financial futures investment companies; and international investments. Prerequisite: MBA 611.

**MBA 633 Financial Derivatives (3-0-3).** Covers conceptual and practical aspects of financial derivatives and derivatives markets with a detailed look at options, forwards, and futures on stocks, stock indices, bonds, currencies and commodities. Discusses in detail alternative hedging strategies and speculative elements of derivatives. Analyzes option pricing aspects by applying the Binomial Model and the Black-Scholes Model. Prerequisite: MBA 611.

**MBA 634 Commercial Banking (3-0-3).** Focuses on decision making based on an integrated approach that exposes students to the understanding of bank management. Discusses factors that influence credit, investment, funding and pricing decisions.

risk and return. Discusses a wide range of cases related to bank performance evaluation, making new loans, managing the investment portfolio, asset and liquidity management as well as the macro and international environment in which commercial banks operate. Prerequisite: MBA 505.

**MBA 635 Islamic Economics (3-0-3).** Provides the theoretical foundation for advanced studies in Islamic economics. Addresses questions concerning the need for an Islamic economic system, the viability of an economic system that is built on religious paradigm, how that system should be and how it relates to contemporary economic systems. Investigates the socioeconomic dynamics of classical Islamic economics and its views on wealth creation and distribution, optimum growth and employment, economic stability, public finance and the role of the state in economic activity. Prerequisite: MBA 501.

**MBA 636 Islamic Banking and Finance (3-0-3).** Provides students with a formal and intuitive understanding of the essentials of Islamic finance, including the foundation of traditional Islamic financial tools and practices and the development of modern Islamic banking and financial instruments and institutions. Relates the theory of Islamic finance to current development in Islamic banking and the finance industry. Prerequisite: MBA 505.

**MBA 637 Investing in Real Estate (3-0-3).** Introduces the importance of real estate to consumers and investors as well as its role in economic development and growth. Considers real estate from a variety of perspectives. Explores topics such as loan underwriting, property development, financial performance and market analysis. Discusses new property and lending trends around the world and particularly within the Middle East. Prerequisite: MBA 505.

**MBA 651 Supply Chain Management and Strategy (3-0-3).** Introduces basic concepts of logistics and supply chain management. Examines supply chain management topics, tools and issues from a general management point of view. Covers supplier selection and collaboration, performance measurement along the supply chain, strategic outsourcing, just-in-time partnership and distribution, customer relationship management, logistics, procurement, inventory and warehousing strategies, and service supply chains. Includes case assignments, discussions and mini-projects. Prerequisite: MBA 508.

**MBA 655 Information Systems Design (3-0-3).** Introduces students to basic elements of IS infrastructures, such as networks, intranets and XML, databases, and data warehouses and data centers. Teaches students how to plan and develop IT architectures and business applications based on business requirements. Emphasizes building shared databases and planning integrated applications such as CRM, SCM and ERP and other knowledge management and business intelligence platforms. Covers alternative paradigms for designing business solutions, including outsourcing, utility computing, open source software and grid computing. Requires a course-long project within a real-world context. Prerequisite: MBA 606.

**MBA 661 Strategic Human Resource Management (3-0-3).** Focuses on the strategic role of HRM, i.e. the role of HRM in strategy formulation, strategy implementation and measuring and improving HRM effectiveness. Examines how to align HRM practices with organizational business goals, using job analysis and design, HR planning, recruitment and selection, training and development, performance management and compensation practices. Also addresses the special topics of Emiratisation and diversity issues, talent management, the role of HR in merger and acquisitions and high commitment practices. Prerequisite: MBA 512.

**MBA 662 International Human Resource Management (3-0-3).** Explores the roles of HR managers in multinational corporations and identifies and analyzes efficient management strategies and practices in the field of international HR and effective HRM policies and practices in international contexts. Focuses on the internationalization of the organizations and the cultural dimensions that have an impact on HRM activities. Studies recruitment and selection, training, development, and evaluation and compensation practices in an international context. Covers ethics and social responsibility issues in the MNE as well as the challenges of designing and implementing an iHRM policy.

**MBA 663 Staffing (3-0-3).** Allows students to develop critical, analytical and integrative thinking about the staffing process in today's organizations. Examines in detail the six steps in the staffing process: job design and analysis, HR planning, recruitment, selection, orientation and retention. Explores selection interviews, interviewing skills and selection tests. Covers how to manage diversity in the staffing context as well as evaluation and improvement of the important

steps in the staffing process. Includes concrete exercises and case studies.

**MBA 664 Training and Development (3-0-3).** Adopts a systematic approach to training and development systems, focusing on the blend between theory and practice. Covers training in organizations, the training process, identifying learning needs and appropriate learning opportunities, designing and delivering training, the transfer of learning, reviewing and evaluating training activities, the management of transfers and promotions, the strategic development of leaders and managers, numerous developmental techniques, the learning organization and knowledge management. Studies the strategic management of training and development activities.

**MBA 665 Performance Management (3-0-3).** Studies strategic performance appraisal and management in modern, complex organizations, at the organizational, group and individual levels. Examines the factors that have an impact on performance and the actions that can improve it. Focuses on organizational success and efficient integration of all organizational systems. Covers performance planning, facilitation, assessment, improvement and system enhancement. Includes the multiple performance appraisal methods, performance feedback, performance counseling and discipline, performance rewards management, and performance management systems audit. Addresses specific challenges of PM in the Arab World and in the public sector. Prerequisite: MBA 512.

**MBA 670 Management Consulting (3-0-3).** Explores the theoretical and analytical foundations of management consulting practice. Helps students to develop skills necessary for successful consulting engagements. Includes the following topics: marketing professional services, needs assessment, selection of key performance indicators, proposal preparation, liaising with senior management, change leadership, training, managing deliverables, project documentation and presentation styles. Exposes students to common consulting tools, technologies and techniques used for problem identification and process analysis, quality management, team building, etc. Students who have not completed all foundation courses will require approval of MBA program director. Prerequisite: MBA 512.

**MBA 680 Project Management (3-0-3).** Examines the concepts and techniques associated with managing projects in business organizations. Considers project design, planning, scheduling, systems engineering, cost estimation and control. Explores the

relationship between innovation and risk. Prerequisite: MBA 508.

**MBA 690 Global Consulting**

**Practicum (0-9-3).** Provides student teams with an opportunity to participate in a consulting engagement under the direction of SBA faculty. Requires students to carry out a complete project with a team from a US partner institution. Develops skills in problem definition, needs analysis, strategic planning, market research and other techniques appropriate to the needs of the client. Travel is required. Prerequisite: permission the MBA program director.

## Independent Study

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

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

**Directed Study (1 to 4 credits).** An investigation under faculty supervision beyond what is offered in existing courses.

Directed study courses are numbered as 596 or 696 courses. The three-letter course prefix reflects the field of study of the course (e.g., directed study courses in MBA are coded as MBA 696).

For further details on independent study, please refer to Registration in Independent Study Courses in the Academic Policies and Regulations section of this catalog.

## Special Topic Courses

**Special Topic (1 to 4 credits).**

Presents a theoretical or practical topic proposed by the faculty beyond what is offered in existing courses. Can be repeated for credit. Prerequisites: topic specific. Lab/tech fee may apply.

Special topic courses are numbered as 594 or 694 courses. The three-letter course prefix reflects the field of study of the course.

Descriptions of particular special topic courses are made available in the college/school offering the course during registration.



# Full-Time Faculty

## A

**Abdalla, Jamaleldin**, PhD, University of California at Berkeley, 1989; Professor in Civil Engineering

**Abdallah, Abed Al-Nasser**, PhD, University of Lancaster, 2004; Associate Professor in Accounting

**Abdelfatah, Akmal**, PhD, University of Texas at Austin, 1999; Associate Professor in Civil Engineering

**Abdel-Hafez, Mamoun**, PhD, University of California at Los Angeles, 2003; Associate Professor in Mechanical Engineering and Director, Mechatronics Graduate Program

**Abdel-Jabbar, Nabil**, PhD, University of Michigan, 1996; Professor in Chemical Engineering

**AbdulHadi, Zayid**, PhD, Laval University, 1987; Professor in Mathematics and Statistics

**Abdul-Latif, Akrum**, PhD, University of Technology of Compiègne, 1994; Visiting Professor in Mechanical Engineering

**Abed, Farid**, PhD, Louisiana State University, 2005; Associate Professor in Civil Engineering

**Abouelnasr, Dana**, PhD, Georgia Institute of Technology, 1984; Associate Professor in Chemical Engineering

**Abouleish, Mohamed Yehia**, PhD, Tennessee Technological University, 2003; Assistant Professor in Biology, Chemistry and Environmental Sciences

**Abu Al-Foul, Bassam**, PhD, University of Utah, 1994; Associate Professor in Economics

**Abualrub, Taher**, PhD, University of Iowa, 1998; Professor in Mathematics and Statistics

**Abukhaled, Marwan**, PhD, Texas Tech University, 1995; Professor in Mathematics and Statistics

**Abu-Lebdeh, Ghassan**, PhD, University of Illinois at Urbana-Champaign, 1999; Associate Professor in Civil Engineering (on sabbatical Fall 2014)

**Abu-Muhanna, Yusuf**, PhD, State University of New York at Albany, 1979; Professor in Mathematics and Statistics

**Abu-Nabah, Bassam**, PhD, University of Cincinnati, 2007; Assistant Professor in Mechanical Engineering

**Abu-Rukba, Ra'afat**, PhD, Western University, 2013; Visiting Assistant Professor in Computer Science and Engineering

**Abu-Yousef, Imad**, PhD, McGill University, 1996; Professor in Biology, Chemistry and Environmental Sciences

**Ahmad, Norita**, PhD, Rensselaer, 2001; Associate Professor in Marketing and Information Systems

**Ahmed, Khawlah**, PhD, State University of New York at Buffalo, 1998; Associate Professor in English

**Ahmed, Rana**, PhD, Duke University, 1991; Associate Professor in Computer Science and Engineering

**Ahmed, Saad**, PhD, Georgia Institute of Technology, 1981; Professor in Mechanical Engineering

**Akan, Ali Osman**, PhD, University of Illinois, 1976; Professor in Civil Engineering, and Head, Department of Civil Engineering

**Al-Ali, Abdul-Rahman**, PhD, Vanderbilt University, 1990; Professor in Computer Science and Engineering

**Al-Aomar, Raid**, PhD, Wayne State University, 2000; Associate Professor in Industrial Engineering

**Al-Asheh, Sameer**, PhD, University of Ottawa, 1997; Visiting Professor in Chemical Engineering

**Al Assaf, Yousef**, PhD, Oxford University, 1988; Professor in Electrical Engineering (on leave until Summer 2015)

**Albasha, Lutfi**, PhD, University of Leeds, 1995; Associate Professor in Electrical Engineering

**AlHamaydeh, Mohamed**, PhD, University of Southern California, 2005; Associate Professor in Civil Engineering

**Ali, Ahmed**, PhD, University of Durham, 1999; Associate Professor in Arabic and Translation Studies

**Ali, Naghmana**, PhD, University of Toronto, 2004; Assistant Professor in English

**Ali, Tarig**, PhD, Ohio State University, 2003; Associate Professor in Civil Engineering

**Al-Issa, Ahmad**, PhD, Indiana University of Pennsylvania, 1998; Professor in English and Associate Dean, College of Arts and Sciences

**Al-Jabouri, Firas**, PhD, Newcastle University, 2011; Assistant Professor in English

**Alkafaji, Yass**, DBA, Mississippi State University, 1983; Associate Professor in Accounting

**Al-Kaisi, Meis**, PhD, University of London, 2006; Assistant Professor in Arabic and Translation Studies

**Al-Khateeb, Ghazi**, PhD, University of Illinois Urbana-Champaign 2001; Visiting Associate Professor in Civil Engineering

**Al-Khazali, Osamah**, PhD, University of Memphis, 1997; Professor in Finance

**Al-Najjar, Abeer**, PhD, University of Edinburgh, 2003; Assistant Professor in Mass Communication

**Alnaser, Ali Sami**, PhD, Western Michigan University, 2002; Associate Professor in Physics and Head, Department of Physics

**Al-Nashash, Hasan**, PhD, Kent University, 1988; Professor in Electrical Engineering

**Al-Natour, Sameh**, PhD, University of British Columbia, 2012; Assistant Professor in Marketing and Information Systems

**Alobaidi, Ghada**, PhD, University of Western Ontario, 2000; Associate Professor in Mathematics and Statistics

**Al-Othman, Amani**, PhD, University of Ottawa, 2012; Assistant Professor in Chemical Engineering

**Aloul, Fadi**, PhD, University of Michigan, 2003; Professor in Computer Science and Engineering and HP Institute Director

**AlQassemi, Salem**, MFA, Rhode Island School of Design, 2011; Assistant Professor in Art and Design

**Al-Sayah, Mohamed**, PhD, University of Alberta, 2002; Associate Professor in Biology, Chemistry and Environmental Sciences

**Al Shaar, Nuha**, PhD, University of Cambridge, 2010; Assistant Professor in Arabic and Translation Studies

**Al-Tamimi, Adil**, PhD, Strathclyde University, 1990; Professor in Civil Engineering

**Altarabsheh, Anas**, PhD, Stuttgart University, 2007; Visiting Associate Professor in Electrical Engineering

**Amador, Victoria**, PhD, University of Denver, 1986; Assistant Professor in English

**Anabtawi, Mahmoud**, PhD, University of Texas, 1998; Professor in Mathematics and Statistics and Dean, College of Arts and Sciences

**Anderson, Pia-Kristina**, PhD, University of California at Berkeley, 2001; Assistant Professor in International Studies and Associate Dean, College of Arts and Sciences

**Angell, Linda**, DBA, Boston University, 1996; Director, International Exchange Office

**Arefi, Mahyar**, PhD, University of Southern California, 1999; Visiting Associate Professor in Architecture

**Arenfeldt, Pernille**, PhD, European University Institute, 2006; Associate Professor in International Studies

**Arzaghi, Mohammad**, PhD, Brown University, 2005; Associate Professor in Economics (on leave Fall 2014)

**As'ad, Rami**, PhD, Concordia University, 2011; Assistant Professor in Industrial Engineering

**Asa'd, Randa**, PhD, University of Cincinnati, 2012; Assistant Professor in Physics

**Ashill, Nicholas**, PhD, University of Bradford, 2004; Chalhoub Group Professor in Luxury Brand Management and Professor in Marketing and Information Systems (on sabbatical Spring 2015)

**Assaleh, Khaled**, PhD, Rutgers University, 1993; Professor in Electrical Engineering and Director of Graduate Studies

**Atabay, Serter**, PhD, University of Birmingham, 2001; Associate Professor in Civil Engineering

**Attom, Mousa**, PhD, Kansas State University, 1989; Professor in Civil Engineering



**Aveyard, Mark**, PhD, Florida State University, 2007; Assistant Professor in International Studies

**Awad, Mahmoud**, PhD, Wayne State University, 2005; Assistant Professor in Industrial Engineering

**Ayish, Mohammad**, PhD, University of Minnesota, 1986; Professor in Mass Communications and Head, Department of Mass Communication

**Ayogu, Melvin**, PhD, Ohio State University, 1989; Visiting Professor in Economics and Director, EMBA

## B

**Badawi, Ayman**, PhD, University of North Texas, 1993; Professor in Mathematics and Statistics

**Badni, Kevin**, MA, De Montfort University, 1996; Associate Professor in Art and Design and Head, Department of Art and Design

**Badry, Fatima**, PhD, University of California at Berkeley, 1983; Professor in English

**Baghestani, Hamid**, PhD, University of Colorado, 1982; Professor in Economics

**Bahloul, Maher**, PhD, Cornell University, 1994; Associate Professor in English

**Bahroun, Zied**, PhD, University of Franche-Comté, Besancon, 2000; Associate Professor in Industrial Engineering

**Baker, Emily**, MArch, Cranbrook University, 2012; Assistant Professor in Architecture

**Baker, Jeffrey**, PhD, Texas Tech University, 2008; Associate Professor in Marketing and Information Systems

**Bakri-Kassem, Maher**, PhD, University of Waterloo, 2007; Assistant Professor in Electrical Engineering

**Balthrop, Andrew**, PhD, Georgia State University, 2012; Assistant Professor in Economics

**Banerjee, Madhumita**, PhD, University of Strathclyde, 2006; Visiting Assistant Professor in Marketing and Information Systems

**Bantey, Paul**, MFA, Whitecliffe College of Arts and Design, 2005; Assistant Professor in Art and Design

**Barlas, Gerassimos**, PhD, National Technical University, Athens, 1996; Professor in Computer Science and Engineering

**Bartholomew, Aaron**, PhD, College of William and Mary, 2001; Professor in Biology, Chemistry and Environmental Sciences

**Bateman II, Robert E.**, PhD, University of Utah, 2004; Associate Professor in Management (on leave Academic Year 2014–2015)

**Beheiry, Salwa**, PhD, University of Texas at Austin, 2005; Assistant Professor in Civil Engineering

**Bejtlic, Zinka**, MA, International University of Sarajevo, 2012; Assistant Professor in Art and Design

**Belkhodja, Omar**, PhD, Laval University, 2006; Associate Professor in Management

**BenDaya, Mohamed**, PhD, Georgia Tech USA, 1998; Professor in Industrial Engineering

**Bennett, Haydn**, PhD, Strathclyde University, 2002; Visiting Associate Professor in Management

**Ben Ouezdou, Monji**, PhD, Case Western Reserve University, 1987; Visiting Professor in Civil Engineering

**Berbić, Amir**, MFA, The School of the Art Institute of Chicago, 2004; Associate Professor in Art and Design (on leave Fall 2014)

**Berenger, Ralph**, PhD, Idaho State University, 2002; Associate Professor in Mass Communication

**Blank, Leland T.**, PhD, Oklahoma State University, 1970; Professor in Industrial Engineering and Dean, College of Engineering

**Bley, Jörg**, PhD, Florida Atlantic University, 2000; Professor in Finance and Associate Dean, School of Business Administration

**Bodolica, Virginia**, PhD, HEC Montreal Business School, 2006; Associate Professor in Management

**Boisvert, Jean**, PhD, Macquarie Graduate School of Management, 2007; Associate Professor in Marketing and Information Systems

**Boubakri, Narjess**, PhD, Laval University, 2000; Professor in Finance and Head, Department of Finance

**Breslow, Harris**, PhD, University of Illinois, Champaign-Urbana, 1995; Associate Professor in Mass Communication

**Brodtkorb, Tor**, LLB, McGill University, 2000; Assistant Professor in Management

## C

**Cerro, Camilo**, MArch, Columbia University, 1997; Assistant Professor in Architecture

**Chappell, Henry**, PhD, Yale University, 1979; Professor in Economics

**Chathoth, Prakash**, PhD, Virginia Polytechnic Institute and State University, 2002; Associate Professor in Marketing and Information Systems

**Chazi, Abdelaziz**, PhD, University of North Texas, 2004; Associate Professor in Finance

**Chebbi, Rachid**, PhD, Colorado School of Mines, 1991; Professor in Chemical Engineering

**Choulli, Tahir**, PhD, University of Franche-Comté, Besancon, 1997; Visiting Associate Professor in Mathematics and Statistics

**Chowdhury, Muhammad**, PhD, The University of Western Ontario, 2010; Visiting Assistant Professor in Chemical Engineering

**Ciftci, Mustafa**, PhD, The University of Texas at Dallas, 2006; Assistant Professor in Accounting

**Conty, Arianne**, PhD, University of California, 2009; Assistant Professor in International Studies

**Cotterall, Sara**, PhD, Macquarie University, 2011; Associate Professor in English

**Crompton, Peter**, PhD, Lancaster University, 2003; Associate Professor in English

## D

**Daghfous, Abdelkader**, PhD, Pennsylvania State University, 1997; Professor in Marketing and Information Systems

**Dahm, Carl Bob**, MFA, University of Hartford, 2007; Associate Professor in Art and Design

**Dalibalta, Sarah**, PhD, University of Leicester, 2008; Assistant Professor in Biology, Chemistry and Environmental Sciences

**Danila, Liliana**, MA, Clemson University, 2005; Assistant Professor in Economics

**Darayseh, Musa**, PhD, University of Nebraska-Lincoln, 1990; Professor in Accounting

**Darras, Basil**, PhD, University of Kentucky, 2008; Assistant Professor in Mechanical Engineering

**Darwish, Naif**, PhD, Oklahoma State University, 1991; Professor in Chemical Engineering and Head, Department of Chemical Engineering

**Desai, Gaurang**, PhD, University of Western Sydney, 2009; Assistant Professor in Art and Design

**Dezhbakhsh, Ibrahim**, PhD, Ohio State University, 1989; Professor in Economics (on leave Academic Year 2014–2015)

**Dhaouadi, Rached**, PhD, University of Minnesota, 1990; Professor in Electrical Engineering

**Di Sabatino, Peter**, MArch, Washington University, 1985; Professor in Architecture and Dean, College of Architecture, Art and Design

**Dougan, Brian**, MArch, Texas A&M University, 1989; Associate Professor in Architecture

**Drew, Stephen**, PhD, University of Cambridge, 1976; Visiting Professor in Management and Interim Director, SBA Executive Education

## E

**Efimov, Dmitry**, PhD, Moscow State University, 2008; Assistant Professor in Mathematics and Statistics

**Egilmez, Mehmet**, PhD, University of Alberta, 2009; Assistant Professor in Physics

**El-Banna, Hassan**, PhD, McMaster University, 1981; Visiting Professor in Mechanical Engineering

**El-Baz, Hazim**, PhD, University of Missouri, Rolla, 1991; Associate Professor in Industrial Engineering

**Eleftheriou, Maria**, PhD, University of Leicester, 2011; Assistant Professor in Writing Studies

**El-Emam, Magdi**, PhD, Queen's University, 2003; Associate Professor in Civil Engineering

**El-Fakih, Khaled**, PhD, University of Ottawa, 2002; Associate Professor in Computer Science and Engineering

**El-Hag, Ayman**, PhD, University of Waterloo, 2004; Associate Professor in Electrical Engineering

**El Kadi, Hany**, PhD, University of Alberta, 1993; Professor in Mechanical Engineering and Associate Dean, College of Engineering

**El-Kadri, Oussama**, PhD, Wayne State University, 2006; Associate Professor in Biology, Chemistry and Environmental Sciences

**El-Khatib, Sami**, PhD, New Mexico State University, 2007; Assistant Professor in Physics

**El-Sakran, Tharwat**, PhD, University of Bangor, 1990; Professor in English

**El-Sayed, Yehya**, PhD, Graduate School of City University of New York, 2006; Assistant Professor in Biology, Chemistry and Environmental Sciences

**El-Sayegh, Sameh**, PhD, Texas A&M University, 1998; Associate Professor in Civil Engineering

**El-Tarhuni, Mohamed**, PhD, Carleton University, 1997; Professor in Electrical Engineering; Associate Dean, College of Engineering; and Director, CEN Graduate Programs

**Erice, Leopoldo**, DMA, Stony Brook University, 2008; Assistant Professor in Performing Arts (on leave Academic Year 2014–2015)

## F

**Fahim Aly, Elrefaie**, PhD, Polytechnic Institute of New York, 1993; Visiting Professor in Electrical Engineering

**Faiq, Said**, PhD, Salford University, 1991; Professor in Arabic and Translation Studies

**Fattah, Kazi**, PhD, University of British Columbia, 2010; Assistant Professor in Civil Engineering

**Fedtke, Jana**, PhD, University of South Carolina, 2012; Visiting Assistant Professor in English

**Filipović, Zlatan**, MFA, Alfred University, 2001; Associate Professor in Art and Design (on sabbatical Spring 2015)

**Fredrick, Daniel**, PhD, Texas Christian University, 2003; Assistant Professor in Writing Studies

## G

**Gadalla, Mohamed**, PhD, University of Alabama, 1988; Professor in Mechanical Engineering

**Gahramanov, Emin**, PhD, Colorado State University, 2007; Associate Professor in Economics

**Gandhi, Neena**, PhD, University of Delhi, 2006; Assistant Professor in Writing Studies

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