AUS | الجامعة الأميركية في الشارقة
American University of Sharjah

GRAD-UATE

CATALOG
2019–2020

AUS | الجامعة الأميركية في الشارقة
American University of Sharjah

Graduate Catalog

2019–2020

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.

His Highness Sheikh Dr. Sultan bin Muhammad Al Qasimi

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

Chancellor’s Message

Since its founding by His Highness Sheikh Dr. Sultan bin Muhammad Al Qasimi, Member of the Supreme Council of the United Arab Emirates and Ruler of Sharjah, American University of Sharjah (AUS) has earned a reputation for providing academic programs recognized for quality and a rich multicultural campus environment offering opportunities for engaging in extracurricular activities.

AUS is an independent not-for-profit American-accredited institution of higher education offering undergraduate and graduate degrees to students from around the world. AUS and its programs have been recognized by both local and international accreditation.

A dedicated staff and accomplished full-time faculty members with terminal degrees earned at some of the leading institutions in the world distinguish the university. As an AUS student, you will benefit from the faculty’s commitment to teaching and their engagement in research, scholarship and creative activity. The diverse AUS campus community offers a range of opportunities for intellectual growth and personal development.

This catalog provides an overview of the university’s programs and policies, and will serve as your guide to academic life. If you require additional information about the programs or policies, please contact the relevant office and we will assist you.

I am pleased to welcome you to AUS, and I look forward to your contributions to enriching the campus community.

Kevin Mitchell

Chancellor

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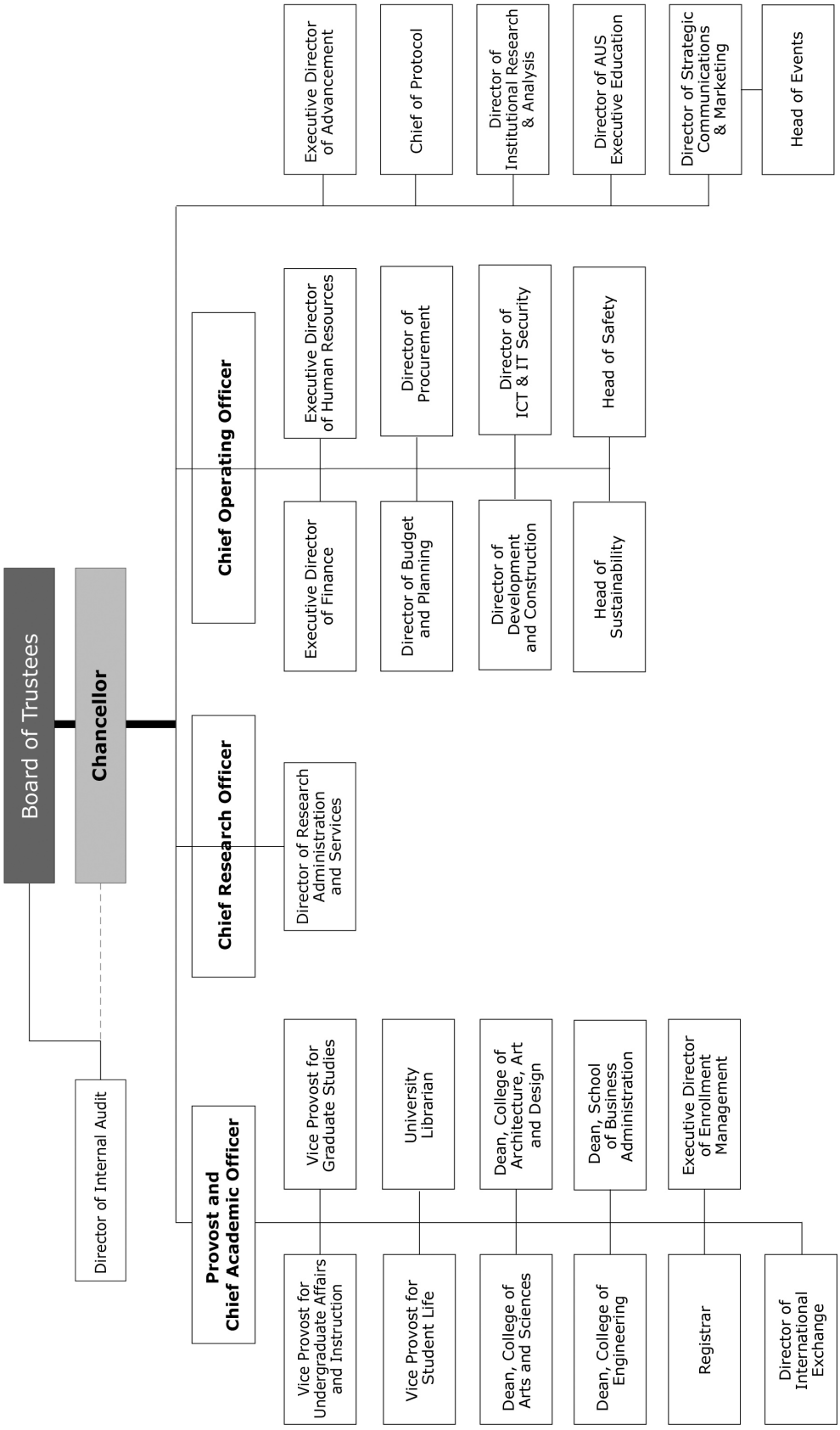
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Graduate Academic Calendar 2019–2020

Fall Semester			2019
June	2	Sunday	Admission applications deadline for master's degree programs for Fall Semester 2019 (for new students applying for assistantship) Assistantship applications deadline for master's degree programs for Fall Semester 2019 for new students
July	25	Thursday	Admission applications deadline for master's degree programs for Fall Semester 2019 (for students not applying for assistantship)
August	22	Thursday	Residential halls open
	25	Sunday	Registration for new students begins
	28	Wednesday	Welcome session for new students
September	1	Sunday	First day of classes Late registration and add/drop period begin
	8	Sunday	Late registration and add/drop period end, 5:00 p.m.
			Deadline to pay Fall Semester 2019 tuition fees without late payment penalty, 5:00 p.m.
	26	Thursday	Applications for Fall Semester 2019 graduation due
November	7	Thursday	Deadline to withdraw from a course without a grade penalty, 5:00 p.m.
			Last day to move from thesis to project and vice versa
	10	Sunday	Admission applications deadline for master's degree programs for Spring Semester 2020 (for new students applying for assistantship) Assistantship applications deadline for master's degree programs for Spring Semester 2020 for new students
	19	Tuesday	Advising and early registration for Spring Semester 2020 begins
December	1–3	Sunday–Tuesday	No classes (university closed): UAE National Day holiday
	14	Saturday	Last day of classes
	15–19	Sunday–Thursday	Examination period
	21	Saturday	Fall Semester 2019 Commencement*
Spring Semester			**2020**
December	26	Thursday	Admissions applications deadline for master's degree programs for Spring Semester 2020 (for students not applying for assistantship)
January	16	Thursday	Residential halls open
	19	Sunday	Registration for new students begins
	22	Wednesday	Welcome session for new students
	26	Sunday	First day of classes Late registration and add/drop period begin
February	2	Sunday	Late registration and add and drop period end, 5:00 p.m. Deadline to pay Spring Semester 2020 tuition fees without late payment penalty, 5:00 p.m.
	20	Thursday	Applications for Spring Semester 2020 graduation due
March	26	Thursday	Application for Summer Term 2020 graduation due
	29–4 (April)	Sunday–Saturday	No classes: Spring Break
April	9	Thursday	Deadline to withdraw from a course without a grade penalty, 5:00 p.m.
			Last day to move from thesis to project and vice versa
	19	Sunday	Advising and early registration for Summer Term 2020 and Fall Semester 2020 begins
	30	Thursday	Deadline to submit Summer Permission to Take Courses Outside AUS forms Admission applications deadline for PhD degree programs for Fall Semester 2020 Assistantship applications deadline for PhD degree programs for Fall Semester 2020
May	16	Saturday	Last day of classes
	17–20	Sunday–Wednesday	Examination period
	21	Thursday	Admissions applications deadline for master's degree programs for Summer Term 2020
	31	Sunday	Admission applications deadline for master's degree programs for Fall Semester 2020 (for new students applying for assistantship) Assistantship applications deadline for master's degree programs for Fall Semester 2020 for new students
June	6	Saturday	Spring Semester 2020 Commencement*
Summer Term			**2020**
June	7–8	Sunday–Monday	Registration for Summer Term 2020
	9	Tuesday	First day of classes Late registration and add/drop period begin
	11	Thursday	Late registration and add/drop period end, 3:00 p.m. Deadline to pay Summer Term 2020 tuition fees without late payment penalty, 3:00 p.m.
July	6	Monday	Deadline to withdraw from a course without a grade penalty, 3:00 p.m. Last day to move from thesis to project and vice versa
	20	Monday	Last day of classes
	21–23	Tuesday–Thursday	Examination period
	30	Thursday	Admission applications deadline for master's degree programs for Fall Semester 2020 (for students not applying for assistantship)

* Commencement dates are tentative and are subject to change.

Note: Classes missed on Sundays, Mondays and Tuesdays in Fall Semester 2019 will be compensated. Schedules will be announced by the concerned college/school graduate programs director.

Directory

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

	Telephone	Fax	Email
General Information	558 5555	558 5858	info@aus.edu
Department			
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 Undergraduate Admissions Graduate Admissions	 515 1000 515 1050	515 1020	https://infodesk.aus.edu
Advancement and Alumni Affairs	515 2547	515 2297	oaaa@aus.edu
Career Services	515 2063	515 2065	careerservices@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 2759	deancas@aus.edu
College of Engineering	515 2948	515 2979	deancen@aus.edu
Corporate Relations	515 2016	515 2065	oaaa@aus.edu
Executive Education	515 4405/4721	--	discoverexeced@aus.edu
Finance	515 2185	515 2190	finance@aus.edu
Graduate Studies	515 2934	--	ogs@aus.edu
Grants and Scholarships	515 2005/55/60/72	515 4050	scholarship@aus.edu
Health Center	515 2699	515 2690	clinic@aus.edu
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Institutional Research and Analysis	515 2206	558 5858	oira@aus.edu
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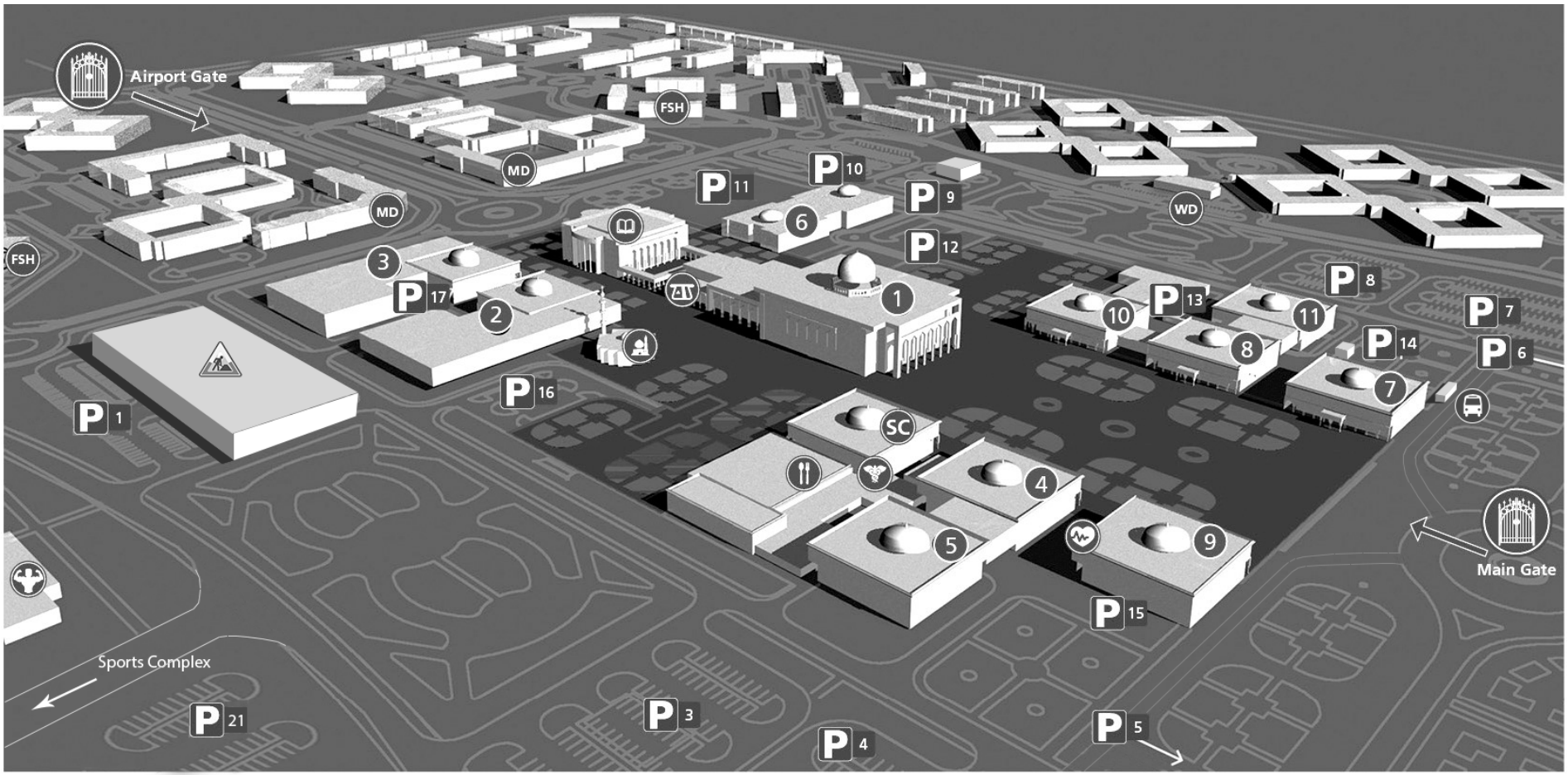
Provost and Chief Academic Officer	515 2020	515 2150	provost@aus.edu
Public Relations	515 2077	515 2078	gr@aus.edu
Registrar	515 2031	515 2040	registration@aus.edu
Research	515 2208	515 4025	research@aus.edu
School of Business Administration	515 2310	515 4065	deanofsba@aus.edu
Sponsorship Liaison Services	515 1016	--	sponsors@aus.edu
Strategic Communications and Marketing	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 Programs	515 4772	515 4770	osaslp@aus.edu
Student Residential Life	515 2244/2434	515 2294	res-halls@aus.edu
Testing Center	515 1111	--	testingcenter@aus.edu
Undergraduate Affairs and Instruction	515 2281	515 2050	vpua@aus.edu
University Counseling Services	515 2792/2677/2685	--	ucs@aus.edu
Emergency Numbers			
Maintenance Emergency	515 2100		
Medical Hotline (24 hours)	050 635 7651		
Security	050 626 7818		



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

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

	Pharmacy
	Health Center
	Bank
FSH	Faculty/Staff Housing
WD	Women's Dorm
MD	Men's Dorm
	Engineering Sciences Building (Under Construction)
	Bus Stop


THE AMERICAN UNIVERSITY

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The University

Historical Preamble

American University of Sharjah (AUS) was founded in 1997 by His Highness Sheikh Dr. Sultan bin Muhammad Al Qasimi, 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) seeks to be globally recognized as the leading university in the Arab World, renowned for outstanding teaching, learning, research and scholarship while fostering innovation that positively impacts society.

Mission Statement

American University of Sharjah provides distinctive teaching, learning, research and scholarship, educating and mentoring lifelong learners who contribute to society through intellectual inquiry, ethical behavior and civic responsibility.

Delivering an American-style liberal arts based undergraduate education in the context of UAE culture and society, AUS ensures our graduates are well-rounded, versatile, critical thinkers with the ability to compete on a global scale.

With our broad offering of PhD and master's programs, AUS provides students with the highest level of education and scholarship in their chosen field.

Committed to world-class research and innovation, our scientific and technological advancements render a permanent impact on global and regional challenges.

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 28 majors and 46 minors at the undergraduate level, 14 master's degree programs and one doctoral degree program.

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 Education's Higher Education Affairs Division in the United Arab Emirates.

AUS has been accredited in the United States of America by the Middle States Commission on Higher Education (3624 Market Street, Philadelphia, PA 19104, USA, Tel +1 215 662 5606) since June 2004.

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

The School of Business Administration is accredited by the Association to Advance Collegiate Schools of Business (AACSB International), ww.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.

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 13 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 29 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 ongoing 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, which regularly ranks among the world's safest countries, 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 also a city of learning and the arts, ranking among the Top 75 Best Student Cities (QS, 2016). 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. In recognition of its contributions to intercultural dialogue through books and reading, Sharjah was named the 2019 UNESCO World Book Capital. This context facilitates the university's intention to be an academic center at the intersection of ancient cultural traditions and contemporary intellectual currents. Sharjah boasts nearly 30 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. These include services such as banking, dining, transportation, laundry, minimarts, a full-service post office and copy center, a bookstore, a travel office, a hairdresser, a barbershop and a pharmacy.

Parking facilities, free and paid, are provided for faculty, staff, students, residents and visitors. AUS reserves the right to restrict or prohibit access to the campus.

The Office of Protocol and Security is responsible for campus security, as well as serving as the university's contact with federal and local government entities, embassies and consulates. The office also provides services such as AUS ID cards, parking stickers, lost and found, assistance with car registration, assistance with procedures related to traffic violations and on-campus accidents, vehicle assistance and official letters required by the University City Police. The Office of Protocol and Security is located in the west Mezzanine Floor of the Main Building (offices MM 29/30/31/32/33) and can be reached at 06 515 2114/515 2074/2075 or at aus_security@aus.edu.

Campus safety is monitored by the Safety division, which provides information on occupational safety and health hazards, and promotes a safe and healthy environment on campus. The Safety division is located in the Campus Service Center (office 1022) and can be reached at 515 2068.

Immigration-related services are offered for faculty, staff and students, including passport custody, medical test assistance, and the processing of visas and residence permits. For specific details, contact Public Relations at gr@aus.edu.

Detailed information on campus services is available in the Life at AUS section of the AUS website and in the *Student Handbook*, available at www.aus.edu/student-handbook.

Facilities and Resources

Advancement and Alumni Affairs

The Office of Advancement and Alumni Affairs (OAAA) 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, OAAA also seeks to publicize the university's programs, goals and achievements to the off-campus community, including alumni, parents and other constituencies of the university.

OAAA 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.

OAAA 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.

OAAA 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 Careers Forum, the annual Alumni Reunion and the annual Career Fair, and provides information on job opportunities, internships and summer employment. OAAA 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 about OAAA, please visit www.aus.edu/oaaa or contact the office at oaaa@aus.edu.

Architecture, Art and Design Facilities

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. Additional spaces, which are shared by all curricula, include exhibition galleries, a lecture hall, seminar rooms, a media wall, digital classrooms, high-end computing labs

and comprehensive printing facilities. CAAD students and faculty also enjoy access to a variety of labs, which are among the most advanced facilities found in universities internationally. CAAD labs cover a wide spectrum of making, both analog and digital, including conventional material fabrication as well as advanced digital technology. The labs are grouped into three categories: Digital Fabrication, Material Fabrication and Media Labs. Digital Fabrication Labs include CNC routers, industrial robotic arms, thermoforming, laser cutting machines and a number of 3D printers. Material Fabrication Labs include a comprehensive woodshop and metalshop, and ceramics studio. The Media Labs contain production spaces, editing suites, photography and printmaking studios, as well as a media equipment center.

AUS Executive Education

The mission of AUS Executive Education is to provide educational opportunities to lifelong learners who want to refresh their skills and knowledge, display mastery in core competencies of their areas of specialization, stay ahead of their competition, and communicate clearly, think critically and solve problems creatively. Through AUS Executive Education, AUS offers individuals and organizations access to the knowledge and expertise of its faculty. Drawing on the resources and facilities of university, AUS Executive Education offers a wide range of non-credit professional certificates and mini-MBAs for executives in addition to custom programs. Executive education at AUS is an essential and continuously expanding activity, connecting academia and industry. The Jafar family has shown in many instances their support to the function of executive education at AUS, as demonstrated with the establishment of the Jafar Center for Executive Education in 2011 (see Jafar Center for Executive Education later in this section). Visit execed.aus.edu or email discoverexeced@aus.edu for more information.

Computer Learning Resources

Information Technology (IT) 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 and administrative purposes. Services provided include email, learning management system (Blackboard), online collaboration, academic mobile applications, wire/wireless network connections, audio/video conferencing, network storage, telephone and printing 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 dormitories and academic areas of the campus.

AUS departments and programs offer a range of specialized and general 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.

Interactive Trading Floor

The Interactive Trading Floor (ITF) at American University of Sharjah is a technologically advanced 24-seat learning space designed to be the exact duplicate of the trading floor found in typical Wall Street or global investment firms, including the same live feeds, industry software and analytical tools such as Capital IQ, Thomson Reuters, and Zawya, as well as state-of-the-art Bloomberg terminals.

The ITF allows students to apply analytical models and trading techniques to real time market data, thereby extending theory into practice. Assignments integrating live data, trading simulations, analytical assignments and practical cases as well as trading competitions are used to promote interactive learning and facilitate a profound understanding of the intricacies of financial markets.

Jafar Center for Executive Education

Located in the School of Business Administration, the Jafar Center for Executive Education (JCEE) provides 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.

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, refining, water, materials, thermodynamics, fluid flow, heat transfer, and process computer simulation.

Civil engineering laboratories contain equipment and facilities to support teaching and research in structural, geotechnical, geological, water resources and environmental engineering and construction materials.

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

Electrical engineering laboratories focus on electronics, electric power, control, measurements, machines, communications and signal processing, antennas and microwave, 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.

The Engineering Systems engineering laboratory provides students with advanced software to develop their skills in system modeling, system analysis and decision making. The lab has specialized optimization and simulation software to solve practical systems engineering problems in various areas such as supply chain management, production and inventory systems, maintenance engineering, quality engineering, engineering economics, project management and more.

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 250 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 Studio and Creative Laboratories

Students in the Department of Mass Communication benefit from an audio-visual studio in news presentations, talk shows and dramatic works. Students also benefit from high-tech digital classroom laboratories with Mac workstations featuring industry-standard graphic design, desktop publishing, video effects, video editing and multimedia software.

Science Laboratories

The science programs benefit from up-to-date laboratories and equipment that provide a rich general and research laboratory experience for AUS students.

The biology laboratories are equipped with the latest light and phase compound microscopes, including a workstation with image analysis capabilities; a laminar flow sterile hood; electrophoresis equipment; cryostat and microtome units; bone densitometer; a freeze drier; growth chambers and incubators; a gel documentation system; a UV trans-illuminator; refrigerated microcentrifuges; a trans-blot semi-dry transfer apparatus; a gel dryer; a CO2 cell incubator; a -80 °C freezer; a tissue homogenizer; and a thermocycler for DNA amplification.

The environmental sciences and chemistry laboratories are equipped with the latest sampling and analytical instrumentation including AA, GC-MS, FTIR, TOC, uHPLC, ICP-MS, a 400 MHz Bruker Biospin NMR, various spectrophotometers, a rapid kinetic apparatus and physisorption apparatus.

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.

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 over 161,000 items that includes reference materials, books, DVDs, and magazines and scholarly journals. In addition to its print collections, the library provides access to over 280,000 e-books, thousands of electronic journals and over 90 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 quiet study areas 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.

Office of Strategic Communications and Marketing

The Office of Strategic Communications and Marketing is responsible for developing, overseeing and implementing a comprehensive marketing and communication strategy that strengthens AUS's reputation and positioning both nationally and internationally. Aligned with the university's vision, mission and strategic directions, the office is responsible for achieving AUS's short- and long-term marketing objectives by successfully targeting and communicating with key stakeholders and core constituencies. The office works closely with the institution's leadership to advance AUS's local, regional and international positioning aspirations by actively supporting all aspects of its institutional advancement agenda; efficiently manage its media, print and electronic communication tools to engage and inform internal and external stakeholders; and ensuring campus-wide communications processes.

Research and Grants

AUS supports and promotes all research and scholarly work 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 human and animal subjects. 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. All studies involving animal subjects undergo protocol evaluation by the Institutional Animal Care and Use Committee (IACUC) before any study is undertaken.

For further information on the university's research and grant opportunities, please visit the AUS website or email research@aus.edu.

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 analyze the region's earthquake activity. The Earthquake Observatory also provides expertise 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 in laboratory and field; and noise and vibration analysis.

The Earthquake Observatory provides training workshops for engineers on seismic hazard and site response analysis, liquefaction analysis, geophysical techniques, structural analysis and design for earthquake loading, geotechnical analysis and design of foundations for earthquake loading, and the development of earthquake-resistant design codes.

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 Research Lab

The Mechatronics Research Lab 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 Research Lab offers excellent networking opportunity with leading industries in the region as well as top academic institutions worldwide. Areas of expertise within the research lab include embedded and distributed process control, remote monitoring, nonlinear and intelligent control systems, robotics and autonomous systems, unmanned vehicles and machine vision.

Shared Instrumentation Facility

The Shared Instrumentation Facility (SIF) 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. Non-AUS community members are granted access to the facility on a fee basis.

The SIF goals are to:

- provide training and basic analytical research support for faculty and students at AUS
- house expensive, multi-user instruments that require a 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

Testing Center

The AUS Testing Center serves as a central point of testing for both the AUS campus and the community.

The center administers placement tests for newly admitted AUS students and facilitates general university testing. The center also offers internationally recognized tests and vocational tests. In addition, it offers proctoring services for external tests, such as distance-learning examinations.

The Testing Center has professional trained proctors certified by ETS and Pearson VUE®. It is an authorized TOEFL iBT Test Center and a Pearson VUE® authorized Test Center (PVTC Select). AUS main testing partners are the College Board, ETS, AMIDEAST and the British Council.

Tests offered by the center include Institutional paper-based TOEFL (ITP), Internet-based TOEFL (iBT), paper-based IELTS, computer-delivered IELTS, SAT, TWE, TOEIC, Fundamentals of Engineering Exam (FE), the Principles and Practice of Engineering Exam (PE), MBA Admission Test, ICAEW-CFAB Exam, ADC (Australian Dental Council) Exam, Graduate Management Admission Test (GMAT), CISCO, Kaplan QLTS Exam and the Federation RCP (Royal College of Physicians) Exam.

For more information, visit www.aus.edu/testing-center.

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.

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

Health Education Programs

As part of an educational institution, 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 awareness campaigns on health-related issues such as first-aid training and CPR courses.

Health Insurance Plans for Students

Health insurance is available for graduate students. It is compulsory for AUS-sponsored (visa sponsored by AUS) graduate students, unless covered by private insurance (proof of coverage must be submitted to UHC). It is optional for graduate students who are not sponsored by AUS.

As part of the semester/term registration procedures, AUS-sponsored graduate students are required to enroll in health insurance Plan I. Likewise, graduate students who choose to have insurance coverage through AUS need to register in health insurance Plan I. Students must visit the UHC during the semester/term registration period and submit the required health insurance registration documents (for a list of these documents, see www.aus.edu/healthcenter) by the semester/term registration deadline to avoid incurring government fines at the time of UAE residence visa renewal. The University Health Center will not be liable for any such fines.

For information on the health insurance plans coverage, visit www.aus.edu/healthcenter.

University Sports Facilities

Student Athletics and Recreation manages the sports facilities, including the Sports Complex and the Sports Pavilion. The Sports Complex consists of indoor facilities such as basketball,

tennis, squash and volleyball courts; multipurpose halls; a 50-meter swimming pool; saunas; fitness centers with free weights and exercise machines; an aerobics hall and a multipurpose hall for table tennis/martial arts. Outdoor sports facilities include the Sports Pavilion, a 400-meter running track, a soccer field, a cricket ground, a cricket practice net and a baseball field.

The AUS Sports Facilities are to benefit the entire AUS community. Students, staff, faculty members and their dependents enjoy free usage of these facilities.

Details on the AUS sports facilities are available in the *Student Handbook* and at www.aus.edu/osa/athletics. Interested AUS community members can also visit the Sports Complex reception or call 515 2778.

Student Life on Campus

Student 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 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/student-handbook.

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

For more information, please refer to the *Student Handbook* or visit www.aus.edu/osa/judicialaffairs.

Community Services

AUS Community Services is a link between students and the various needs found in society. Community Services allows students to experience first-hand the value of serving others through charity, awareness and outreach programs. It involves them personally in community events that enrich their life experiences. Community Services coordinates a variety of volunteer programs and strongly encourages students to contribute to the development of new ones. Current volunteer programs are listed in the Student Life section of the university website and in the *Student Handbook*.

Students who are interested in learning more about these programs should visit Community Services located in the Student Center (office A222), call 515 2794 or email 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.

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, visit www.aus.edu/cas/performing-arts-program or email paevents@aus.edu.

Graduate Student Association

The Graduate Student Association (GSA) is an interest-oriented association under Students Clubs and Organizations. GSA represents the interests and concerns of AUS graduate students. It strives to support and promote the identity and values of the graduate student body. Through various activities and initiatives, such as meetings, networking events, sports, research discussion groups and more, the GSA enriches the lives of graduate students and enhances the quality of their educational experience, building a strong sense of community both on and off campus.

Graduate students are automatically members of the GSA for each semester they are enrolled. The GSA is managed by the GSA Council, an elected group of students.

For more information about the GSA, please contact gsa@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 visit www.aus.edu/graduate_assistantship.

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 provides a host of out-of-class learning opportunities in extracurricular areas for students to engage and develop the student life experience at AUS. Student Affairs transforms student life with a purpose, engaging students in activities that facilitate their holistic development. Student involvement in OSA-initiated activities enables them to accomplish their personal and educational goals. Students are engaged in diverse programs, activities and events and provided services through Student Athletics and Recreation, Student Development and Organizations, Student Clubs and Organizations, Community Services, Student Employment, the Student Multicultural Learning Program, Student Leadership Programs, Student Residential Life and Judicial Affairs.

More information on Student Affairs is available at www.aus.edu/student-affairs. Students can also visit the Office of the Vice Provost for Student Life (M-217 on the Second Floor of the Main Building), call 06 515 2166 or email studentaffairs@aus.edu.

Student Athletics and Recreation

The Office of Student Affairs offers students multiple opportunities to develop their sports abilities in a variety of sports. Full-time and part-time coaches and trainers in Student Athletics and Recreation help develop student's core areas in athleticism, skills in team sports, and sportspersonship and to adopt a disciplined and healthier approach to sports. AUS offers a variety of individual and team sports, fitness and leisure activities, as well as broad-based competitive and recreational programs. For more information, visit the Sports Complex reception or www.aus.edu/osa/athletics or call 515 2778.

The university's intramural sports program complements students' academic, social and cultural education. Involvement in intramural sports activities reduces stress, promotes team bonding and provides an opportunity to socialize.

Student Athletics and Recreation offers students the opportunity to participate in local, regional and international intercollegiate sports tournaments 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; Student Development and Organizations' 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 workstations, TV lounges, a floating theatre and a multipurpose room.

Student Development and Organizations manages the Student Center facilities and all events and activities that take place at the center throughout the year. For more information on the Student Center call 06 515 2716.

Student Clubs and Organizations

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

Student Development and Organizations 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.

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/student-clubs-and-organizations-manual or visit Student Clubs and Organizations in the Student Center (A246-247).

Student Council

His Highness Sheikh Dr. Sultan bin Muhammad Al Qasimi 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 Provost for Student Life and the Chancellor.

The AUS Student Council is an elected body that articulates undergraduate students' views and interests in the university. The Student Council is a vehicle for ensuring that undergraduate students can have a voice in formulating university priorities and policies. It also provides a structure for greater student involvement on campus. The Vice Provost for Student Life advises the Student Council. For information, please see the *Student Handbook,* or visit the Student Council office in the Student Center (office A107) or consult the Student Council web page at www.aus.edu/student-council.

Student Development and Organizations

Student Development and Organizations 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. Student Development and Organizations 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 the Student Development and Organizations office in the Student Center (office A252).

Student Leadership Programs

Student Leadership Programs (SLP) fosters a wide range of opportunities for students to develop their leadership, personal and communication skills and prepares them for a lifelong commitment to leadership and good citizenship. SLP engages students in local, regional and international conferences and Model United Nations simulations that aid in the development of character, public speaking skills, confidence, mindset and overall leadership capabilities. Students can choose to get involved in programs such as the Peer Leaders Program, Emerging Leaders Program, Women's Leadership and Enrichment Program, and the Youth Leadership Training Program. They can also can participate in the AUS Student Lecture Series and attend workshops under the Student Training and Workshop Series.

For more information, visit offices A248, A249 and A250 in the Student Center, go to www.aus.edu/leadership-program, email osaslp@aus.edu or call 515 4771.

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 information, visit www.aus.edu/student-multicultural-learning-program, email osasmlp@aus.edu or visit SMLP office A247 in the Student Center.

Student Publications

AUS students can publish their original work such as articles, short stories, cartoons or any other composition through two student publications, the *Leopard* and *Realms*. Students interested in contributing to or working on these publications should contact Student Development and Organizations for further information.

Student Residential Life

The main objective of Student Residential Life 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/residential-halls. Priority in room allocation is given to undergraduate students.

Students with Physical Challenges

AUS students who require support due to physical challenges should contact the Office of Student Affairs at studentaffairs@aus.edu. Please also refer to the Academic Support Center section below.

Student Educational Services

Cisco Academy

AUS hosts a Cisco networking academy in the College of Engineering. The academy is both an Academy Support Center (ASC) and an Instructor Training Center (ITC) that trains students and professionals alike on a variety of cutting-edge technology subjects such as networking, cybersecurity, and internet-of-things (IoT). The academy prepares its students for industry-standard certificates. For more details, see the College of Engineering section of this catalog, visit www.aus.edu/cen/cisco or email ciscoacademy@aus.edu.

Drones Academy

The AUS College of Engineering hosts the first university-based drone academy in the United Arab Emirates. The academy was established in conjunction with Exponent Technology Services LLC (ETS) to provide students and professionals with the needed drone piloting skills and certification at all levels. The academy has an active research and development drone laboratory serving as a test-bed for innovative drone-based research projects. For more information, please visit www.aus.edu/cen/drone-academy or email drone-academy@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. The institute offers industry-related IT courses in the areas of networks, storage, security, connected devices, and cloud computing. For more information, see the College of Engineering section of this catalog or visit www.aus.edu/cen/hp-institute or email hpi@aus.edu.

Study Abroad

The International Exchange Office (IXO) 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, IXO welcomes, orients and supports international degree-seeking students during their time studying at AUS.

In addition to facilitating student exchanges and study abroad, IXO also administers processes enabling faculty-led study tours, visiting guests-in-residence, 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.

University Counseling Services

University Counseling Services (UCS) 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

UCS provides different types of counseling services: individual counseling, group counseling and crisis counseling.

Counseling is strictly confidential. The information shared with a student 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 visiting the UCS at the rear of the University Health Center.

For more information, please email UCS at ucs@aus.edu.

Self-Help Resources

UCS 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 posttraumatic stress disorders and trauma therapy, adjusting to university life, personal development, positive psychology, motivational exercises and memory improvement. Workshop topics and dates are advertised around campus, or students can email UCS at ucs@aus.edu to learn about future workshops. Students are encouraged to contact UCS with ideas for future workshops.

Writing Center

The AUS Writing Center, located on the ground floor of the AUS Library building (room LIB 024) and in the School of Business Administration building (room SBA 1176), helps students become independent, confident writers. Available to all AUS students, the Writing Center offers one-on-one writing conferences by appointment or on a drop-in basis. Consultations may include thesis development, organization, outlining, paragraph development, vocabulary, sentence structure and mechanics. Students may visit the Writing Center to work on drafts, to do research or to work with a consultant on particular aspects of their writing. The Writing Center also offers workshops on a variety of writing topics throughout the academic year.

For more information, visit www.aus.edu/cas/writing-center.

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 15 programs of graduate studies: 14 master's degree programs and one PhD degree program. 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 Biomedical 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
- Doctor of Philosophy in Engineering - Engineering Systems Management

School 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
https://infodesk.aus.edu

To apply to graduate studies at AUS, applicants must:

- complete the online application (www.aus.edu/apply)
- 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
- pay the application fee

Incomplete applications are not processed.

Some diplomas might require attestation from the Ministry of Education's Higher Education Affairs Division in the UAE. For details, consult www.aus.edu/required-attestations. Applicants who earned their undergraduate degrees from universities outside the UAE must present a Certificate of Equivalency for their graduation certificates from the UAE Ministry of Education's Higher Education Affairs Division. For details, refer to www.aus.edu/uae-certificate-of-equivalency.

Applicants must satisfy both the general university requirements for graduate admission and the degree 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 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.

Waiver of English Proficiency Requirement

Applicants to AUS graduate degree programs may be exempted from the TOEFL/IELTS admission requirement provided the conditions below are met. Decisions regarding exemptions are made by the Office of Enrollment Management/Graduate Admissions. Applicants are required to present supporting documents.

Applicants to a Master's Degree Program

Native speakers of English who have earned an undergraduate degree from an institution located in an English-speaking country and where English is the language of instruction are exempt from the TOEFL/IELTS requirement.

Non-native speakers of English who have earned their undergraduate degree from selected institutions where English is the language of instruction and who can provide evidence of having earned a minimum Institutional Paper-based TOEFL (ITP) score of 500 [Internet-Based TOEFL (iBT) minimum score of 80] or a minimum IETLS (Academic Version) score of 5.0 at undergraduate admission could also be exempt from this requirement. Applicants to the MBA and TESOL degree programs do not qualify for this waiver.

Holders of a bachelor's degree awarded by AUS are exempted from the TOEFL/IELTS admission requirement.

Applicants to a PhD Degree Program

Native speakers of English who have earned a graduate degree from an institution located in an English-speaking country and where English is the language of instruction are exempt from the TOEFL/IELTS requirement.

Holders of a master's degree awarded by AUS are exempted from the TOEFL/IELTS admission requirement.

International Applicants

International applicants (i.e., graduates of universities located outside the UAE) are required to submit complete applications to the Office of Enrollment Management/Graduate Admissions (www.aus.edu/apply) by the dates specified in the Application Deadlines section hereafter.

International applicants are required to present an equivalency of their degree from the UAE Ministry of Education's Higher Education Affairs Division. The ministry provides this service at both its

Abu Dhabi and Dubai offices. This necessitates that applicants prepare and attest all the required documents before leaving their home country or the country they have graduated from. For information regarding attestations, refer to www.aus.edu/attestations-1. For information on the equivalency processes, consult www.aus.edu/uae-certificate-of-equivalency. Applicants may also contact the Office of Enrollment Management/Graduate Admissions.

Admitted international students who need visas for the UAE should submit the visa application at least two months prior to the first day of class. For further details and for the visa application form, please refer to www.aus.edu/international-students.

Application Deadlines

Applicants should submit complete applications to the Office of Enrollment Management/Graduate Admissions by the following dates:

Master's Degree Programs

Spring Semester 2020

December 26, 2019

Summer Term 2020

May 21, 2020

Fall Semester 2020

July 30, 2020

PhD Degree Programs

Fall Semester 2020

April 30, 2020

General University Requirements for Graduate Admission

Full Admission

For full admission to a graduate program at AUS, an applicant must meet the general university admission requirements detailed in the sections below. Some degree programs may require additional specific admissions requirements. For details, please refer to the relevant degree program section of this catalog.

Master's Degree Programs

Applicants to a master's degree program must:

- hold a four-year bachelor's degree from an independently accredited university recognized by the UAE Ministry of Education's Higher Education Affairs Division and by AUS (applicants with a bachelor's degree obtained outside the UAE must submit an equivalency of their degree from the UAE Ministry of Education's Higher Education Affairs Division)
- have attained a minimum undergraduate cumulative grade point average (CGPA) of 3.00 (on a scale of 4.00) or its equivalent
- have attained a minimum iBT score of 80 or a minimum IELTS score of 6.5 (Academic Version)

PhD Degree Programs

Applicants to a PhD degree program must:

- hold a master's degree from an independently accredited university recognized by the UAE Ministry of Education's Higher Education Affairs Division and by AUS. Applicants with a master's degree obtained outside the UAE must submit an equivalency of their degree from the UAE Ministry of Education's Higher Education Affairs Division.
- have achieved a minimum master's degree cumulative grade point average (CGPA) of 3.00 (on a scale of 4.00) or its equivalent. Some programs may require a higher CGPA.
- have attained a minimum iBT score of 80 or a minimum IELTS score of 6.5 (Academic Version)

Only applicants meeting the full admission requirements will be considered for PhD degree program admission.

Conditional Admission

Applicants to a master's degree program, holding a four-year bachelor's degree from an independently accredited university recognized by the UAE Ministry of Education's Higher Education Affairs Division and by AUS, but who otherwise do not meet the general university requirements for full admission to a master's degree, may be granted conditional admission, provided one of the following requirements is met:

- the applicant has achieved a minimum undergraduate cumulative GPA of 3.00 (on a scale of 4.00) or its equivalent, and an iBT score of less than 80 but greater or equal to 71 or an IELTS score (Academic Version) less than 6.5 but greater or equal to 6.0
- the applicant has achieved an undergraduate cumulative GPA less than 3.00 but greater or equal to 2.50, and have attained a minimum iBT score of 71 or a minimum IELTS score of 6.0 (Academic Version).

Note: The MBA and TESOL degree programs require a minimum Internet-Based TOEFL score of 80 or a minimum IELTS (Academic Version) score of 6.5. Conditional admission to these two degree programs may only be granted accordingly.

Conditional admission applicants may be required to meet additional requirements as specified by their requested master's degree program. Applicants should consult the relevant master's degree program section of this catalog. In addition, each master's degree program may assign undergraduate prerequisite courses and/or specially tailored courses for conditional admission applicants. Credit hours from these courses do not satisfy the master's degree program graduation requirements and are not used in the calculation of the cumulative GPA.

Achieving Full Admission Status

To be accorded full admission into their master's degree program, conditional admission students must satisfy the following requirements and any other conditions imposed by the degree program:

- students who did not meet the minimum TOEFL/IELTS scores for full admission must achieve, before the beginning of the second semester of study, the required TOEFL or IELTS scores (iBT score of 80 or IELTS score (Academic Version) of 6.5)
- Students who did not meet the minimum undergraduate cumulative GPA required for full admission must achieve a cumulative GPA of at least 3.00 in the first two graduate-level courses (for a minimum of six credit hours). Courses must be completed over a maximum period of two consecutive semesters, with the summer term considered as a semester. Students who fail to meet this requirement by the conclusion of the second semester of study may petition the Office of Enrollment Management/Graduate Admissions for an extension of one semester/term. Petitions must be submitted for the semester/term immediately following the completion of the first six credit hours of graduate-level courses. Extensions are granted only in exceptional circumstances. Students granted an extension of one semester/term are not eligible for further extensions.

If the above provisions and additional specific conditions imposed by the master's degree program are not met, the student will not be allowed to continue master's degree studies at AUS.

Conditionally admitted students are not eligible to register for more than two graduate-level courses (a maximum of six credit hours) per semester. Further

details on student's course load are provided in Student Course Load under the Academic Policies and Regulations section later in this catalog.

Mature Students Admission

Mature applicants to a master's degree who have earned a four-year bachelor's degree, three or more years ago, from an independently accredited university recognized by the UAE Ministry of Education's Higher Education Affairs Division and by AUS, may be considered for admission under the mature students' admission category, provided the following additional requirements are met:

- The applicant has a demonstrated record of relevant work experience during the period since graduation
- The applicant has achieved a minimum undergraduate cumulative GPA of 2.00 (on a scale of 4.00)
- The applicant has earned a minimum iBT score of 80 or a minimum IELTS score of 6.5 (Academic Version).

Mature admission applicants may be required to meet additional requirements as specified by their requested master's degree program. Applicants should consult the relevant master's degree program section of this catalog.

Applicants to PhD degree programs do not qualify for admission under the mature students' admission category.

Achieving Full Admission Status

To be accorded full admission into their master's degree program, mature admission students must achieve a cumulative GPA of at least 3.00 in the first two graduate-level courses (Master's courses) (for a minimum of six credit hours). Courses must be completed over a maximum period of two consecutive semesters, with the summer term considered as a semester. Students who fail to meet this requirement by the conclusion of the second semester of study may petition the Office of Enrollment Management/Graduate Admissions for an extension of one semester/term. Petitions must be submitted for the semester/term immediately following the completion of the first six credit hours of graduate-level courses. Extensions are granted only in exceptional circumstances. Students granted an extension of one semester/term are not eligible for further extensions.

If the above provision and additional specific conditions imposed by the master's degree program are not met, the student will not be allowed to continue his/her studies at AUS.

Important: Each master's degree program may assign undergraduate prerequisite courses and/or specially tailored courses for applicants admitted under the mature students' admission category. Credit hours from these courses do not satisfy the master's degree program graduation requirements and are not used in the calculation of the cumulative GPA.

Students admitted under the mature student admission category are not eligible to register for more than two graduate-level (master's courses) courses (a maximum of six credit hours) per semester. For further information on student course load, refer to Student Course Load under the Academic Policies and Regulations section later in this catalog.

Non-degree Admission

Non-degree status is assigned to students who enroll in courses at AUS without pursuing a degree. Non-degree status does not apply to exchange, transient and visiting students.

Non-degree graduate applicants must meet the same minimum admission criteria established for full or conditional admission and must submit the corresponding application with all the required documents to the Office of Enrollment Management/Graduate Admissions by the dates specified in the Application Deadlines section hereafter.

AUS graduate students who have been dismissed or who interrupt their studies may not apply for admission as graduate non-degree seeking students.

AUS graduate students enrolled in a degree program may not change their status to graduate non-degree seeking students.

Non-degree graduate students may enroll in any graduate 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 degree-seeking students.

Non-degree graduate students may register for a total of nine credit hours in graduate courses. Non-degree graduate students who do not meet the requirements for full admission may register for no more than two graduate courses (a maximum of six credit hours) in their first semester of study. If all requirements for achieving full admission status of graduate conditionally admitted students are met (refer to the Conditional Admission section earlier in this section), registration in a subsequent semester/term will be allowed. Registration in courses will be subject to approval by the relevant graduate program director. Standard graduate tuition and fees apply.

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

Returning Students Admission

Graduate students in good academic standing who leave AUS for more than two consecutive semesters, inclusive of semesters of complete course withdrawal, must apply as returning applicants. Readmission of returning applicants is subject to AUS academic rules and regulations. All admissions requirements in place at the time of readmission must be met.

Students on academic probation and dismissed students may not apply for readmission.

Transfer Applicants

Applicants transferring from independently accredited universities recognized by the UAE Ministry of Education's Higher Education Affairs Division and by AUS and offering learning experiences equivalent to those offered at AUS may be considered for transfer admission, provided the following conditions are met:

- Applicants have successfully completed one or more semesters at their institution.
- Applicants are in good standing (i.e., not on any probation or dismissal from the institution from which they are transferring).
- Applicants achieved at their institution a minimum cumulative grade point average (CGPA) as required by AUS for that type of institution.
- Prior to their admission to the institutions from which they are transferring, applicants met the AUS General University Requirements for Graduate Admission/Full Admission.

Transfer applicants may not be granted conditional admission.

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 credit hours, see Transfer of Credit Hours later in this section.

Applicants for a Second Degree

Holders of a master's degree awarded by AUS or another independently accredited university recognized by the UAE Ministry of Education's Higher

Education Affairs Division and by AUS may apply for admission to an AUS master's degree program.

Applicants for a second master's degree must apply through the Office of Enrollment Management/Graduate Admissions. A complete application, along with the official transcript of the previously earned master's degree, must be submitted to the Office of Enrollment Management/Graduate Admissions by the dates specified in the Application Deadlines section.

To be considered for admission, applicants must satisfy the General University Requirements for Graduate Admission, as well as any specific requirements set by the master's degree program they are applying to. Holders of a master's degree awarded by AUS are considered to have met the AUS General University Requirements for Graduate Admission.

Graduate courses applied towards a previously earned master's degree may be considered for transfer of credit hours. Whether the first master's degree was awarded by AUS or by another university, the grades earned for courses completed to fulfill the requirements of the first master's degree program will not count in the calculation of the cumulative GPA for the second master's degree program. Approved courses that meet the graduation requirements of the second master's degree program will be recorded as transferred courses. For more information on transfer of credit hours, see Transfer of Credit Hours later in this section.

Policies and regulations governing registration, grades and graduation requirements apply.

The Offer of Admission

The offer of admission, regardless of type, is valid only for the semester for which the candidate has applied. Applicants can defer their admission for one semester. A written request should be submitted to the Office of Enrollment Management/Graduate Admissions. Applicants who wish to defer the application for one academic year or longer must submit a new application; an application fee will apply.

Applicants wishing to change their admission to a new program post deferral must submit a complete new application. An application fee will apply. Applicants applying for graduate assistantship under the new program must submit new reference letters addressed to the new program.

Falsified Admission Documents

AUS reserves the right to take disciplinary action up to and including the revocation of admission or permanent dismissal if the university determines that information has been misrepresented in application documents or falsified documents have been submitted in support of an application for admission.

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 AUS in the context of a semester exchange program. Exchange students should check with their home institutions about the transferability of AUS credit hours 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, or they must have successfully completed the CEFR English C1 level. 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 (IXO) a complete online application, accessible through 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 Saturday of March for summer and fall enrollment and the first Saturday of October for spring enrollment

Exchange graduate students register through IXO. They may enroll in any university graduate-level 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. Tuition and fees are governed by exchange agreements. Details are available with AUS IXO.

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

For further information, please contact IXO at 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 is assigned to students who have obtained their undergraduate or graduate degrees from AUS and have returned to take extra course(s) at AUS.

Applicants seeking graduate transient student status at AUS and meeting the above criteria could be considered for graduate transient student admission. Applicants must submit to the Office of the Registrar the complete Transient Student Application available at www.aus.edu/registration/forms.

Graduate transient students may enroll in any university graduate-level 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.

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 credit hours to their programs.

To be admitted as a visiting graduate student, a student must be enrolled in a graduate degree 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, or they must have successfully completed the CEFR English C1 level. 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 (IXO) a complete online application accessible through 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 Saturday of March for summer and fall enrollment and the first Saturday of October for spring enrollment.

If the application is approved, registration is completed through IXO. Visiting graduate students may enroll in university graduate-level courses for which they have the necessary academic background and qualifications, 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. Tuition and fees of visiting students coming through third-party providers are governed by annual financial agreements. Details are available with AUS IXO. Visiting students applying directly to AUS are charged the standard graduate tuition and fees.

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

For further information, please contact IXO at 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 graduate degree status or from exchange/visiting to graduate degree status by submitting a complete application through the Office of Enrollment Management/Graduate Admissions by the deadlines specified in Application Deadlines earlier in this section. All admissions requirements for transfer admission in place at the time of the change of status request must be met. In addition, students wishing to transfer to degree status must have achieved a minimum cumulative GPA of 3.00 in courses completed at AUS.

Courses taken at AUS while under exchange/non-degree/visiting status can be used to satisfy registration and graduation requirements where applicable. Grades earned in such courses will count in the cumulative GPA.

Courses completed outside AUS prior to admission to the degree program are evaluated for transfer of credit hours at degree program admission time. The university rules and regulations governing transfer courses and credit hours will apply.

The degree program graduation requirements are determined by the catalog effective when the student is admitted to the degree program or the catalog effective the semester of the student's graduation. For more information, please refer to the Catalog section under Graduation Requirements.

Transfer of Credit Hours

Transfer applicants may transfer up to nine graduate credit hours from recognized graduate schools at independently accredited universities recognized by the UAE Ministry of Education's Higher Education Affairs Division.

Applicants for transfer of credit hours must submit their official transcripts, syllabi and other material required by the program to the Office of Enrollment Management/Graduate Admissions by the application deadlines specified earlier in this section.

Transfer credit hours evaluation must be requested by the applicant at the time of admission. Transcripts of transfer students will be evaluated only once. Applicants with transcripts from two or more institutions of higher education are eligible for transfer evaluation of only the courses completed at the institutions meeting the AUS transfer admission requirements.

To be evaluated for transfer, the course work must have been taken for graduate credit and applied toward a graduate degree at the host institution. Only graduate-level courses completed with a grade of B or higher will be evaluated for transfer of credit hours.

Courses identified as equivalent in content and level to AUS courses will be transferred as the equivalent AUS course. Other appropriate graduate-level courses may be transferred as electives.

Courses completed more than five years from the start date of the first semester of study of the current graduate degree program at AUS are not transferable.

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

Courses related to areas taught within the School of Business Administration will be evaluated for transfer of credit hours only if completed within institutions accredited by the Association to Advance Collegiate Schools of Business (AACSB International), 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. Credit hours of transferred courses count in the cumulative earned hours and may apply towards meeting graduation requirements.

Decisions regarding the award of transfer credit hours are made by the appropriate academic division at AUS. The Office of the Registrar maintains and updates the transfer students' records.

Course Waiver

A graduate student may qualify to waive any or all of the discipline-bridging courses of a degree program. In general, a course may be waived if the student has completed comparable undergraduate-level course work at an independently accredited university recognized by the UAE Ministry of Education's Higher Education Affairs Division. 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.

Students with professional experience and/or holders of professionally recognized certificates (e.g., CPA or CFA) that indicate mastery of the content of a discipline-bridging course may be granted a waiver.

Some discipline-bridging courses could require two undergraduate courses to be waived whereas other courses could require one undergraduate course. For more information, refer to the relevant master's degree program section later in this catalog.

Decisions regarding the waiver of a course are made by the appropriate degree program at AUS. The Office of the Registrar maintains and updates the students' records. The waiver must be established at the time of admission.

Tuition and Fees

Graduate Tuition and Fees

Graduate student tuition, additional fees and housing charges are given in the tables below.

Non-degree and transient students must pay the same tuition and fees as regular students.

Tuition and fees of visiting students coming through third-party providers are governed by annual financial agreements. Visiting students applying directly to AUS are charged 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	4,750/per credit
College of Arts and Sciences	3,790/per credit
College of Engineering (Master's and PhD degree programs)	4,750/per credit
School of Business Administration	4,750/per credit

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	1,340
Lab/Technology Fee B	Applies for each registered course that has Lab/Tech Fee Rate B noted in its course description	1,480

Other Fees (in AED)	
Application Fee	450*
Student Activities	100 per regular semester*
Thesis/Project Extension Fee	200
Thesis/Dissertation Binding Fee	350
Health Insurance *Health insurance is mandatory for AUS-sponsored graduate students, unless covered by private insurance. It is optional for graduate students who are not sponsored by AUS. Graduate students with insurance coverage through AUS will be assigned to Plan I. For information on the health insurance plans coverage, visit www.aus.edu/healthcenter.*	
Students joining AUS or renewing their insurance plan in a Fall semester	600 per semester* 300 for the summer term*
Students joining AUS in a Spring semester	600 for the spring semester* 300 for the summer term*
Students joining AUS in a summer term	300 for the summer term only*

* 5% VAT charge applies

Student Housing Fees (in AED)		
Room Reservation Fee	First time residential hall application fee. Non-refundable. Deductible from the student residential hall fees	500
Utilities Service Fee	Fee automatically added to any residential hall room reserved (except in summer)	290*
Refundable Dorm Maintenance Deposit	One-time fee applied when students first register for residential halls— refundable after cancelation	1,000

* 5% VAT charge applies

Student Housing Fees (in AED)			
Room Type	**Description**	**Regular Semester**	**Summer Term**
Private	Single occupancy with private bath and kitchenette	17,230	6,890
Semi-Private	Single occupancy with a shared bath and kitchenette	12,200	4,880
Sharing	Double occupancy with a shared bath and kitchenette	9,280	3,710
Single	Single occupancy with a common bath and no kitchenette (men only)	6,430	-
Double	Double occupancy with a common bath and no kitchenette (men only)	3,740	-

Fines/Charges (in AED)	
Late Registration	500*
Late Payment (if tuition and fees are not settled by the first due date)	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*

* 5% VAT charge applies

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. 0011-200170-001, IBAN number: AE02 0410 0000 11200170 001 (student's name and ID number must be noted on transfer)
- direct cash deposit at Al Ansari Exchange or UAE Exchange (student's name and ID number must be noted on the transfer)

A charge of AED 500 + 5% VAT 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 cashiers and/or the Student Accounts office located on the mezzanine floor of the Main Building. Questions concerning student accounts should be directed to Student Accounts by calling 515 2282/515 2039 or sending an email to studentaccounts@aus.edu.

Deferment of Tuition and Fees

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

- 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 or through Student Accounts.

Late Fees and Fines

All university students must adhere to university deadlines, rules and regulations. Late fees and fines, with 5% VAT if applicable, may apply for late book returns, parking violations, breakage, late registration, late tuition payment, etc.

Graduate Student Employment Opportunities

AUS offers graduate students two types of on-campus employment: graduate assistantships as research assistants on faculty research projects and graduate work-study positions.

Assistantships are available to qualified graduate students and are competitively awarded and merit-based.

Graduate students granted an assistantship opportunity are required to be available on campus during work hours.

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

For information on eligibility and application guidelines, please visit https://www.aus.edu/graduate-assistantships-and-employment for master's students' assistantships and https://www.aus.edu/graduate-assistantships-0 for PhD students' assistantships.

Sponsorship Liaison Services

Sponsorship Liaison Services is the main link between external organizations and their sponsored AUS students. Sponsorship Liaison Services provides various support services to both the sponsoring organizations and sponsored students, including coordinating admission and orientation, communicating progress reports, offering guidance, coordinating financial-related matters with the AUS Finance Department, and arranging for meetings between sponsors and students.

For more information, please contact Sponsorship Liaison Services at +971 6 515 1111, submit a query on infodesk.aus.edu or visit www.aus.edu/sponsorship-liaison-services.

Academic Integrity

Student Academic Integrity Code

Academic integrity lies at the heart of intellectual life. As an institution committed to the advancement of knowledge in a manner consistent with the highest ethical standards, AUS affirms the importance of respecting the integrity of academic work. The AUS Student Academic Integrity Code (referred to herein as Code) describes standards for academic conduct, students' rights and responsibilities as members of an academic community, and procedures for handling allegations of academic dishonesty.

In order to establish within the AUS student body a sense of ethical responsibility, honor and mutual respect, prior to registration, 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 Code and for ensuring that they understand the requirements for their particular courses (e.g., regarding issues such as collaborative work, use of study aids or take-home examinations, etc.).

Attempts to violate or to assist others in violating the Code, including unsuccessful attempts, are prohibited and will be treated as actual violations.

Definition of Academic Violations

Members of the AUS academic community are expected to conduct themselves with integrity in their work and actions. Violations of the Code include, but are not limited to, the following categories.

Plagiarism

To plagiarize is to use the work, ideas, concepts, images or words of someone else without fully acknowledging the source in all academic work, including assignments, quizzes, examinations, papers and projects. 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 and appropriately citing the source. Plagiarism may also involve misrepresenting the sources that were used or expressing the ideas of someone else in your own words without the appropriate citation.

Inappropriate Collaboration

Collaboration on academic work may be encouraged, but it is important to ensure that contributions are acknowledged. Inappropriate collaboration includes 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 requirements related to collaborative work, peer review, the use of an external entity in the production of work, the use of tutors and editing may vary among courses and students must ensure that faculty members explicitly provide approval in advance of the collaboration.

Impersonation

Students must attend their own classes, be present and sit for all tests and examinations, and personally attend other events associated with a course. The individual impersonated and the impersonator may be subject to sanctions.

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. Students are prohibited from submitting any material prepared by or purchased from another person or company.

Communication is not allowed between or among students, nor are students allowed to consult books, papers, study aids or notes without explicit permission by the faculty member responsible for the course. Dishonesty includes, but is not limited to, communication with another student or an external party using electronic devices during an examination or in-class assignment, 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 among individual professors.

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. If past research is incorporated into current projects, previous work must be appropriately referenced.

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, creative work, 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 Code prohibits theft and the unauthorized use of documents and requires adherence to the laws of Sharjah and the federal laws of the UAE.

The AUS library offers a Copyright and Permissions Service and can assist students with issues and questions related to copyrighted materials and their use. Students may contact copyright@aus.edu for assistance.

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 Code. Complicity in

academic dishonesty is pre-meditated and intentional. This can include, but is not limited to, the following:

- 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 or external party on a computer, mobile phone or other device while an exam is in progress
- providing a student with an advance copy of a test
- posting of notes or other materials from a class (whether the student is enrolled in the class or not) on the Internet, whether or not for a fee, without express permission from the faculty member
- leaving inappropriate materials behind at the site of an exam or test

Adjudication of Academic Offenses

Jurisdiction

Academic cases resulting from alleged violations of the Code are within the jurisdiction of the dean (or appointed designee) of the college/school in which the alleged Code violation occurred.

Faculty members who have knowledge of an alleged violation should report the incident to the dean (or appointed designee) of the college/school in which the alleged Code violation occurred.

A faculty member may exercise discretion in those cases involving a student's judgmental error rather than willful violation of the Code.

Students who wish to bring charges against other students must do so through the faculty member in whose course or academic activity the alleged Code violation occurred. The student who brings the charges must identify himself/herself to the faculty member.

Violations of the Code that involve admission and/or placement testing fall within the jurisdiction of the Vice Provost for Graduate Studies and may result in the revocation of admission or dismissal from the university.

The Adjudication Process

An allegation of dishonesty must be reported to the dean (or appointed designee) and the head of the department or unit in which the offense occurred within five working days of the date of discovery of the alleged offense. Normally an allegation of academic dishonesty must be reported during the semester in which it occurred, however there may be situations in which a violation is discovered after the semester has ended. Reports of an alleged violation must be supported by appropriate documentation.

Once the alleged violation has been reported, faculty members must not 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 and a "Pending Conduct Investigation" statement will be recorded on the student's academic transcript.

The student must remain enrolled in the course in which an infraction has been reported until the adjudication process is complete.

Legal counsel or involvement of any parties other than the student and relevant university personnel is not permitted at any point during the adjudication process.

After receiving complete information, the dean (or appointed designee) will follow the adjudication process outlined below:

a. the dean (or appointed designee) will promptly notify the student of the allegation and inform the student of the date and time of a formal meeting to discuss the charge. The dean (or appointed designee) will also notify the head of the department or unit in which the offense occurred and will consult with the student's dean (or appointed designee) to inform them of the allegation if the student is pursuing a major in another college/school.

b. The dean (or appointed designee) will meet with the student to explain the adjudication process and present the charge and the evidence. If the student fails to attend the meeting, the dean (or appointed designee) will proceed with the process.

c. The student will be given the opportunity to respond to the allegation in writing within two working days.

d. After the deadline for the student to respond to the allegation has passed, the dean (or appointed designee) will consider all evidence and, depending on whether a preponderance of evidence supports the allegation of academic misconduct, take one of the following actions:

   i) dismiss the case

   ii) request that the student resubmit the work in question or retake an examination

   iii) assign a penalty.

e. If a student resubmits the work in question or retakes an examination, the results will be considered in determining whether a preponderance of evidence exists to support the allegation of academic misconduct and the assignment of a penalty.

Penalties

Violations of the Code will be treated seriously, with increasingly severe penalties considered for repeat offenders. A second violation may result in suspension or dismissal.

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

Penalties for an academic offense may include one or more of the following:

a. a lowered grade or loss of credit for the work found to be in violation of the Code (to be specified at the time that the penalty is assigned)

b. a lowered overall grade for the course in which the offense occurred (to be specified at the time that the penalty is assigned)

c. a failing grade of XF for the course in which the offense occurred (to be specified at the time that the penalty is assigned)

d. suspension for the semester/term in which the offense occurred with a possible addition of one or more academic semester(s)/term(s)

e. dismissal from the university

Penalties (a)–(e) will result in non-academic sanctions that may include prohibition from extracurricular activities and the loss of graduate assistantship. See the AUS Student Handbook for details.

For penalties (d) and (e), the student is assigned a grade of N for all semester/term registered courses, with a provision for a grade penalty for the course where the academic offense was reported. No refund or cancellation of tuition fees will be permitted in such cases.

Students are solely responsible for any financial implications resulting from an academic integrity violation.

Students found guilty of an academic integrity violation will not be allowed to complete a course evaluation for the course in which the offense occurred.

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
(temporary separation from the university)

Suspension is effective for not less than the semester/term in which the penalty is levied or for not more than one calendar year. The length of a suspension must be specified in writing when the student is notified of the outcome of the adjudication process.

A student who is suspended is entitled to resume studies in the same college/school at the conclusion of the period of suspension if all academic requirements are met. The student must submit a Reactivation Request Form to the Office of the Registrar. The form is available at www.aus.edu/registration/forms.

Courses completed outside AUS while on suspension do not transfer.

Dismissal
(permanent separation from the university)

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 (or appointed designee) hearing the case has recommended dismissal, the Academic Appeals Review Committee will review the case and make a recommendation to the Provost.

Notification of Penalty

The dean (or appointed designee) hearing the case will notify the student in writing of the outcome of the adjudication process and, if applicable, the assigned penalty.

In addition to the faculty member bringing the charge, the following university officials have a legitimate need to know and will be informed of the outcome of the adjudication process at the time that the student is notified:

- The program director/coordinator in which the offense occurred
- The dean of the college/school and the program director/coordinator responsible for the degree program in which the student is enrolled (if applicable)
- The Vice Provost for Student Life
- The Office of the Registrar
- The Academic Support Center
- The Vice Provost for Graduate Studies

For record keeping of documents pertaining to the infringement of the Code, please refer to the appropriate section under Student Records herein.

Appeal of Penalty

In cases concerning notation to the student's record [penalties (c)–(e)], students will be notified in writing of their right of appeal. Appeals must be submitted in writing to the Vice Provost for Graduate Studies within five working days of the date of notification of the outcome of the adjudication process by the dean (or appointed designee).

Appeals are limited to grounds of excessive sanction, improper procedure and unavailability of relevant evidence at the time of the meeting with the dean (or appointed designee) to discuss the charge with the student.

The Vice Provost for Graduate Studies may affirm, modify, or remand the case to the dean (or appointed designee) with instructions for further action. The decision of the Vice Provost is final.

For penalty (e), the Academic Appeals Review Committee will review the case and make a recommendation to the Provost. The Provost may affirm, modify, or remand the case to the dean with instructions for further action. The decision of the Provost is final.

Notation of an Academic Integrity Code Violation Penalty

A student's standing that impacts his or her eligibility to continuously enroll at AUS affects academic progress and, for this reason, is deemed transcript-appropriate. The general type of infraction, academic or disciplinary, is noted on the student's transcript as well as the office responsible for issuing the student's separation from the institution.

Penalties (c)–(e) will become a permanent part of the student's file maintained by the Office of the Registrar, with appropriate notation on the student's academic transcript indicating that there has been a violation of the Code.

For penalties (d) and (e), the student is assigned a grade of N for all semester/term registered courses, with a provision for a grade penalty for the course where the academic offense was reported.

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.

For tracking purposes, all academic integrity violations will be recorded in the university's academic integrity database maintained by the Office of the Vice Provost for Graduate Studies.

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 hours transfer cannot be returned to the student or forwarded to other institutions.

The academic record of an individual student is maintained by the Office of the Registrar for a maximum period of five years after the student graduates or leaves AUS. Beyond this retention limit, documents in a student's record are managed in accordance with the AUS Office of the Registrar policy on file retention, which could entail permanent destruction of some of these documents.

Student Privacy Rights

The university reserves the right to disclose students' records to the private or public authority sponsoring the student, if applicable. AUS is required to comply with requests for student information originating from the UAE Government and the Sharjah Government.

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.
- 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.
- request non-disclosure, within the extent of UAE federal and local laws, of personally identifiable and/or academic information from education records.

For further information on students' records, please check with the Office of the Registrar/Student Records section.

Academic Transcripts

The Office of the Registrar maintains and updates the academic records of all students who register at the university. The permanent record reflecting the academic achievements of each student throughout his/her entire study period at the university is referred to as academic transcript or transcript.

At the end of every semester/term, the Office of the Registrar updates the academic transcripts of the students who were registered in that semester/term. Students may access their transcripts through the secure online student information system. Students are encouraged to review their records online periodically. Online transcripts are not official and are only intended to update students on their academic achievement.

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. A nominal fee applies. The university will issue only complete transcripts, not parts of the student record.

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

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 Student Academic Integrity 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)–(e) were assigned: The notation indicating a violation of the Student Academic Integrity Code will become a permanent part of the student's file maintained by the Office of the Registrar.
- For tracking purposes, all violations are recorded on the university's academic integrity database maintained by the Office of the Vice Provost for Graduate Studies.

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. A nominal fee applies.

Registration and Course Information

Course 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 research areas available within the program as well as existing resources, to offer them the opportunity to meet their program directors, and to introduce them to the graduate level academic policies and regulations.

Registration Process

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

Students 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 credit hours before the end of their first semester at AUS.

Exchange and visiting students register through the International Exchange Office (IXO). Non-degree, study abroad and transient students register with the Office of the Registrar. Registration in courses as an exchange, non-degree or a visiting student requires the approval of the relevant graduate program director. For further details, see the corresponding sections under Admission to Graduate Studies earlier in this catalog.

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

Registration by way of proxy is not permitted.

For thesis, final project and dissertation registration, see Thesis, Final Project and Dissertation within the Graduation section herein.

Academic Advisors

Academic advising is an essential element of the educational process. American University of Sharjah requires advisor-student meetings at least once per semester/term. Students on academic probation or facing academic difficulties are guided by academic advisors and might be required to have more frequent meetings with their advisors. However, students are responsible for selecting their courses, meeting course prerequisites and adhering to the most recent university policies and procedures. The program director/program coordinator assists the student in interpreting university policies and procedures. Students are required to consult with their program director/program coordinator 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.

Doctoral programs require the PhD candidate to form a Dissertation Advisory Committee (DAC), the chair of which is the principal dissertation advisor of the student, guiding the candidate develop the PhD proposal and dissertation.

Student Course Load

A graduate student's course load comprises the total number of credit hours of master's or PhD courses registered in a semester/term.

Some master's degree students may be required to complete specific undergraduate-level courses; credit hours generated by these courses are not considered in the calculation of the student's semester/term course load. Likewise, some PhD degree students may be required to complete specific master's courses; the credit hours generated by these courses are not considered in the calculation of the student's semester/term course load.

Good Academic Standing

The maximum course load of a graduate student in good academic standing is nine credit hours per semester. The program director/coordinator may approve a student in good standing to register for up to 12 credit hours per semester.

Academic Probation

The maximum course load of a graduate student on academic probation is six credit hours per semester.

Summer Term Registration

A maximum total of six credit hours is allowed during a six-week summer term.

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

A graduate student may not register for more than three credit hours of thesis/final project/dissertation during a six-week summer term.

Conditional Admission

The maximum course load of a conditionally admitted graduate student is six credit hours per semester/term.

Mature Students Admission

Graduate students admitted under the mature students' admission category are not eligible to register for more than two graduate-level courses (a maximum of six credit hours) per semester/term.

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, available at www.aus.edu/registration.

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

Auditing Courses

A student who wishes to attend a graduate or an undergraduate course but who does not wish to take examinations, receive a final grade and earn credit hours for the course may register to audit the course with the permission of the instructor and the

student's program director/coordinator. The instructor may establish standards of class participation and attendance that must be met.

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. Credit hours of an audited course are included in the calculation of the student's course load for the semester/term.

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

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 hours.

Independent Study Course Registration

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

Master's degree students are allowed to take one independent study course. A second independent study, for a maximum total of eight credit hours used toward the graduation requirements of a degree program, could be approved by the student's graduate program director/coordinator.

PhD degree students are eligible to complete a maximum total of nine credit hours in independent study work.

An independent study can only be used to meet the elective courses requirement.

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

Students interested in registering for an independent study course must complete the Independent Study Application form available at 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 credit hours)

An independent course is an existing course 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 credit hours)

A directed study is an investigation under faculty supervision beyond the scope of existing courses. Directed study courses are numbered as 596, 696 or 796. The three-letter course prefix reflects the field of study of the course.

A directed study application must be accompanied by a syllabus following the formal syllabus format used by the College/School and providing a description and clearly specified outcomes.

Study Abroad Opportunities for AUS Students

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 (IXO) 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 institution is recognized by the UAE Ministry of Education's Higher Education Affairs Division.
- The host institution is not located in a country the student is a citizen/resident of. Students will be permitted to study in a country in which they hold citizenship/residency provided the total period of residency in the country has not exceeded five years, and no more than two years of secondary education were completed in the intended host country.
- The language of instruction of the course(s) taken at the host institution 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 Education's Higher Education Affairs Division, or at an official AUS exchange partner university, may take course(s) at 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.

Of particular interest might be institutions with which AUS has semester exchange programs. Details on exchange programs are available with AUS IXO at www.aus.edu/ixo.

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 credit hours of graduate courses in residence at AUS.

Contact hours for courses at the host institution must be equivalent to or greater than the contact hours required for equivalent courses at AUS.

Courses taken at AUS cannot be repeated in the context of a study abroad program.

For study abroad courses equivalent to AUS courses, course prerequisites, as specified in the AUS catalog in effect at the time of registration at the host institution, must be met prior to starting the course at the host institution.

For courses with a laboratory component at AUS, both lecture and laboratory must be taken concurrently at the host institution.

Courses related to areas taught within the School of Business Administration will be evaluated for transfer of credit hours only if completed within institutions that are accredited by AACSB or EQUIS, or at 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.

Application Process

Interested students must apply online to IXO. Information related to application fees and deadlines is available at 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 rest of the application process. Students should be

aware that further admission requirements might exist at the host institution.

Students must submit the completed Course Permission Form–Outgoing Students to IXO by the deadlines specified on the application form. The IXO approved application form must be deposited at the Office of the Registrar by the end of the third week of classes of the AUS summer term for study abroad in a fall semester, and prior to the student's departure for study abroad in a spring semester. Failure to do so will result in no credit hours 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 institution.

AUS students studying abroad are not eligible to be enrolled for any type of course work at AUS for the semester overlapping with the study abroad semester.

Transfer of Credit hours

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

- Upon completion of the course(s), the student submits to the AUS Office of the Registrar an official transcript from the host institution demonstrating that the student met the minimum course 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 institution.
- The student earned the equivalent of a B grade or higher on the study abroad course.
- The student had passed the AUS course prerequisites prior to starting the course at the host institution (for study abroad courses equivalent to AUS courses).

Grades earned in courses completed outside AUS 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.

While credit hours will be temporarily transferred, the student will not be awarded his/her graduate degree until AUS receives the UAE Ministry of Education's Higher Education Affairs Division verification of the host institution's transcript.

For further information on studying abroad, please contact IXO at ixo@aus.edu.

Summer/Winter Courses outside AUS

Requirements

An enrolled student is eligible to apply to take courses at another college/university during the summer or in the period between the fall semester and the spring semester (herein referred to as winter) with the aim of transferring credit hours to AUS. To this end, students must choose institutions meeting the following conditions:

- The host institution is located outside the UAE.
- The host institution provides learning experiences similar to those offered by AUS.
- The host institution is recognized by the UAE Ministry of Education's Higher Education Affairs Division.
- The language of instruction of the course(s) taken at the host institution 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 Education's Higher Education Affairs Division, 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.
- The summer term at the host institution must not begin prior to the end of the spring semester examination period at AUS. The winter term at the host institution must not begin prior to the end of the fall semester examinations period at AUS.
- The summer term at the host institution must end before the first day of classes of the fall semester at AUS. The winter term at the host institution must end before the first day of classes of the spring semester at AUS.

Requirements

Students wishing to take summer/winter courses outside AUS must be in good academic standing at AUS at the time that their application is reviewed.

Contact hours for courses at the host institution must be equivalent to or greater than the contact hours required for equivalent courses at AUS.

The summer/winter courses at the host institution must not be taken as attempts to repeat AUS courses.

For courses equivalent to AUS courses, course prerequisites, as specified in the AUS catalog in effect at the time of registration at the host institution, must be met prior to starting the course at the host institution.

For courses with a laboratory component at AUS, both lecture and laboratory must be taken concurrently at the host institution.

Courses related to areas taught within the School of Business Administration will be evaluated for transfer of credit hours only if completed within institutions that are AACSB accredited or EQUIS accredited, or at 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 hours

Students may transfer no more than six credit hours for a six-week summer session conducted at a host institution.

For summer sessions of a different duration and for winter terms, AUS allows no more than the equivalent credit hours of the six-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 credit hours. Students must consult with the relevant graduate program director/coordinator when planning for summer/winter courses outside AUS.

Application Process

Prior to registering for courses at the host institution, students must complete the Permission to Take Summer/Winter (Mini-Mester) Courses Outside AUS form available at www.aus.edu/registration/forms and submit it to the Office of the Registrar. Forms must be submitted by the end of the 14th week of classes of the preceding spring semester for a summer term and by the end of the 14th week of the preceding fall semester for a winter term. Credit hours will not be awarded if the completed form is not submitted to the Office of the Registrar by the specified deadlines.

Registration

AUS students taking courses outside AUS in the summer are not eligible to be enrolled for any type of course work at AUS for the overlapping AUS summer term.

Transfer of Credit hours

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

- Upon completion of the summer course(s), and before the end of the following fall semester (end of the following spring semester for winter courses), the student submits to the Office of the Registrar an official transcript from the host institution demonstrating that the student met the minimum course passing grade requirement, as indicated on the permission form.
- The student was in good academic standing at AUS at the time summer/winter courses were taken at the host institution.
- The student had passed the AUS course prerequisites prior to starting the course at the host institution (for summer abroad courses equivalent to AUS courses).

Grades earned in summer/winter courses completed outside AUS 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.

While credit hours will be temporarily transferred, the student will not be awarded his/her graduate degree until AUS receives the UAE Ministry of Education's Higher Education Affairs Division verification of the host institution's transcript.

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

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.

Attendance, Withdrawal and Interruption of Studies

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.

Students are fully responsible for dropping or withdrawing from courses that they are not attending.

Course Withdrawal

Students may withdraw from courses without grade penalty by submitting the Withdrawal Form (available at 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 10th week of classes (end of the fourth week of classes for a 6-week summer term). 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. The semester/term tuition is not recalculated following course withdrawal.

As of the 11th week of classes and up to the end of the 13th week 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. Students are not eligible to withdraw from course past the 13th week of classes.

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) 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 are fully responsible for dropping or withdrawing from courses that they are not attending.

A student may not withdraw from a course in which an academic integrity offense was committed until the case has been reviewed and the adjudication process is complete.

Withdrawal from the University

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

If complete withdrawal occurs during the add and drop period, the courses are dropped and are not recorded in the student's transcript. If withdrawal occurs prior to the end of the 10th week of classes (end of the fourth week of classes for a six-week summer term), a grade of W is assigned to the student for the specific course. In addition, the refund schedule outlined in the table below will apply.

Withdrawal from the University*
Before the end of the first week of classes
100% refund excluding non-refundable deposits
During the second week of classes
50% refund of tuition
During the third week of classes
25% refund of tuition
After the third week of classes
0% refund

As of the 11th week of classes, a grade of WF will be assigned.

Students are fully responsible for dropping or withdrawing from courses that they are not attending prior to withdrawal from the university. Students who do not complete the withdrawal process prior to withdrawing from the university will not be eligible for any otherwise applicable tuition refund or adjustment.

Withdrawal of PhD Candidacy

PhD candidates who do not successfully defend their dissertation proposal or their final dissertation are requested to withdraw their PhD candidacy. For details, refer to Withdrawal of PhD Candidacy under Academic Dismissal in Grades and Academic Standing later in this section of the catalog.

Interrupted Studies and Reactivation of Student Record

Graduate 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 at an AUS approved study abroad institution for a regular semester are considered to be in residence. A summer term abroad at an AUS approved institution is not considered as a term in residence.

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

Students Away for up to 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. Students with thesis/final project/dissertation work in progress must first secure the approval of their college graduate programs director. To resume their studies, students must submit the Reactivation Request Form to the Office of the Registrar one month prior to registration. The form is available at www.aus.edu/registration/forms. For the purpose of this policy, a semester of complete course withdrawal is considered as a semester of leave.
- Graduate students who were on probation prior to interrupting studies must petition for resuming studies by submitting the Reactivation Request Form (available at www.aus.edu/registration/forms) to the Office of the Registrar, one month prior to registration. Reactivation of the student's record must be approved by the student's program director/coordinator.

Students Away Longer than Two Semesters

- Graduate students in good academic standing who leave AUS for more than two consecutive semesters, inclusive of semesters of complete course withdrawal, must submit a new application for admission to the Office of Enrollment Management/Graduate Admissions.
- Students on academic probation who have been away longer than two consecutive semesters, may not apply for readmission.

Transfer of Credit hours

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 denoting the discipline or field of study, followed by a three-digit number. Courses offered by master's degree programs are assigned 500 and 600-level numbers; courses offered by PhD degree programs are assigned a 700-level number.

Reserved Course Numbers

Certain course numbers denote the course type or the course delivery mode. These numbers are reserved three-digit numbers; the first digit indicates the level of the course and the last two digits indicate the type of the course. Reserved course numbers are listed in the table below:

Course Number	Reserved for
790	Qualifying Examination
x94	Special topic courses
x95	Seminar courses
x96	Independent study courses
x98	Professional project
x99	Thesis/Dissertation

A 2-digit suffix could be appended to the reserved course number to allow the offering of multiple differentiated sections of the same course type, e.g., COE 59401, COE 59402. In this example, 594 indicates a special topic offering; 01 and 02 are the 2-digit suffices differentiating the two offerings.

Course Credit hours Definition

All courses are valued in credit hours. Normally, each credit hour represents 50 minutes of class instruction per week each semester, two to three 50-minute laboratory sessions per week each semester, or one to 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 hours 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 credit hours 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 the graduate program's 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 hours.

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 programs. Students should check with the respective graduate programs for information on when courses will be offered.

To accommodate graduate students' work schedules, most programs offer their courses in the evening or over the weekend. Each course usually meets once a week for a three-hour duration. For details on course schedules, please refer to the semester/term 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 bachelor's, master's and PhD degree programs. Undergraduate degree offerings are listed in the *AUS Undergraduate Catalog*. Master's and PhD degree programs are listed below.

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 Biomedical 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
- Doctor of Philosophy in Engineering – Engineering Systems Management

School of Business Administration

- Master of Business Administration
- Master of Science in Accounting

Change of Program

Graduate students seeking to change their degree program must apply for admission to the new degree program through the Office of Enrollment Management/Graduate Admission. Applications must be submitted by the assigned application deadlines (refer to Application Deadlines in the Admission to Graduate Studies section earlier in this catalog). To be eligible for a change of degree program, the student must meet the requirements for admission to the new degree program. Please refer to the relevant degree program's catalog section for information on admission requirements.

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

In addition, students seeking a change of degree program must consult the graduation requirements of the new degree program, as stipulated in the new student's catalog, to identify specific program graduation requirements and consult with the program director/coordinator to determine how completed courses correspond to the graduation requirements of the new degree program.

Concentrations, Themes and Tracks

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

The Change of Major Form 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 program director/coordinator will forward the approved forms to the Office of the Registrar. Forms must be received by the Office of the Registrar by the end of the Add/Drop period of the following semester/term. Forms received after the end of the Add/drop period of a semester/term will be effective as of the following semester/term. However, declaration forms of prospective candidates for graduation must be received by the Office of the Registrar no later than the end of the 10th week of classes of the semester preceding their graduation semester/term.

Students approved to declare a concentration that is not listed in their degree program, as described in their catalog of record, but listed in the same degree program as described in the most recent academic catalog will have their catalog of record changed to the first academic catalog where the approved concentration was introduced.

Declaration of a Second Major

Master's degree students may select to enroll in two separate majors offered by two different master's degree programs. To declare a second major, the student must submit to the Office of Enrollment Management, within the announced admission deadlines, an application for admission to the program housing the second major. The Office of Enrollment Management will forward the approved application to the Office of the Registrar. Applications received by the Office of the Registrar after the end of the add and drop period of a semester/term will be effective as of the following semester/term.

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

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

Grades and Academic Standing

Examinations

Information about final examination schedules is published by the Office of the Registrar at www.aus.edu/registration. Final examinations of graduate courses are administered within the semester/term examination period published dates and are scheduled by the faculty members teaching these courses.

Failure to Appear for a Final Examination

A student who fails to appear for the examination, will not be permitted to take a make-up examination unless the associate dean of the school/college responsible for the course determines that extraordinary circumstances exist and a make-up examination is warranted. The associate dean will then determine whether a make-up examination can be completed or an I grade should be awarded and the make-up examination should be scheduled at the beginning of the next semester or summer term. For further details, refer to Incomplete Grades later in this section.

Illness Prior to and During Final Examinations

Students are responsible for taking final examinations during the published examination period. If an incapacitating illness prohibits taking a final examination, the student must notify his/her graduate program director/coordinator and provide complete documentation to the University Health Center in advance of the scheduled examination.

Students who begin a final examination are expected to complete it unless a sudden and incapacitating illness requires urgent medical attention. A student whose condition is so serious that medical care is necessary must report immediately to the University Health Center.

If the University Health Center determines that the medical condition prior to or during the scheduled examination period is serious enough to render a student incapable of taking or completing the examination then, based on the recommendation of the University Health Center, the relevant associate dean will determine whether a make-up examination can be completed or an I grade should be awarded and the make-up examination should be scheduled at the beginning of the next semester or summer term. For further details, refer to Incomplete Grades later in this section.

The opportunity to complete a make-up examination will not be provided if compelling medical evidence indicates that taking or completing the examination was an option.

Tardiness

If an instructor allows a student who arrives late for a final examination to take the examination as scheduled, no additional time beyond the period assigned for the examination will be provided.

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
Exceeds Expectation	
A-	equals 3.70 grade points
Meets Expectation	
B+	equals 3.30 grade points
B	equals 3.00 grade points
Below Expectation	
B-	equals 2.70 grade points
C+	equals 2.30 grade points
C	equals 2.00 grade points
Fail	
F	equals 0.00 grade points
Academic Integrity Violation Fail	
XF	equals 0.00 grade points
Withdrawal Fail	
WF	equals 0.00 grade points

Grades not calculated in the grade point average are:

AUD	Audit
AW	Administrative Withdrawal
I	Incomplete
IP	In Progress
N	No Grade
NP	No Pass (thesis, project and dissertation)
P	Pass; credit hours counted
TR	Transfer; credit hours counted
W	Withdrawal
WV	Waive; no credit hours

The minimum passing grade for a graduate course is C. Students who receive an F grade in a graduate course will not be allowed to continue in the university.

Incomplete Grades

The work for a course must be completed by the end of the final examination period of the corresponding registration semester/term. In the case of unexcused incomplete work, an F grade is given for the missing work and the final course grade is computed accordingly.

Only in exceptional cases, such as a compelling medical or other emergency certified in writing by a medical or other professional, is a student assigned an incomplete grade I in a given course, provided the student has been in attendance up until the end of the withdrawal period of the semester/term (also see Examinations earlier in this section). 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 no later than the last day of the examination period of the corresponding semester/term.

An I grade pending beyond the end of the fourth week of classes of the next regular semester will revert into the alternative grade indicated by the instructor of the course on the Incomplete Grade Form. In the event where no alternative grade was indicated on the form, the I grade will revert into an F grade. It is the responsibility of the student to find out from his/her professor the specific dates by which requirements must be fulfilled.

A student who is on academic probation and who was approved for an I grade in a specific semester/term is not eligible for early registration for an upcoming semester/term.

Prospective candidates for graduation with incomplete grades will be awarded their degrees in the semester/term where their courses are successfully completed.

In Progress Grades

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

Prospective candidates for graduation with In Progress grades will be awarded their degrees in the semester/term where the courses are successfully completed.

Graduate students who fail to maintain thesis/final project continuation in a semester without their program director/coordinator prior approval of thesis/final project registration discontinuation, will be assigned an NP grade, resulting in academic dismissal from the master's degree program. Likewise, PhD candidates who fail to maintain dissertation continuation in a semester without their program director prior approval of dissertation registration discontinuation, will be assigned an NP grade, resulting in an automatic withdrawal of candidacy from the PhD degree program.

An IP grade will be changed to an N grade in the following situations:

- the student is approved to discontinue thesis work in order to pursue a final project (or vice versa)
- the student fails to complete the degree program graduation requirements within the time limit on residency and is denied an extension of the residency time limit
- the student is asked to withdraw PhD candidacy
- the student withdraws from the university.

No Grade Entries

A No Grade (N) grade is assigned to a course when an academic integrity violation has been reported and the adjudication process cannot be concluded before the course grade is due for the semester/term. In such cases, the N grade is temporary and the final grade for the course will be entered once the adjudication process is concluded. If a violation of the Student Academic Integrity Code or the Student Code of Conduct results in suspension or dismissal effective for the semester/term in which the offense occurred then an N grade will be entered for all courses except for those that were subject to an XF grade penalty. If suspension or dismissal occurs at the end of a regular semester or summer term and a letter grade has been assigned in a course, the letter grade will revert to an N grade. The Semester GPA and the Cumulative GPA will be recalculated accordingly and a Suspended or Dismissed academic standing will be assigned for the semester/term. For details on transcript notations, refer to Notation of an Academic Integrity Code Violation Penalty under Academic Integrity earlier in this section of the catalog.

An N grade is also assigned as a replacement of an IP grade. For details, refer to the preceding In Progress Grades section.

Repeating Courses

Graduate courses may not 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 up to two graduate courses in a degree program. 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.

Students may not repeat AUS courses at another institution with the aim of transferring credit hours.

Note: Graduate students who receive an F grade in a graduate course will not be allowed to continue in the university.

Class Standing

Master's Degree Students

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

Credit Hours Earned	Class Standing
0–15	Master's Year 1
16 and above	Master's Year 2

PhD degree Students

The class standing of a PhD degree student in a specific semester/term is determined by passing the qualifying exam. PhD degree students who pass the qualifying exam are classified as PhD-Advanced to Candidacy; students who have not yet passed the qualifying exam are classified as PhD-Not Advanced to Candidacy

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 credit hours the course is worth.

Semester Grade Point Average (SGPA)

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

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

Cumulative Grade Point Average (CGPA)

The CGPA is calculated by dividing the sum of the quality points of courses taken in all semesters/terms by the total number of credit hours of all courses taken in all semesters/terms. Only the last entry of a repeated course is considered in the CGPA calculation.

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

Academic Standing

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

Good Academic Standing

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

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

Academic Probation

If a graduate student's cumulative GPA falls below 3.00 at the end of any given semester, the student is placed on academic probation. A graduate student placed on academic probation, who fails to remove his/her academic probation by the end of the immediately following summer term, will maintain his/her academic probationary status.

During probationary status, the following conditions apply:

- A graduate student on academic probation may not register for more than six credit hours in a semester. The program director/coordinator may restrict the summer course load of a graduate student on academic probation to three credit hours.
- A graduate student on academic probation may not register for thesis, final project or dissertation.

An academic probation is removed at the end of any semester/term in which the student attains a CGPA of 3.00.

Academic Dismissal

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

Graduate students who receive an F grade in a graduate course are academically dismissed from the university.

PhD degree seeking students who fail the qualifying examination are academically dismissed from the university.

Students who have been academically dismissed may petition for reinstatement to the student's program director/coordinator, one month ahead of registration of the semester immediately following academic dismissal. The Student Petition Form is available at 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 Vice Provost for Graduate Studies. Decisions regarding continuation in the program will be made by the Vice Provost for Graduate Studies in consultation with the appropriate dean (or appointed designee). Reinstatement following academic dismissal is granted only in exceptional circumstances.

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

Withdrawal of PhD Candidacy

Doctoral students who do not successfully defend their dissertation proposal or their final dissertation are asked to withdraw their PhD candidacy. Doctoral students who are asked to withdraw their PhD candidacy are not eligible to continue at AUS, do not qualify for reinstatement and may not apply for readmission. For details, refer to *Office of Graduate Studies Policies and Procedures* document available on iLearn and accessible using the following path: iLearn-Community-Office of Graduate Studies (OGS)-Office of Graduate Studies Policies & Procedures.

Student Petitions and Appeals

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.

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.

Registration related petitions must be submitted to the student's program director/coordinator by the first day of the semester/term the exception is requested for. The office of the associate dean will forward the approved petitions to the Office of the Registrar.

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 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 Graduate Appeals Review Committee through the Office of the Vice Provost for Graduate Studies. Academic appeals requests must be submitted one week before the first day of the following semester.

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 a college/school committee appointed by the dean (or appointed designee). Based on the committee's formal recommendation, the dean (or appointed designee) may grant or deny the appeal and notify the student and the professor responsible for the course of the decision. If a change of grade is warranted, the dean (or appointed designee) will inform the Registrar of the grade change.

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, the student may submit an appeal to the Graduate Appeals Review Committee through the Office of the Vice Provost for 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 Graduate Studies within five working days from the date of notice of the outcome of the grade appeal review by the college/school. The Graduate 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 Provost may deny the appeal and notify the student and the college/school of the outcome or, in the event of improper procedure or new evidence, remand the matter to the appropriate dean (or appointed designee) for review at the college/school level.

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/term 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 Vice Provost for 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, Final Project and Dissertation

Master's theses, final project reports and PhD dissertations 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, final projects and dissertations are defended publicly.

The Office of the Vice Provost for Graduate Studies in collaboration with the Graduate Programs Committee establishes and oversees the regulations and requirements for theses, final projects and dissertations at AUS. Degree candidates are responsible for adhering to these requirements as published in the *Office of Graduate Studies Policies and Procedures* document available on iLearn and accessible using the following path: iLearn-Community-Office of Graduate Studies (OGS)-Office of Graduate Studies Policies & Procedures. 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 Dissertation-Thesis-Final Project Reports* available on iLearn and accessible using the following path: iLearn-Community-Office of Graduate Studies (OGS)- Writing and Formatting Guidelines .

It is AUS policy to maintain master's theses and PhD dissertations in the AUS Archives and to make them available to other students and scholars. The AUS Library is responsible for the archiving and binding of the master's theses and PhD dissertations. Detailed procedures and requirements for submitting master's theses and PhD dissertations to the AUS Library and Archives for binding are outlined in the *Office of Graduate Studies Policies and Procedures* document

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–Institutional Review Board (IRB).

Master's Thesis and Final Project

Registering for Master's Thesis/Final Project Credit hours

Master's degree students registering for thesis/final project credit hours must register through the Office of the Registrar.

Only students in good academic standing may register for thesis/final project credit hours.

Thesis/Final Project First Registration

In the first semester/term of thesis/final project work (no earlier than the second semester/term of enrollment in the master's degree program), a student normally registers for three thesis/final project credit hours working on the thesis/final project proposal. Before the end of the add and drop period, graduate programs 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/term 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 *Office of Graduate Studies Policies and Procedures* document available on iLearn and accessible using the following path: iLearn-Community-Office of Graduate Studies (OGS)-Office of Graduate Studies Policies & Procedures.

Thesis/Final Project Continuous Enrollment

Graduate students who have completed one semester/term of thesis/final project work must maintain continuous thesis/final project enrollment until successful defense of the thesis/final project and the submission of the approved thesis/final project final report.

Students who fail to maintain thesis/final project continuation in a semester without their program director/coordinator prior approval of thesis/final project registration discontinuation, will be assigned an NP grade, resulting in academic dismissal from the master's degree program.

Thesis/Final Project Continuous enrollment in a regular semester

Continuous enrollment in a regular semester is ensured by the Office of the Registrar. Changes to the thesis/final project registration details (thesis/final project title, name of advisor, credit and billing hours) are emailed to the Office of the Registrar by the program director/coordinator before the end of the add and drop period of the corresponding registration semester. In addition, and before the end of the add and drop period of the registration semester, the program director/ coordinator will email the Office of the Registrar a list of the names and ID numbers of those students approved to interrupt their thesis/final project continuous enrollment.

Thesis/Final Project Continuous Enrollment in a Summer Term

Continuous enrollment in thesis/final project in a summer term is optional. The program director/coordinator will email the Office of the Registrar, by the end of the add and drop period of the corresponding summer term, a list of the names and ID numbers of students wishing to maintain continuous thesis/final project enrollment in the summer term, along with their respective thesis/final project title, advisors' names and 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 credit hours must maintain continuous thesis/final project enrollment until defense of the thesis/project. Likewise, students who have successfully defended their thesis/project but have already registered for the thesis/project full credit hours must remain enrolled until submission of the approved thesis/final project final report.

A thesis/final project extension fee (see Other Fees in the Tuition and Fees section earlier in this catalog) is charged for the first extension and every subsequent summer term extension; however, further extensions in a regular semester will be charged

the tuition rate of one graduate credit hour.

Students must be registered in the semester/term in which they defend their thesis.

Note: A student must complete the master's degree program graduation requirements within five years from initial enrollment into the program, inclusive of any leave.

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 the Request to Change Program Option – Graduate Level Students (available at www.aus.edu/registration/forms) within the published deadlines. The request form must be approved by the student's 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 credit hours (i.e., XXX 698 or XXX 699) completed for the first option selected.

Switching from thesis to final project could require the student to take additional courses. The student must pay for any additional credit hours or courses required as a result of switching from thesis to final project (or vice versa). In switching from thesis to final project (or vice versa) while maintaining the topic of research and working with the same thesis/final project advisor, tuition paid towards the thesis will be applied towards the final project and vice versa.

Grading of Master's Thesis/Final Project

A thesis/final project normally requires longer than one semester/term to be completed. An In Progress (IP) grade is recorded by the Office of the Registrar until completion of the thesis/final project.

A thesis/final project grade will be assigned after public defense of the thesis/final project and submission of the approved thesis/final project final report. The dean (or appointed designee) will inform the Office of Graduate Studies and the Office of the Registrar of the thesis/final project final grade.

PhD Dissertation

PhD degree seeking students are required to pass a qualifying examination and complete a major research work in the form of a PhD dissertation.

Qualifying Examination

To advance to candidacy for a PhD degree and become eligible to register for the PhD dissertation, a doctoral student must pass a qualifying examination. The qualifying examination may have a written and/or oral parts to test the student's breadth of knowledge, understanding of fundamentals, and ability to perform independent research work in a specific area.

Registration for the qualifying examination is conditional upon meeting the following minimum requirements:

- the student must be in good academic standing
- the student must have successfully completed a minimum of 12 credit hours of doctoral-level course work.

Further eligibility requirements may be imposed by the individual PhD degree programs. For details, consult the degree program section later in this catalog. Students need to seek guidance from their Program Director regarding the qualifying examination requirements and deadlines.

The qualifying examination may result in a pass or a fail grade. The Program Director will notify the Office of Graduate Studies of the result of the qualifying examination within two weeks of the examination completion date. The Office of Graduate Studies will officially notify the student and the Office of Registrar of the outcome of the exam.

A doctoral student who fails the qualifying examination is academically dismissed from the university. A student who was academically dismissed as a result of failing the qualifying examination may petition for reinstatement and a repeat of the failed qualifying examination to the program director, one month ahead of the registration of the semester immediately following academic dismissal. The student petition form is available at www.aus.edu/registration/forms. The petition will be reviewed by the program director who will make a written recommendation to the associate dean/director of graduate programs. The associate dean/director of graduate programs will then provide a recommendation to the Vice Provost for Graduate Studies. Decisions regarding reinstatement and repeat of the qualifying examination will be made by the Vice Provost for Graduate Studies. A student who failed the qualifying examination may be allowed to repeat the qualifying examination only once.

Further details on the qualifying examination are provided in the *Policies and Procedures* document available on iLearn and accessible using the following path: iLearn-Community-Office of Graduate Studies (OGS)-Office of Graduate Studies Policies & Procedures.

Registration for Dissertation Credit hours

PhD degree candidates registering for dissertation credit hours must register through the Office of the Registrar.

Dissertation First Registration

Prior to registering for dissertation credit hours, PhD degree candidates must officially request the appointment of their Dissertation Advisory Committee (DAC) or, otherwise, the DAC chair. The DAC chair is the principal dissertation advisor of the student, guiding the candidate develop the proposal and dissertation.

In the first semester/term of dissertation work, a student normally registers for six dissertation credit hours working on the dissertation research proposal. Before the end of the add and drop period, the program director must provide the Office of the Registrar with a list of all doctoral students who will be registered for dissertation credit hours (XXX 799), along with their dissertation titles, the names of their advisors and the number of dissertation credit hours.

For details on the DAC formation and the dissertation research proposal preparation and submission, please refer to the *Policies and Procedures* document available on iLearn and accessible using the following path: iLearn-Community-Office of Graduate Studies (OGS)-Office of Graduate Studies Policies & Procedures.

Dissertation Continuous Enrollment

PhD candidates who have completed one semester/term of dissertation work must maintain continuous dissertation enrollment until defense of the dissertation. Candidates who successfully defend their dissertation must remain enrolled until submission of the approved dissertation final report.

Students who fail to maintain dissertation continuation in a semester, without their program director prior approval of dissertation registration discontinuation, will be assigned an NP grade, resulting in an automatic withdrawal of candidacy from the PhD degree program.

Students are expected to successfully complete the dissertation proposal within three semesters of dissertation

first registration. Failure to complete the dissertation proposal within the specified time frame or failure to demonstrate progress after the proposal defense may result in assigning an NP grade, resulting in withdrawal of candidacy from the PhD degree program.

The dissertation proposal report must be submitted and orally presented to the dissertation review panel. The dissertation review panel is composed of the DAC in addition to two more members who hold a doctorate degree and are active in the research field of the proposal. The proposal must be approved in writing by the review panel. Details on the dissertation proposal review process are provided in the *Office of Graduate Studies Policies and Procedures* document available on iLearn and accessible using the following path: iLearn-Community-Office of Graduate Studies (OGS)-Office of Graduate Studies Policies & Procedures.

Dissertation Continuous enrollment in a regular semester

Dissertation continuous enrollment in a regular semester is ensured by the Office of the Registrar. Candidates are automatically enrolled in three incremental credit hours.

Changes to the dissertation registration details (dissertation title, name of advisor, registration credit hours and billing hours) are emailed to the Office of the Registrar by the program director before the end of the add and drop period of the corresponding registration semester.

In addition, and before the end of the add and drop period of the registration semester, the program director will email the Office of the Registrar a list of the names and ID numbers of those students approved to interrupt their dissertation continuous enrollment.

Dissertation Continuous Enrollment in a Summer Term

Continuous enrollment in the dissertation in a summer term is optional. The program director will email the Office of the Registrar, by the end of the add and drop period of the corresponding summer term, a list of the names and ID numbers of students wishing to maintain continuous dissertation enrollment in the summer term, along with their respective dissertation title, advisors' names and appropriate credit hours and billing hours.

Dissertation Time Extensions

PhD candidates who have registered for the dissertation minimum credit hours but have not yet defended their dissertation must maintain continuous enrollment by registering and paying for three incremental credit hours per semester/term until defense of the dissertation.

Candidates who have successfully defended their dissertation must remain enrolled until submission of the approved dissertation final report by registering and paying for one incremental credit hour per semester/term until submission of the approved dissertation final report.

Candidates must be registered in the semester/term in which they defend their dissertation.

Note: A student must complete the PhD degree program graduation requirements within 10 years from initial enrollment into the program.

Dissertation Defense and Grading

Up until the defense of the dissertation, an In Progress (IP) grade is recorded by the Office of the Registrar for every registration semester/term.

The dissertation must be publicly defended to the satisfaction of the Final Oral Defense Committee (FODC). The FODC consists of the DAC members and at least two additional members. The FODC membership is formed by the Program Director/Coordinator in consultation with the DAC chair; it is approved by the Associate Dean/Graduate Programs Director and appointed by the Vice Provost for Graduate Studies.

The outcome of the defense will be either Pass, Fail or Pass with Conditions resulting in a grade of P, NP or IP, respectively. If an IP grade is assigned and the dissertation work continues into a second semester/term, the student must register for one incremental credit hour of dissertation per semester/term, until a final grade is assigned. Candidates with an NP grade may petition to the Vice Provost for Graduate Studies, within one month of receiving the grade, for permission for a second final oral examination. If approved, the student must register for three credit hours of dissertation. The examination must be held with the same FODC, no sooner than four months from the first final oral examination. Failing the second final oral examination will result in an automatic withdrawal of candidacy from the PhD degree program.

For further details, consult the *Office of Graduate Studies Policies and Procedures* document available on iLearn and accessible using the following path: iLearn-Community-Office of Graduate Studies (OGS)-Office of Graduate Studies Policies & Procedures.

Graduation Requirements

Catalog

The graduation requirements for any individual student are 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/term 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) 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 his/her degree 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) 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 of record.

If a required course within a degree program changes its number of credit hours, then the number of credit hours required by the degree program for graduation may, at the discretion of the college/school, change by the same amount provided the minimum total number of credit hours for graduation is 30 for a master's degree program and 42 for a PhD degree program, 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.

Courses

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

Double Major Requirements

To complete a double major, students must satisfy the degree program

requirements of the two majors requested. Some courses may be counted toward the fulfillment of both degrees' requirements. The catalog in effect for the student's primary major will be followed for the degree audit of the second major.

Graduate Courses Completed While at the Undergraduate Level

With the approval of their associate dean and the relevant graduate program director, AUS senior undergraduate students with a minimum CGPA of 3.00 can register for up to two graduate-level (master's) courses while enrolled at the undergraduate level. Graduate-level courses completed while enrolled at the undergraduate level cannot be counted toward undergraduate program degree requirements. Once the student is admitted to an AUS master's degree program, these courses may be counted toward completion of the master's degree program requirements, provided they were completed no more than five years prior to the start date of the first semester of study of the current master's degree program.

Where AUS graduate courses taken while at the undergraduate level count towards the student's graduate degree program graduation requirements, courses could be used to satisfy registration requirements, as applicable. Grades earned in such courses will also count in the graduate cumulative grade point average (CGPA).

Graduation Residence Requirements

Candidates for graduation are expected to complete their last semester in residence at the university, unless registered at an approved study abroad institution.

In order to obtain a master's degree from AUS, students must complete a minimum of two regular semesters in residence at AUS. To earn a PhD degree from AUS, doctoral students must complete a minimum of four semesters in residence at AUS. Coursework completed at an approved study abroad institution will meet the graduation residence requirement provided the courses have been pre-approved by the relevant graduate program director or associate dean.

Note that coursework completed in the context of a summer term outside AUS does not meet graduation residence requirements.

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

Time Limit on Duration of Study

Regardless of the catalog by which the student's graduation requirements are governed, all degree requirements must be completed within five years of admission to AUS as a master's degree student and within 10 years of admission to AUS as a PhD degree student, inclusive of any leave.

Academic Standing Requirement

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

Graduation Procedures and Diploma Information

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

Master's degree students registered at the 11th week of a semester for courses/thesis/final project necessary to complete their degree program graduation 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.

PhD degree students registered at the 11th week of a semester for their dissertation may participate in commencement at the end of that semester, provided they have successfully completed all their degree program requirements, including earning a P grade on their dissertation. Students whose dissertation passing grade is awarded past the 11th week of the semester may participate in the subsequent commencement ceremony.

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 or www.aus.edu/commencement. Absentia graduates are not eligible to participate in another commencement ceremony.

Application for Graduation

Candidates for graduate degrees file an Application for Graduation form (available at www.aus.edu/registration/forms or www.aus.edu/commencement) with the Office of the Registrar in their 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 semester/term for which they apply to graduate need not reapply for graduation. Their previous application will be automatically moved to the following semester/term.

Conferral of Degrees

Only students who have successfully completed degree requirements and all thesis/dissertation requirements, including corrections and final submission of the approved thesis/dissertation reports to the AUS Archives, 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/term in which requirements have been met. Conferral of the degree is noted on the academic transcript of the graduate with the date of graduation.

Names on 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.

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 Education's Higher Education Affairs Division. For details, please visit www.aus.edu/commencement.


THE AMERICAN UNIVERSITY OF SHARJAH

College of Architecture, Art and Design

Dean

Varkki Pallathucheril

Associate Dean

Zinka Bejtic

Master of Urban Planning (MUP)

George Katodrytis, Head, Department of Architecture

Jerry Kolo, Coordinator

Urban planning is concerned with creating aesthetically beautiful and functional places where present and future generations can live, work, entertain and engage in 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 plan urban environments and 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.

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 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.

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 credit hours. 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 residence requirements must be met. For details, refer to Graduation Requirements in the Academic Policies and Regulations section earlier in this catalog.

Graduation Requirements

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

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

Core Courses Requirement (18 credit hours)

Students must successfully complete the following UPL courses:

- UPL 600 Planning History, Theory and Principles
- UPL 602 Computer Applications in Planning
- UPL 604 Urban Planning Research and Analysis
- UPL 621 Environmental and Land Use Planning
- UPL 623 Urban Design Principles, Processes and Skills
- UPL 625 Plan Making, Communication and Process

Required Capstone Experience (6 credit hours)

Students must successfully complete the program's capstone experience:

- UPL 681 Urban Planning and Research Workshop I
- UPL 682 Urban Planning and Research Workshop II

This two-part workshop experience involves working individually and as a group on applying substantive urban planning skills. It involves fieldwork, hands-on analysis, policy formulation and plan making.

Elective Courses (minimum of 9 credit hours)

Students must successfully complete three elective courses for a minimum of 9 credit hours. Electives are selected in consultation with the program coordinator from the following list of courses:

- UPL 633 Urban Infrastructure Planning
- UPL 634 Tourism and Hospitality Planning
- UPL 639 Urban Planning and Housing Policy
- UPL 641 Urban Economics and Analysis
- UPL 651 Negotiation Strategies
- UPL 694 special topic courses in urban planning

With the approval of the program coordinator, students may elect to take one course outside of the list, from any university graduate-level course not counted as a core or capstone course.

Academic Advising

Program advising procedures provide students with orientation and guidance on the program and the profession. Students meet with the program coordinator every semester to discuss curricular progress and changes in circumstances, if any, and to confirm course choices for the next semester.

College of Arts and Sciences

Dean

Mahmoud Anabtawi

Associate Deans

Ahmad Al-Issa

James Griffin

Director of Graduate Programs

James Griffin

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

David Wilmsen, Head, Department of Arabic and Translation Studies

Said Faiq, 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 undergraduate cumulative 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 successfully complete TRA 500 Principles and Strategies of Translation and another course as specified by the program coordinator 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

Students in the MATI program are offered two options: a thesis option and a course option. To graduate with the Master of Arts in English/Arabic/English Translation and Interpreting, students must successfully complete all the requirements of the program, which consist of a minimum of 30 credit hours in required courses and elective courses, inclusive of a research thesis (for students who select the thesis option).

Students must successfully 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.

Thesis Option

Students in the thesis option must successfully complete the following requirements:

- 18 credit hours of required courses
- a minimum of six credit hours of elective courses
- six credit hours of Master's Thesis

Course Option

Students in the course option must successfully complete the following requirements:

- 18 credit hours of required courses
- a minimum of 12 credit hours of elective courses

Required Courses (18/24 credit hours)

Students in the thesis option must successfully complete all the required courses, for a total of 24 credit hours, inclusive of the practicum. Students in the course option must successfully complete 18 credit hours in required courses, inclusive of the practicum.

- 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 558 Contrastive Linguistics and Translation
- TRA 630 Practicum
- TRA 699 Master's Thesis (for students in the thesis option)

Practicum Waiver

The practicum requirement (TRA 630) can be waived, subject to the approval of the graduate programs director, for those students with relevant and documented professional experience in translation and/or interpreting.

Elective Courses (minimum of 6/12 credit hours)

Students in the thesis option must successfully complete a minimum of two elective courses (for a minimum of six credit hours). Students in the course option must successfully complete a minimum of four elective courses (for a minimum of 12 credit hours).

Students select their electives from the following list of courses, in consultation with their advisor:

- TRA 504 Discourse Semantics and Pragmatics in Translation
- TRA 512 Terminology, Arabicization and the Translator
- TRA 556 Rhetoric for Translators
- TRA 557 Translation of Administrative and Legal Documents
- TRA 560 Audiovisual Translation
- TRA 594/694 special topic courses 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 forming the thesis committee and for preparing the thesis, including the thesis proposal, thesis defense and deadlines, is given in the *Office of Graduate Studies Policies and Procedures* document available on iLearn and accessible using the following path: iLearn-Community-Office of Graduate Studies (OGS)-Office of Graduate Studies Policies & Procedures.

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

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

Alessandro Benati, Head, Department of English

Tammy Gregersen, Coordinator

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

Applicants who meet the general university requirements for graduate admission but have not completed at least one undergraduate course in general linguistics may be considered for conditional admission.

Degree Requirements

Students in the MA TESOL program are offered two options: a thesis option and a non-thesis option. To graduate with the MA TESOL, students must successfully complete all the requirements of the program, which consist of a minimum of 30 credit hours in required courses and elective courses, inclusive of a research thesis (for students who select the thesis option).

Students must successfully 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.

Thesis Option

Students in the thesis option must successfully complete the following requirements:

- 12 credit hours of required courses
- a minimum of 12 credit hours of elective courses
- six credit hours of Master's Thesis

Non-Thesis Option

Students in the non-thesis option must successfully complete the following requirements:

- 12 credit hours of required courses
- a minimum of 18 credit hours of elective courses

Required Courses (18/12 credit hours)

Students in the thesis option must successfully complete all the required courses, for a total of 18 credit hours. Students in the non-thesis option must successfully complete 12 credit hours in required courses.

- ELT 511 Linguistics for ESL Teachers
- ELT 513 Language Acquisition and Development
- ELT 515 Methods and Materials Development

- ELT 619 Practicum in TESOL
- ELT 699 Master's Thesis (for students in the thesis option)

Elective Courses (minimum of 12/18 credit hours)

Students in the thesis option must successfully complete a minimum of four elective courses (for a minimum of 12 credit hours). Students in the non-thesis option must successfully complete a minimum of six elective courses (for a minimum of 18 credit hours).

Students select their elective courses from the following list of courses, in consultation with their advisor:

- ELT 501 Advanced English Grammar
- ELT 507 Culture, Society and Language Learning
- ELT 517 Curriculum Design
- ELT 521 Reading and Writing in ESL
- ELT 523 Bilingual Education
- ELT 551 Language Testing and Evaluation
- ELT 553 Technology in the ESL Classroom
- ELT 617 Quantitative, Qualitative and Action Research in ELT
- ELT 694 Special Topics in ELT

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.

Master's Thesis

Students in the thesis option must complete their thesis 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 committee, which is composed of TESOL program faculty and one external member. A complete guide for forming the thesis committee and for preparing the thesis is given in the *Office of Graduate Studies Policies and Procedures* document available on iLearn and accessible using the following path: iLearn-Community-Office of Graduate Studies (OGS)-Office of Graduate Studies Policies & Procedures.

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

Master of Science in Mathematics (MSMTH)

Hana Sulieman, Head, Department of Mathematics and Statistics

Faruk Uygul, 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 a broad domain of mathematics from (but not all) areas such as 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
- formulate problems in mathematical terms arising in related areas such as engineering, finance, and the natural 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 the UAE Ministry of Education's Higher Education Affairs Division and by AUS, or a bachelor's degree from a related field with a minimum of:

- nine credit hours in calculus
- three credit hours in differential equations
- three credit hours in linear algebra
- three credit hours in abstract algebra
- three credit hours in real analysis

Degree Requirements

Students in the MSMTH program are offered two options: a thesis option and a non-thesis option. To graduate with the MSMTH, students must successfully complete all the requirements of the program, which consist of a minimum of 30 credit hours in required courses and elective courses, inclusive of a research thesis (for students who select the thesis option).

Students must successfully 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.

Thesis Option

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

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

Non-Thesis Option

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

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

Required Courses (18/12 credit hours)

Students in the thesis option must successfully complete all the required courses for a total of 18 credit hours. Students in the non-thesis option must successfully complete 12 credit hours in required courses.

- MTH 505 Ordinary Differential Equations
- MTH 511 Real Analysis
- MTH 512 Advanced Linear Algebra
- MTH 532 Abstract Algebra
- MTH 599 Master's Thesis (for students in the thesis option)

Elective Courses (minimum of 12/18 credit hours)

Students in the thesis option must successfully complete a minimum of four elective courses (for a minimum of 12 credit hours). Students in the non-thesis option must successfully complete a minimum of six elective courses (for a minimum of 18 credit hours).

Students select their electives from the following list of courses, in consultation with their advisor:

- MTH 500 Mathematical Statistics with Applications
- MTH 506 Partial Differential Equations
- MTH 507 Financial Mathematics I
- MTH 508 Mathematical Biology
- MTH 513 Advanced Probability
- MTH 514 Combinatorics
- MTH 516 Financial Mathematics II
- MTH 517 Numerical Methods for Derivative Pricing
- MTH 520 Complex Analysis
- MTH 525 Functional Analysis
- MTH 540 Algebraic Coding Theory
- MTH 551 Methods of Applied Mathematics
- MTH 555 Loss and Risk Models
- MTH 560 Topology
- MTH 565 Numerical Analysis
- MTH 570 Optimal Control Theory
- MTH 594 Special Topics in Mathematics

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.

Master's Thesis

A student in the thesis option must prepare and successfully defend a thesis presenting results of independent research performed under the close supervision of a faculty member from the Department of Mathematics and Statistics.

A student who wishes to pursue the thesis option must formally inform the program coordinator of the desired research topic and research question no later than the end of the 10th week of classes of the student's second semester of study. If the student is approved to pursue the thesis option, the program coordinator will consult with the head of department and the faculty of the department to identify a thesis advisor for the student. The thesis advisor will be responsible for supervising all aspects of the student's graduate work, such as course selection, thesis proposal, thesis writing and thesis defense.

A complete guide for forming the thesis committee and for preparing the thesis is given in the *Office of Graduate Studies Policies and Procedures* document available on iLearn and accessible using the following path: iLearn-Community-Office of Graduate Studies (OGS)-Office of Graduate Studies Policies & Procedures.

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

College of Engineering

Acting Dean
Naif Darwish

Associate Dean
Assim Sagahyroon

Associate Dean for Graduate Affairs and Research
Lotfi Romdhane

Master of Science in Biomedical Engineering (MSBME)

Hasan Al-Nashash, Director

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

Mission Statement

The mission of the Master of Science in Biomedical Engineering (MSBME) program at AUS is to prepare professionals for advanced careers and/or doctoral studies related to biomedical engineering. The program continuously strives to create a stimulating academic environment that promotes excellence in teaching and research, thereby assisting the students to become competent, innovative and responsible professionals.

Program Educational Objectives

Graduates of the MSBME program will be prepared to:

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

Student Outcomes

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

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

Admission Requirements

In addition to meeting the university's general graduate admission requirements, applicants must hold a Bachelor of Science in Biomedical Engineering or Chemical Engineering or Computer Engineering or Electrical Engineering or Civil Engineering or Industrial Engineering or Mechanical Engineering, from an independently accredited university recognized by the UAE Ministry of Education's Higher Education Affairs Division and by AUS. Degreed individuals in other engineering fields or a quantitative science field that is closely related to the biomedical engineering field may be considered on a case-by-case basis.

Degree Requirements

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

To qualify for graduation with an MSBME degree, students must successfully complete a minimum of 30 credit hours consisting of college and 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 MSBME program will receive good exposure to the research environment, all students will be required to complete research-oriented class projects within many of the biomedical engineering graduate courses.

Students must complete the degree requirements within five years from the time of initial enrollment in the program.

Graduation residence requirements must be met. For details, refer to Graduation Requirements in the Academic Policies and Regulations section earlier in this catalog.

Thesis Option

Students in the thesis option must successfully complete the following requirements:

- six credit hours of required college core courses
- three credit hours of a required program core course
- a minimum of 12 credit hours in elective courses
- a zero-credit hour seminar including biomedical ethics
- nine credit hours in Master's Thesis

Project Option

Students in the project option must successfully complete the following requirements:

- six credit hours of required college core courses
- three credit hours of a required program core course
- a minimum of 18 credit hours in elective courses
- a zero-credit hour seminar including biomedical ethics
- three credit hours in Professional Project

Course Option

Students in the course option must successfully complete the following requirements:

- six credit hours of required college core courses
- three credit hours of a required program core course
- a minimum total of 21 credit hours in elective courses
- a zero-credit hour seminar including biomedical ethics

Required Courses (18/12/9 credit hours)

College Core Courses (6 credit hours).

Students must successfully complete the following courses:

- NGN 500 Advanced Engineering Mathematics or
  MTH 508 Mathematical Biology
- NGN 505 Random Variables and Stochastic Processes or
  NGN 509 Computational Methods for Engineering

Program Core Course (3 credit hours)

Students must successfully complete the following course:

- BME 511 Human Anatomy and Physiology

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

Master's Thesis/Professional Project (9/3 credit hours).

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

- BME 698 Professional Project (3 credit hours—project option)
- BME 699 Master's Thesis (9 credit hours—thesis option)

Elective Courses (minimum of 12/18/21 credit hours)

Students in the thesis option must successfully complete a minimum of 12 credit hours.

Students in the project option must successfully complete a minimum of 18 credit hours.

Students in the course option must successfully complete a minimum of 21 credit hours.

Students can select elective courses from the following list:

- BME 541 Biomedical Measurements and Devices
- BME 543 Biomedical Imaging Technologies
- BME 544 Neuroengineering
- BME 551 Biofluid Mechanics
- BME 552 Drug Delivery
- BME 561 Healthcare Operations Management
- BME 562 Healthcare Planning and Risk Management
- BME 571 Biomechanics Engineering
- BME 572 Biomaterials Engineering
- BME 581 Biomedical Informatics
- BME 582 Computational Molecular Biology
- BME 594 Special Topics in Biomedical Engineering
- BME 596 Independent Study in Biomedical Engineering
- CHE 611 Biomedical Engineering and Biotechnology
- ELE 544 Advanced Signal Processing
- ELE 648 Pattern Classification

Students in the thesis and project options may elect to take one graduate level course outside the list of elective courses with the approval of their advisor and the program director; students in the course option may elect to take up to two graduate-level courses.

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 *Office of Graduate Studies Policies and Procedures* document available on iLearn and accessible using the following path: iLearn-Community-Office of Graduate Studies (OGS)-Office of Graduate Studies Policies & Procedures.

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

Master of Science in Chemical Engineering (MSChE)

Sameer Al-Asheh, Interim Head, Department of Chemical Engineering

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 hold a Bachelor of Science in Chemical Engineering from an independently accredited university recognized by the UAE Ministry of Education's Higher Education Affairs Division and 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 in the MSChE program must choose from two options: the thesis option or the project option.

To qualify for graduation with an MSChE degree, students must successfully complete a minimum of 30 credit hours 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.

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

Students must complete the degree requirements within five years from the time of initial enrollment in the program.

Graduation residence requirements must be met. For details, refer to Graduation Requirements in the Academic Policies and Regulations section earlier in this catalog.

Thesis Option

Students in the thesis option must successfully complete the following requirements:

- six credit hours of required college core courses

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

Project Option

Students in the project option must successfully complete the following requirements:

- six credit hours of required college core courses
- nine credit hours of required program core courses
- a minimum of 12 credit hours in elective courses
- a zero-credit hour seminar
- three credit hours in Professional Project

Required Courses (24/18 credit hours)

College Core Courses (6 credit hours)

Students must successfully complete the following courses:

- NGN 500 Advanced Engineering Mathematics
- NGN 509 Computational Methods for Engineering

Program Core Courses (9 credit hours)

Students must successfully 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 successfully complete a seminar course (CHE 695).

Master's Thesis/Professional Project (9/3 credit hours)

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

Elective Courses (minimum of 6/12 credit hours)

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

- CHE 594 special topic courses 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 topic courses in chemical engineering
- CHE 696 Independent Study in Chemical Engineering

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

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

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 forming the thesis/professional project committee and for preparing the thesis/professional project is given in the *Office of Graduate Studies Policies and Procedures* document available on iLearn and accessible using the following path: iLearn-Community-Office of Graduate Studies (OGS)-Office of Graduate Studies Policies & Procedures.

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

Master of Science in Civil Engineering (MSCE)

Irtishad Ahmad, Head, Department of Civil Engineering

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 hold a Bachelor of Science in Civil Engineering from an independently accredited university recognized by the UAE Ministry of Education's Higher Education Affairs Division and 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 in the MSCE program must choose from two options: the thesis option or the project option.

To qualify for graduation with an MSCE degree, students must successfully complete a minimum of 30 credit hours 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.

To ensure that students in the MSCE program will receive good exposure to the research environment, students in the project option are required to complete 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.

Students must complete the degree requirements within five years from the time of initial enrollment in the program.

Graduation residence requirements must be met. For details, refer to Graduation Requirements in the Academic Policies and Regulations section earlier in this catalog.

Thesis Option

Students in the thesis option must successfully complete the following requirements:

- three credit hours of required college core courses
- a minimum of 18 credit hours in elective courses
- a zero-credit hour seminar
- nine credit hours in Master's Thesis

Project Option

Students in the project option must successfully complete the following requirements:

- three credit hours of required college core courses
- a minimum of 24 credit hours in elective courses
- a zero-credit hour seminar
- three credit hours in Professional Project

Required Courses (12/6 credit hours)

College Core Courses (3 credit hours)

Students must successfully complete one of the following courses:

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

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

Master's Thesis/Professional Project (9/3 credit hours)

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

Elective Courses (minimum of 18/24 credit hours)

Students in the thesis option must successfully complete a minimum of 18 credit hours in elective courses. Students in the project option must successfully complete a minimum of 24 credit hours. 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 524 Design of Strengthened Concrete Structures
- CVE 525 Structural Earthquake Engineering
- CVE 526 Advanced Structural Steel Design
- CVE 527 Optimization Techniques for Civil Engineering Systems
- CVE 531 Dynamics of Machine Foundations
- CVE 551 Wastewater Treatment
- CVE 572 Satellite Remote Sensing
- CVE 594 special topic courses 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 663 Traffic Flow Theory
- CVE 694 special topic courses 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 of elective courses, with the approval of their advisor and the program director.

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 forming the thesis/professional project committee and for preparing the thesis/professional project is given in the *Office of Graduate Studies Policies and Procedures* document available on iLearn and accessible using the following path: iLearn-Community-Office of Graduate Studies (OGS)-Office of Graduate Studies Policies & Procedures.

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

Master of Science in Computer Engineering (MSCoE)

Fadi Aloul, Head, Department of Computer Science and Engineering

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 hold a Bachelor of Science in Computer Engineering from an independently accredited university recognized by the UAE Ministry of Education's Higher Education Affairs Division and 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 MSCoE program must choose from two options: the thesis option or the project option.

To qualify for graduation with an MSCoE degree, students must successfully complete a minimum of 30 credit hours 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.

To ensure that students in the MSCoE program will receive good exposure to the research environment, students in the project option are required to complete 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.

Students must complete the degree requirements within five years from the time of initial enrollment in the program.

Graduation residence requirements must be met. For details, refer to Graduation Requirements in the Academic Policies and Regulations section earlier in this catalog.

Thesis Option

Students in the thesis option must successfully complete the following requirements:

- three credit hours of required college core courses
- a minimum of 18 credit hours in elective courses
- a zero-credit hour seminar
- nine credit hours in Master's Thesis

Project Option

Students in the project option must successfully complete the following requirements:

- three credit hours of required college core courses
- a minimum of 24 credit hours
- a zero-credit hour seminar
- three credit hours in Professional Project

Required Courses (12/6 credit hours)

College Core Courses (3 credit hours)

Students must successfully complete one of the following courses:

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

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

Master's Thesis/Professional Project (9/3 credit hours)

- COE 698 Professional Project (3 credit hours—project option)
- COE 699 Master's Thesis (9 credit hours—thesis option)

Elective Courses (minimum of 18/24 credit hours)

Students in the thesis option must successfully complete a minimum of 18 credit hours in elective courses. Students in the project option must successfully complete a minimum of 24 credit hours. Students can select elective courses from the following list:

- COE 530 Advanced Computer Networks
- COE 531 Advanced Software Engineering
- COE 533 Advanced Computer Architecture
- COE 555 Computer and Network Security
- COE 594 special topic courses in computer engineering
- COE 630 Wireless Networks
- COE 632 Advanced Database Systems
- COE 633 Advanced Internet Computing
- COE 635 Optical Networks
- COE 636 Advanced Multicore Computing
- COE 637 Data Mining and Knowledge Discovery
- COE 639 Digital Video Compression
- COE 694 special topic courses 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 and the program director.

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 forming the thesis/professional project committee and for preparing the *Office of Graduate Studies* thesis/professional project is given in the *Policies and Procedures* document available on iLearn and accessible using the following path: iLearn-Community-Office of Graduate Studies (OGS)-Office of Graduate Studies Policies & Procedures.

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

Master of Science in Electrical Engineering (MSEE)

Nasser Qaddoumi, Head, Department of Electrical Engineering

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 hold a Bachelor of Science in Electrical Engineering from an independently accredited university recognized by the UAE Ministry of Education's Higher Education Affairs Division and 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 and the course option.

To qualify for graduation with an MSEE degree, students must successfully complete a minimum of 30 credit hours 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 MSEE program 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.

Students must complete the degree requirements within five years from the time of initial enrollment in the program.

Graduation residence requirements must be met. For details, refer to Graduation Requirements in the Academic Policies and Regulations section earlier in this catalog.

Thesis Option

Students in the thesis option must successfully complete the following requirements:

- six credit hours of required college core courses
- a minimum of 15 credit hours in elective courses
- a zero-credit hour seminar
- nine credit hours in Master's Thesis

Project Option

Students in the project option must successfully complete the following requirements:

- six credit hours of required college core courses
- a minimum of 21 credit hours in elective courses
- a zero-credit hour seminar
- three credit hours in Professional Project

Course Option

Students in the course option must successfully complete the following requirements:

- six credit hours of required college core courses
- a minimum of 24 credit hours in elective courses
- a zero-credit hour seminar

Required Courses (15/9 credit hours)

College Core Courses (6 credit hours)

Students must successfully complete two of the following courses:

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

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

Master's Thesis/Professional Project (9/3 credit hours)

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

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

Elective Courses (minimum of 15/21/24 credit hours)

Students in the thesis option must successfully complete a minimum of 15 credit hours in elective courses. Students in the project option must successfully complete a minimum of 21 credit hours. Students in the course option must successfully complete a minimum of 24 credit hours in elective courses. 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 547 Distributed Energy Resources in Smart Grids
- ELE 594 special topic courses in electrical engineering
- ELE 641 Advanced Microwave Engineering
- ELE 642 Digital and Wireless Communications
- 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 649 Power System Transients
- ELE 694 special topic courses in electrical engineering
- ELE 696 Independent Study in Electrical Engineering
- MTR 540 Advanced Control Systems

Students in the thesis and project options may elect to take one course outside the list of elective courses, with the approval of their advisor and the program director.

Students in the course option may elect to take up to two courses outside the list of elective courses, with the approval of their advisor and the program director.

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 forming the thesis/professional project committee and for preparing the thesis/professional project is given in the *Office of Graduate Studies Policies and Procedures* document available on iLearn and accessible using the following path: iLearn-Community-Office of Graduate Studies (OGS)-Office of Graduate Studies Policies & Procedures.

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

Master of Science in Engineering Systems Management (MSESM)

Mohamed BenDaya, Director

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 courses in the theme areas of engineering management (EM) and project management (PM) 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:

- develop creative and effective engineered solutions that require engineering systems management skills to meet organizations' needs in product, service and project-based industries
- succeed in a wide range of different organizations, positions and complex projects and adapt to various work environments
- lead the change management process to meet organizational goals and objectives
- seek continual professional development and lifelong learning in a dynamic, global professional environment
- act professionally and ethically in the practice of engineering systems management

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 hold a Bachelor of Science degree in engineering from an independently accredited university recognized by the UAE Ministry of Education's Higher Education Affairs Division and by AUS.

Applicants with non-engineering degrees may be considered for conditional admission on a case-by-case basis. Preference will be given to applicants with relevant work experience. The following criteria must be met:

- The applicant should demonstrate that he/she has gained technical skills by working in an engineering/ manufacturing/construction/ petroleum/power utility organization for at least five years.
- The applicant should have held managerial positions in technical-oriented departments/divisions such as manufacturing/production/ inventory/maintenance/quality/ warehousing/scheduling/procurement.
- The applicant should demonstrate that he/she has been involved in technical-oriented projects.

Degree Requirements

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

To qualify for graduation with an MSESM degree, students must successfully complete a minimum of 30 credit hours consisting of core courses, theme courses, and a thesis or a professional project (for students in the thesis/ professional project option only) or a capstone course (for students in the course option), with a minimum cumulative grade point average of 3.00.

Students must complete the degree requirements within five years from the time of initial enrollment in the program.

Graduation residence requirements must be met. For details, refer to Graduation Requirements in the Academic Policies and Regulations section earlier in this catalog.

Thesis/Professional Project Option

Students in the thesis/professional project option must successfully complete the following requirements:

- 15 credit hours in core courses
- nine credit hours in theme courses
- six credit hours in Master's Thesis or Professional Project

Course Option

Students in the course option must successfully complete the following requirements:

- 15 credit hours in core courses
- 12 credit hours in theme courses
- three credit hours in the capstone course

Required Courses (21/18 credit hours)

Students in the thesis/professional project option must successfully complete a total of 21 credit hours in required courses. Students in the course option must successfully complete 18 credit hours in required courses.

Core Courses (15 credit hours)

Students in all options must successfully complete 15 credit hours in core courses, as follows:

- ESM 520 Management for Engineers
- ESM 535 Introduction to Management Science
- ESM 570 Project Management
- ESM 575 Advanced Engineering Economy
- ESM 600 Research Methodology

Master's Thesis/Professional Project (6 credit hours)

This requirement applies to students in the thesis/professional project option:

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

Capstone Course (3 credit hours)

This requirement applies to students in the course option:

- ESM 685 Capstone Course in Engineering Systems Management

Elective Courses (minimum of 9/12 credit hours)

Students in the thesis/project option must successfully complete a minimum of nine credit hours in elective courses. A minimum of six credit hours must be successfully completed in courses taken from the list of elective courses of the student's declared theme and a maximum of three credit hours can be completed in courses outside the student's designated theme elective courses.

Students in the course option must successfully complete a minimum of 12 credit hours in elective courses. A minimum of six credit hours must be successfully completed in courses taken from the list of elective courses of the student's declared theme and a maximum of six credit hours can be completed in courses outside the student's designated theme elective courses.

Elective courses from outside the student's theme must be approved by the program director.

Engineering Management Theme

- ESM 615 Big Data and Business Analytics
- ESM 625 Enterprise Resource Planning Systems
- ESM 630 Quality Engineering and Management
- ESM 634 Advanced Modeling and Simulation
- ESM 636 Human Resources Management for Engineers
- ESM 640 Supply Chain Management
- ESM 644 Financial Management for Engineers
- ESM 694 special topic courses in ESM

Project Management Theme

- ESM 630 Quality Engineering and Management
- ESM 636 Human Resources Management for Engineers
- ESM 660 Legal Aspects of Engineering
- ESM 670 Project Risk Management
- ESM 675 Project Procurement Management
- ESM 694 Special Topic Courses 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 credit hours 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 forming the thesis/professional project committee and for preparing the thesis/professional project is given in the *Office of Graduate Studies Policies and Procedures* document available on iLearn and accessible using the following path: iLearn-Community-Office of Graduate Studies (OGS)-Office of Graduate Studies Policies & Procedures.

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

Master of Science in Mechanical Engineering (MSME)

Mamoun Abdel-Hafez, Head, Department of Mechanical Engineering

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 hold a Bachelor of Science in Mechanical Engineering from an independently accredited university recognized by the UAE Ministry of Education's Higher Education Affairs Division and 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 MSME program must choose from two options: the thesis option and the project option.

To qualify for graduation with an MSME degree, students must successfully complete a minimum of 30 credit hours 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.

To ensure that students in the MSME program will receive good exposure to the research environment, students in the project option are required to complete 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.

Students must complete the degree requirements within five years from the time of initial enrollment in the program.

Graduation residence requirements must be met. For details, refer to Graduation Requirements in the Academic Policies and Regulations section earlier in this catalog.

Thesis Option

Students in the thesis option must successfully complete the following requirements:

- three credit hours of required college core courses
- a minimum of 18 credit hours in elective courses
- a zero-credit hour seminar
- nine credit hours in Master's Thesis

Project Option

Students in the project option must successfully complete the following requirements:

- three credit hours of required college core courses
- a minimum of 24 credit hours in elective courses
- a zero-credit hours seminar
- three credit hours in Professional Project

Required Courses (12/6 credit hours)

College Core Courses (3 credit hours)

Students must successfully complete one of the following courses:

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

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

Master's Thesis/Professional Project (9/3 credit hours)

- MCE 698 Professional Project (3 credit hours—project option)
- MCE 699 Master's Thesis (9 credit hours—thesis option)

Elective Courses (minimum of 18/24 credit hours)

Students in the thesis option must successfully complete a minimum of 18 credit hours in elective courses. Students in the project option must successfully complete a minimum of 24 credit hours. 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 topic courses in mechanical engineering
- MCE 650 Advanced 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 topic courses in mechanical engineering
- MCE 696 Independent Study in Mechanical Engineering

With the approval of their advisor and the program director, students in both options may elect to take one course outside the list of elective courses.

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 forming the thesis/professional project committee and for preparing the thesis/professional project is given in the *Office of Graduate Studies Policies and Procedures* document available on iLearn and accessible using the following path: iLearn-Community-Office of Graduate Studies (OGS)-Office of Graduate Studies Policies & Procedures.

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

Master of Science in Mechatronics Engineering (MSMTR)

Mohammad Jaradat, 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:

- lead multidisciplinary projects, which apply the latest techniques for the design and development of smart systems
- provide employers with interdisciplinary skills necessary to utilize cutting-edge technology tools in the design, development, and implementation of modern engineering systems
- develop new technologies in the areas of cyber physical systems, and smart cities
- apply Mechatronics principles in the broad context of engineering system design and address the aspect of commercialization
- 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 hold a bachelor of science degree in engineering from an independently accredited university recognized by the UAE Ministry of Education's Higher Education Affairs Division and by AUS. 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 credit hours 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 credit hours of approved MTR graduate courses.

To qualify for graduation with an MSMTR degree, students must successfully complete the requirements detailed hereafter with a minimum cumulative grade point average of 3.00.

Students must complete the degree requirements within five years from the time of initial enrollment in the program.

Graduation residence requirements must be met. For details, refer to Graduation Requirements in the Academic Policies and Regulations section earlier in this catalog.

Thesis Option

Students in the thesis option must successfully complete a minimum of 30 credit hours, as follows:

- 15 credit hours in core courses
- a minimum of six credit hours in elective courses
- nine credit hours in Master's Thesis

Course Option

Students in the course option must successfully complete a minimum of 30 credit hours, as follows:

- 15 credit hours in core courses
- a minimum of 15 credit hours 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 credit hours 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. For details, refer to the Admission to Graduate Studies/Course Waiver earlier in this catalog.

Core Courses (15 credit hours)

Students must successfully complete the following courses:

- MTR 520 Embedded Systems for Mechatronics
- MTR 540 Advanced Control Systems
- MTR 550 Robotics Systems
- MTR 615 Artificial Intelligent Systems
- MTR 690 Mechatronics Design
- MTR 695 Mechatronics Seminar

Elective Courses (minimum of 6/15 credit hours)

Students in the thesis option must successfully complete a minimum of six credit hours from the following list of courses. Students in the course option must successfully complete a minimum of 15 credit hours:

- ELE 544 Advanced Signal Processing
- MTR 610 Automated Manufacturing Systems
- MTR 640 Nonlinear and Intelligent Control Systems
- MTR 644 Electric Drives for Mechatronics Systems
- MTR 650 Applied Linear Estimation
- MTR 694 special topic courses in mechatronics engineering
- MTR 696 Independent Study in Mechatronics Engineering
- NGN 500 Advanced Engineering Mathematics

Students in both the thesis option and the course option may elect to take one

elective course outside the list of elective courses, 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 forming the thesis/professional project committee and for preparing the thesis, including the thesis proposal, thesis defense and deadlines, is given in the *Office of Graduate Studies Policies and Procedures* document available on iLearn and accessible using the following path: iLearn-Community-Office of Graduate Studies (OGS)-Office of Graduate Studies Policies & Procedures.

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

Doctor of Philosophy in Engineering – Engineering Systems Management (PhD-ESM)

Mohamed BenDaya, Director

The PhD in Engineering - Engineering Systems Management (PhD-ESM) degree program addresses fundamental research problems of national and global importance for the 21st century centered on four concentration areas:

- Supply Chain Management
- Sustainable Construction Project Management
- Smart Cities Management
- Engineering Management

Program Mission Statement

The mission of the PhD-ESM degree program is to educate future researchers, practitioners, innovators and academics with cutting-edge knowledge, skills and abilities in engineering systems management that can be utilized in meeting societal needs and shaping contemporary market trends in the UAE, the region and globally.

Program Educational Objectives

Graduates of the PhD-ESM degree program will be prepared to:

- pursue successful academic, industry, and/or government careers
- conduct research independently in multidisciplinary areas
- apply technical knowledge for long-term sustainable and economic development
- act professionally and ethically when practicing of the principles of engineering systems management.

Student Outcomes

Upon graduation, an AUS PhD-ESM graduate should demonstrate the ability to:

- perform advanced research related to ESM areas
- assess economic, environmental, and societal impacts of engineering management systems
- formulate and solve complex technical problems using ESM tools and techniques
- manage highly complex ethical issues related to engineering systems management
- use advanced written and oral communications skills to present research outcomes and evaluate scholarly publications for diverse audiences.

Admission Requirements

In addition to meeting the university's general requirements for admission to PhD degree programs, applicants to the PhD-ESM degree program must meet the following program admission requirements:

- applicants must have completed a relevant Master of Science or Master of Engineering degree with a minimum CGPA of 3.30. Applicants with non-engineering master's degrees may be considered on a case-by-case basis
- applicants must submit an official Graduate Record Examination (GRE) score
- applicants must submit three letters of recommendation, a statement of purpose, and a current vitae/resume. At least two of the letters must be from an academic advisor/faculty familiar with the applicant's background.

Degree Requirements

To qualify for graduation with a PhD-ESM degree, students must successfully complete a minimum of 48 credit hours with a minimum cumulative GPA of 3.00, as follows:

- a minimum of 24 credit hours (eight courses) of required and elective coursework:
  - a minimum of six credit hours (two courses) of required courses
  - a minimum of 18 credit hours (six courses) of elective courses
  - a zero-credit hour seminar
- a minimum of 24 credit hours of research work (Dissertation)

The expected minimum duration for completion of the PhD-ESM degree program is four years. All graduation requirements must be completed within 10 years of admission to AUS as a doctoral student, inclusive of any leave.

Graduation residence requirements must be met. For details, refer to Graduation Requirements in the Academic Policies and Regulations section earlier in this catalog.

Required courses

Students must successfully complete the following required courses:

- ESM 701 Research Methods
- ESM 702 Multivariate Data Analysis
- ESM 795 Doctoral Seminar
- ESM 799 Dissertation (for a minimum of 24 credits)

Elective Courses (minimum of 18 credit hours)

Students must successfully complete a minimum of six elective courses (for a minimum of 18 credit hours) selected from the following research areas. The electives courses must be approved by the program director.

Supply Chain Management Research Area

- ESM 710 Advanced Decision Making Analysis
- ESM 711 Deterministic Optimization Techniques
- ESM 712 Advanced Supply Chain Management
- ESM 713 Supply Chain Modeling
- ESM 714 Modeling and Analysis of Logistics Systems
- ESM 794 Special Topics in ESM—Supply Chain Management

Sustainable Construction Project Management Research Area

- ESM 720 Sustainable Development for Engineers

- ESM 721 Sustainable Development and Global Competitiveness
- ESM 722 Sustainable Analytics and Resource Management
- ESM 723 The Living Building
- ESM 724 Sustainable Ecosystems
- ESM 725 Programs and Portfolio Management
- ESM 794 Special Topics in ESM - Sustainable Construction Project Management

Smart Cities Research Area

- ESM 730 Tools for Big Data
- ESM 731 Smart Cities Infrastructure and Services
- ESM 732 Networking Architectures for Smart Cities
- ESM 733 Electronic, Social and Sensor Network Applications for Smart Cities
- ESM 734 Trust and Security for Smart Cities
- ESM 794 Special Topics in ESM - Smart Cities

Engineering Management Research Area

- ESM 710 Advanced Decision Making Analysis
- ESM 740 Advanced Quality Engineering
- ESM 741 Organizational Performance Management
- ESM 742 Strategic Human Resources Management
- ESM 743 Strategic Management
- ESM 794 Special Topics in ESM – Engineering Management

Qualifying Examination

To be considered as a candidate for the PhD-ESM degree, a student must pass a written and an oral qualifying examination. Registration for the qualifying examination is conditional upon meeting the following requirements:

- the student must be in good academic standing
- the student must have successfully completed a minimum of 12 credit hours of course work, including ESM 701 and ESM 702.

The qualifying examination may result in a pass or a fail grade. A student who fails the qualifying examination is academically dismissed from the university. A student who was academically dismissed as a result of failing the qualifying examination may petition for reinstatement and a repeat of the failed qualifying examination to the Program Director, one month ahead of the registration of the semester immediately following academic dismissal. The student petition form is available at www.aus.edu/registration/forms. The petition will be reviewed by the Program Director who will make a written recommendation to the Associate Dean for Graduate Studies and Research. The associate dean will then provide a recommendation to the Vice Provost for Graduate Studies. Decisions regarding reinstatement and repeat of the qualifying examination will be made by the Vice Provost for Graduate Studies. A student who failed the qualifying examination may be allowed to repeat the qualifying examination only once.

Students need to seek guidance from the Program Director regarding the qualifying examination requirements and deadlines.

Further details on the qualifying examination are provided in the *Office of Graduate Studies Policies and Procedures* document available on iLearn and accessible using the following path: iLearn-Community-Office of Graduate Studies (OGS)-Office of Graduate Studies Policies & Procedures.

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

PhD Dissertation

A PhD-ESM candidate develops his/her dissertation research proposal and completes the dissertation under the direct supervision and guidance of a principal advisor. The principal advisor serves as the chair of the student's Dissertation Advisory Committee (DAC). The DAC also includes at least two additional faculty members. The student may request the appointment of an external committee member.

The dissertation must be publicly defended to the satisfaction of the Final Oral Defense Committee (FODC). The FODC is formed by the Program Director in consultation with the DAC chair; it is approved by the Associate Dean for Graduate Studies and Research and appointed by Vice Provost for Graduate Studies.

The dissertation is typically completed within four semesters.

A complete guide for forming the DAC and the FODC, and preparing the dissertation, including the dissertation research proposal, the dissertation defense schedule and deadlines, is given in the *Office of Graduate Studies Policies and Procedures* document available on iLearn and accessible using the following path: iLearn-Community-Office of Graduate Studies (OGS)-Office of Graduate Studies Policies & Procedures.

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

School of Business Administration

Acting Dean
Narjess Boubakri

Associate Dean
Mohsen Saad

Associate Dean for Graduate Programs
Valerie Lindsay

Master of Business Administration (MBA)

Valerie Lindsay, Coordinator

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 MENA 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, requires a total 33 credit hours for a general MBA and 36 credit hours for an MBA with concentration. At the core of the general MBA are 10 courses that cover the principles of analysis and leadership skills expected of an executive manager and two elective courses. For students interested in an MBA with a concentration in either finance or human resource management, a total of 36 credit hours must be completed, including a total of three electives taken in the area of concentration.

More details on the program are available at www.aus.edu/mba.

Program Educational Goals and Outcomes

Our MBA program is designed for students with managerial potential. MBA graduates are expected to achieve the following objectives:

- Proficiency in the core business knowledge required of an executive manager

  Students will be able to apply the 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 of 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

Admission to the MBA program is competitive. In addition to meeting the university's general graduate admission requirements, applicants are required to take the MBA Admissions Test. This exam is administered through the AUS Testing Center. 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. The score on the MBA Admission Test/GMAT 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.

Applicants who lack the requisite undergraduate training in business; who need a refresher in economics, probability and statistics or financial accounting; or who are admitted on a conditional basis may be required to complete business bridging courses, comprising 1.5 credit hours courses in economics, quantitative methods and financial accounting prior to matriculating in the major.

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. This requirement can be met by passing an undergraduate university-level course in computer skills.

Business Bridging Courses

Students admitted to the MBA program may be required to complete a maximum of 4.5 credit hours in courses that serve as the foundation for the core MBA program. The number of business bridging courses required will normally depend on courses completed by the student as an undergraduate and is determined by the program at the time of admission. Business bridging courses may be waived when the waiver policy requirements are met. Matriculation into the major requires successful completion or waiver of the business bridging courses.

Business Bridging Courses (4.5 credit hours)

- BUS 501 Introduction to Economics
- BUS 502 Quantitative Methods
- BUS 503 Financial Accounting

Please note that all business bridging courses are half-semester courses.

Waiver Policy

Students may qualify to waive any or all of the business bridging courses. In general, a course may be waived if the student has completed comparable course work at the undergraduate level. Waivers are evaluated at the time of admission. For more information, consult the Course Waiver in the Admission to Graduate Studies section earlier in this catalog.

In addition, the following waiver rules apply:

- Each of the business bridging courses may be waived for students who have taken equivalent coursework at the undergraduate level. Two equivalent courses are required to waive BUS 501, while one equivalent course is required to waive each of BUS 502 and BUS 503. 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 with professional experience and/or holders of commonly

recognized certificates (e.g., CPA or CFA) that indicate mastery of the content of a business bridging course may be granted a waiver.

Course Timings

MBA courses are offered in the evenings, with classes typically beginning at 6:00 p.m. and ending at 9:00 p.m.

Academic Load

An MBA student may register for up to nine credit hours per semester. Upon a student's request, the Associate Dean for Graduate Programs can approve three additional credit hours if the student has achieved a cumulative GPA of 3.50 or above.

Academic Standing Policy

MBA students are allowed to receive two Cs (C or C+) in courses in the MBA program. A student who receives a third C or C+ is dismissed from the program. All university guidelines on academic dismissal outlined in the Academic Policies and Regulations section of this catalog apply.

Degree Requirements

To be awarded an MBA degree, students must successfully complete 33 credit hours in core courses and electives as follows:

- 27 credit hours in core courses
- a minimum of six credit hours 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 or human resource management.

Students who select an area of concentration are required to successfully complete 36 credit hours in core courses and concentration electives as follows:

- 27 credit hours in core courses
- a minimum of nine credit hours in concentration electives

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 residence requirements must be met. For more information, refer to Graduation Requirements in the Academic Policies and Regulations section earlier in this catalog.

Core Courses Requirement (27 credit hours)

Students must successfully complete the following MBA core courses:

- MBA 601 Managerial Economics
- MBA 602 Organizational Theory and Behavior
- MBA 604 Management Decision Analysis*
- MBA 605 Financial Management
- MBA 606 Management Information Systems
- MBA 608 Applied Business Research*
- MBA 609 Operations and Supply Chain Management
- MBA 613 Managerial Accounting
- MBA 614 Marketing Management
- MBA 618 Strategic Management

* Indicates a half semester or a compressed course format.

General MBA Degree

In addition to meeting the core courses requirements, students who do not elect an area of concentration must successfully complete two elective courses (a minimum of six credit hours) selected from any MBA courses not counted as core courses. Electives selected from outside of the MBA program must be approved by the MBA program director.

Finance Concentration (9 credit hours)

Students must successfully complete a minimum of nine credit hours in courses selected from the following:

- MBA 632 Investment Analysis
- MBA 633 Financial Derivatives
- MBA 634 Commercial Banking
- MBA 636 Islamic Banking and Finance
- any other approved elective. Consult the online course catalog or the online class schedule accessible via the AUS student information system to verify course classifications.

Human Resource Management Concentration (9 credit hours)

Students must successfully complete a minimum of nine credit hours in courses selected from the following:

- MBA 661 Strategic Human Resources Management
- MBA 662 International Human Resources Management
- MBA 663 Staffing
- MBA 664 Training and Development
- any other approved elective. Consult the online course catalog or the online class schedule accessible via the AUS student information system to verify course classifications.

Academic Advising

The Associate Dean for Graduate Programs provides 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, Department of Accounting

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 MSA program is to give our students an edge in passing the CPA exam and to prepare them for careers in professional accountancy. Courses in the MSA program will strengthen 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 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 objectives:

- Proficiency in the core knowledge 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.
- Mastery of the knowledge 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.
- Ability 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.
- Development of the accounting skills needed 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.
- Professional sophistication required to manage business complexities using leadership and critical-thinking skills

  Students will develop skills to apply appropriate professional skepticism in evaluating financial assertions.
- Development of technical and non-technical accounting competencies

  Students will be able to explain effectively technical accounting concepts in written and oral form.

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 more information, please refer to 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.

Academic Load

An MSA student may register for up to nine credit hours per semester. Upon a student's request, the Associate Dean for Graduate Programs can approve three additional credit hours if the student has achieved a cumulative GPA of 3.50 or above.

Academic Standing Policy

MSA students are allowed to receive two Cs (C or C+) in courses in the MSA program. A student who receives a third C or C+ is dismissed from the program. All university guidelines on academic dismissal outlined in the Academic Policies and Regulations section of this catalog apply.

Degree Requirements

To be awarded an MSA degree, students must successfully complete 30 credit hours in MSA core courses and electives as follows:

- 18 credit hours in core courses
- a minimum of six credit hours in ACC elective courses
- a minimum of six credit hours in MBA and/or MTH elective courses

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 residence requirements must be met. For more information, refer to Graduation Requirements in the Academic Policies and Regulations section earlier in this catalog.

Prerequisite Courses

Students admitted to the MSA program may be required to successfully complete a maximum of 24 credit hours 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 Head of the Department of Accounting at the time of admission. Waivers are only granted after an official, sealed transcript is received by the AUS Office of Enrollment Management/Graduate Admissions. For policy details, refer to Course Waiver in the Admission to Graduate Studies section earlier in this catalog.

Prerequisite Courses (24 credit hours)

- 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 credit hours in undergraduate courses selected from any other 300-level or above ACC courses. Approved non-AUS 300-level or above ACC courses meet this requirement.

Core Courses Requirement

Students must successfully complete 18 credit hours 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 credit hours)

In addition to meeting the core courses requirements, students must successfully complete two accounting (ACC) elective courses (for a minimum of six credit hours) and two MBA and/or MTH elective courses (for a minimum of six credit hours) as follows:

ACC Elective Courses (6 credit hours)

Students must select from the following list of courses:

- ACC 620 Forensic Accounting and Fraud Examination
- ACC 622 Internal Auditing
- ACC 623 Financial Statement Reporting and Analysis
- ACC 628 Fraudulent Financial Reporting
- ACC 694 approved special topic ACC courses. Consult the online course catalog or the online class schedule accessible via the AUS student information system to verify course classifications.

MBA and MTH Elective Courses (6 credit hours)

Students must successfully complete two courses for a minimum of six credit hours from the following:

- 600-level MBA courses, excluding MBA 613. Approved 600-level MBA special topics satisfy this requirement. Consult the online course catalog or the online class schedule accessible via the AUS student information system to verify course classifications.
- MTH 500 Mathematical Statistics with Applications
- MTH 507 Financial Mathematics I
- MTH 516 Financial Mathematics II

Academic Advising

The Department of Accounting 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 teaching faculty members within the Department of Accounting.

Program information is also available on the AUS website at the following link: www.aus.edu/sba/msa.


T11
T10
T9
T8
T7
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T4

College of Architecture, Art and Design

UPL Urban Planning

UPL 600 Planning History, Theory and Principles (3-0-3). Introduces the profession of urban planning and its cardinal doctrines. Surveys the history of the profession and its links to other environmental design fields. Reviews basic procedural and substantive theories that inform planning practice. Previews planning specializations, what planners do, and the tools they use and need to nurture sustainable cities. Prerequisite: admission to the MUP program.

UPL 602 Computer Applications in Planning (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 600. Lab/Tech fee rate A applies.

UPL 604 Urban Planning Research and Analysis (3-0-3). Introduces quantitative and qualitative research and analysis methods used in urban planning practice. Considers various sources of primary and secondary data (surveys, interviews and observations; national and international data repositories) and associated analytical skills (statistical analysis, qualitative analysis, forecasting, analysis of local economies). Emphasizes effective presentation of data and analyses. Prerequisite/concurrent: UPL 600.

UPL 621 Environmental and Land Use Planning (3-0-3). Provides a comprehensive overview of the field of sustainable environmental and land use planning, focusing on key principles, processes and skills for assessing, managing and protecting environmental resources—land, air, water, flora and fauna. Reviews the social, economic, political and legal dimensions of environmental and land use planning through case studies and best practices worldwide. Prerequisite/concurrent: UPL 600.

UPL 623 Urban Design Principles, Processes and Skills (4-0-3). Examines urban design principles, processes and necessary skill-sets. Differentiates between urban design as a discipline and as a profession and gives an overview of its evolution in the West. Examines the applicability and limitations of discussed concepts, processes and skills by engaging in projects ranging from problem formulation and analysis to spatial solutions and recommendations in the local/regional contexts. Prerequisite/concurrent: UPL 600.

UPL 625 Plan Making, Communication and Process (4-0-3). Introduces skills relevant to making useable plans. Reviews the need for and logic of plans, the challenges of collective choice, and the institutional context of plan making. Covers topics such as problem formulation and decision analysis; forecasting, impact assessment and scenario development; and facilitation, negotiation and mediation. Emphasizes effective presentation of data, analyses and recommendations. Requires individual and group work on applied tasks. Prerequisite/concurrent: UPL 600.

UPL 633 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. Prerequisite: UPL 600.

UPL 634 Tourism and Hospitality Planning (3-0-3). Covers the history of tourism and hospitality planning as a specialized field of study. Critiques tourism and hospitality concepts, trends, genres and case studies. Analyzes the political, economic, environmental and socio-cultural dimensions and implications of the tourism and hospitality industry. Assesses the links between tourism and sustainable development. Prerequisite: admission to the MUP program.

UPL 639 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. Prerequisite: UPL 600.

UPL 641 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. Reviews the economic impact of climate change as it relates to urban development. Places special attention on local fiscal behavior, overlapping jurisdictions and the provision of local public goods, and intergovernmental fiscal relations. Prerequisite: UPL 600.

UPL 651 Negotiation Strategies (3-0-3). Introduces key principles, strategies and dynamics of negotiation in the governmental, corporate, non-profit and grassroots sectors. Reviews relevant social theories and simulates experiences in negotiation and conflict resolution. Highlights relevance of negotiation to urban planning. Prerequisite: UPL 600.

UPL 681 Urban Planning and Research Workshop I (4-0-3). Covers the application of procedural and substantive skills in urban planning. Focuses on comprehensive planning exercises for urban areas, involving preliminary research, problem formulation, fieldwork, hands-on analysis, and the application of methods and tools for preparing urban plans. Prerequisites: UPL 602, UPL 604 and UPL 625; prerequisites/concurrent: UPL 621 and UPL 623.

UPL 682 Urban Planning and Research Workshop II (4-0-3). Continues the application of procedural and substantive skills in urban planning started in the Urban Planning and Research Workshop I. Focuses on comprehensive planning exercises for urban areas, involving preliminary research, problem formulation, fieldwork, hands-on analysis, and the application of methods and tools for preparing urban plans. Prerequisite: UPL 681.

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 credit hours). An existing course 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.

To be eligible to apply for an independent course, students must be in good academic standing.

Directed Study (1 to 4 credit hours). An investigation under faculty

supervision beyond the scope of existing courses.

Directed study courses are numbered as 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 credit hours). 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 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 during registration.

College of Arts and Sciences

ELT TESOL

ELT 501 Advanced English Grammar (3-0-3). Examines the structure, function and meaning of contemporary English. Discusses issues relative to descriptive/prescriptive approaches to language and ESL instruction.

ELT 507 Culture, Society and Language Learning (3-0-3). Explores the influence of cultural diversity on teaching and learning an additional language and the implications of language use in social contexts, like world, regional and international Englishes. Analyzes methods and approaches for intercultural research and prepares language teachers in practical and theoretical areas of pragmatics and sociolinguistics, providing opportunities to prepare, present and evaluate authentic lessons that enrich intercultural competence.

ELT 511 Linguistics for ESL Teachers (3-0-3). 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 the principles of ESL course design. Examines the stages of developing and evaluating learning centered curricula and materials. Prerequisite: admission to the MATESOL program.

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.

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 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.

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.

ELT 617 Quantitative, Qualitative and Action Research in ELT (3-0-3). Surveys quantitative, qualitative and action research approaches in language learning and teaching. Emphasizes the role of research design, data collection and the interpretation of results. Graduate students pursuing the thesis option may use this course to develop their proposals. Prerequisite: admission to the MATESOL program.

ELT 619 Practicum in TESOL (3 credit hours). 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. Prerequisites: ELT 511 and ELT 513; prerequisite/concurrent: ELT 515.

ELT 699 Master's Thesis (6 credit hours). Requires completion of 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/No Pass. Prerequisite: good academic standing.

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: Approval of program coordinator.

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 Poincare 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: Approval of program coordinator.

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 MSBME or MSMTH programs.

MTH 511 Real Analysis (3-0-3). Covers Riemann integration and the associated convergence theorems, Lebesgue measure on the real line, Lebesgue measurable functions and Lebesgue integration on the real line. Addresses bounded convergence theorem, Fatou's lemma, monotone convergence theorem, Lebesgue dominated convergence theorem, Vitali convergence theorem, absolute continuity, differentiation and integration, Lp spaces, Holder and Minkowski inequalities, and the Riesz

Fischer Theorem. Prerequisite: admission to MSMTH program.

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, Ito 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: MTH 507.

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 532 Abstract Algebra (3-0-3). Covers basic properties of groups, normal subgroups and direct sum of groups; homomorphism and isomorphism between groups; classification of finite abelian groups; and applications of Sylow's Theorems. Introduces rings, ideals, polynomial rings, irreducible and prime elements of rings, unique factorization domains, fields and their extensions including finite fields. Prerequisite: admission to the MSMTH program.

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 credit hours). Requires completion of 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/No Pass. Prerequisites: good academic standing and approval of 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 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. Presents theoretical insights into the process of interpreting and places them 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, Arabicization 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 Arabicization and its impact on translation into Arabic. Demonstrates the application of theoretical framework of terminology and Arabicization 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 557 Translation of Administrative and Legal Documents (3-0-3). Addresses the practical translation of administrative and legal documents such as contracts, certificates, court and police documents, laws, and more. Analyzes specialized and idiomatic language of administrative and legal documents in the context of translation and market requirements. Prerequisite: TRA 500.

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. Promotes a discourse pragmatic perspective, together with a functional approach to the lexico-grammar to look at the way texts are organized functionally. Prerequisite: TRA 500.

TRA 560 Audiovisual Translation (3-0-3). Introduces different genres of audiovisual translation. Includes the semiotic, linguistic and cultural issues involved in multimedia productions and their translation. Covers translating scripts of various cinema and TV productions into and out of Arabic and English and deals with the linguistic and cultural problems of audiovisual translation. Introduces research areas in audiovisual translation. 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/No Pass. Prerequisite: approval of program coordinator.

TRA 699 Master's Thesis (6 credit hours). Requires completion of 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. Places emphasis 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/No Pass. Prerequisites: good academic standing and 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 credit hours). An existing course 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.

To be eligible to apply for an independent course, students must be in good academic standing.

Directed Study (1 to 4 credit hours). An investigation under faculty supervision beyond in the scope of 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 credit hours). 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 during registration.

College of Engineering

BME Biomedical Engineering

BME 511 Human Anatomy and Physiology (3-0-3). Provides an overview of the human body structures and their functions. Covers the basic structure of cells, tissues, anatomical body organization, and several organ systems including the cardiovascular, nervous, sensory, digestive, skeletal, muscular and urinary systems. Highlights the structure-function relationships and how abnormalities in structure and/or function of tissues and organs lead to diseases. Presents engineering approaches for the diagnosis and prevention/treatment of various diseases. Prerequisite: admission to the MSBME program.

BME 541 Biomedical Measurements and Devices (3-0-3). Covers biomedical sensors and transducers, signal acquisition, amplifiers and real-time biomedical signal processing, measurement of biopotentials, blood flow and pressure, chemical biosensors and clinical laboratory instrumentation. Prerequisite: admission to the MSBME program.

BME 543 Biomedical Imaging Technologies (3-0-3). Introduces several medical imaging modalities, including X-ray imaging, computerized tomography, magnetic resonance imaging, ultrasound imaging and positron emission tomography. Explores the clinical applications for the medical imaging modalities. Prerequisite: admission to the MSBME program.

BME 544 Neuroengineering (3-0-3). Covers field potential generation, electrode design and electrophysiological neuroimaging. Introduces seizure detection and prediction of epilepsy, and quantitative assessment of brain injury and spinal cord injury. Includes deep brain stimulation, visual prosthetics, cochlear implants and brain machine interface. Prerequisite: admission to the MSBME program.

BME 551 Biofluid Mechanics (3-0-3). Cover the flow of biofluids, measurement methods and modeling for biomedical engineering applications. Applications include respiratory flow, blood flow in physiological and in artificial environments, pulse propagation and rheology of blood flow in the microcirculation. Prerequisite: admission to the MSBME program.

BME 552 Drug Delivery (3-0-3). Discusses cells signaling mechanisms. Introduces the calculations of drug dosages, drug clearance and receptor binding kinetics. Explains the various ways a drug can be administered to the body, and discusses various types of drug delivery administration paths including ingestion, inhalation, surgical implantation, transdermal, intravenous injection, peritoneal, pulmonary and targeted routes. Models pharmacokinetics in the human body. Introduces equilibrium pharmacokinetic models. Prerequisite: BME 551.

BME 561 Healthcare Operations Management (3-0-3). Covers topics in the application of quantitative and operations research techniques to healthcare planning, control and decision. Includes scheduling, productivity, decision making, quality management, project management, supply chain and inventory management, and financial performance. Prerequisite: admission to the MSBME program.

BME 562 Healthcare Planning and Risk Management (3-0-3). Covers how to plan for new or existing health services, programs or facilities. Presents role of health planner, managers, providers and governing boards. Introduces the concept of risk management in health. Provides a historical perspective on the development of healthcare risk management, the role of the healthcare risk manager, the principles of healthcare risk management and the connection between risk management, quality improvement and corporate compliance in various healthcare settings. Covers practical approaches to healthcare problems using case analysis of actual healthcare projects and programs. Prerequisite: BME 561.

BME 571 Biomechanics Engineering (3-0-3). Provides an overview of musculoskeletal anatomy, the mechanical properties and structural behavior of biological tissues, and biodynamics. Includes application of stress and strain analysis to biological tissues, analysis of forces in human function and movement, energy and power in human activity, and introduces modeling viscoelasticity of tissues. Covers classification and bulk properties of implantable materials. Prerequisite: admission to the MSBME program.

BME 572 Biomaterials Engineering (3-0-3). Gives students the background concepts in biology, biochemistry and medicine relating to biomaterials. Covers the fundamental classes of materials used in medicine, foreign body reactions to biopolymers, and bioceramics. Discusses the degradation of materials in a biological environment, and outlines methods used for biomaterial testing and implant sterilization. Prerequisite: admission to the MSBME program.

BME 581 Biomedical Informatics (3-0-3). Presents the core concepts and methods of biomedical informatics and discusses its role in the healthcare process. Emphasizes the organization of information using computational approaches, and the impact of such approaches on patient care and biomedical research. Includes a final project that requires an in-depth examination, critique and presentation of a specific topic in biomedical informatics. Prerequisite: admission to the MSBME program.

BME 582 Computational Molecular Biology (3-0-3). Introduces the computational methods used to understand the cell on a molecular level. Covers subjects such as the sequence alignment algorithms: dynamic programming, hashing, suffix trees and Gibbs sampling. Focuses on computational approaches to genetic and physical mapping; genome sequencing, assembly and annotation; RNA expression and secondary structure; protein structure and folding; and molecular interactions and dynamics. Prerequisite: BME 511.

BME 594/BME 694 Special Topic in Biomedical Engineering (1 to 4 credit hours). 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.

BME 596/BME 696 Independent Study in Biomedical Engineering (1 to 4 credit hours). 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.

BME 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. Addresses ethical issues in biomedical engineering. Graded as Pass/Fail. Prerequisite: admission to the MSBME program.

BME 698 Professional Project (3 credit hours). Requires an approved professional project on a

selected area of biomedical 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/No Pass. Prerequisites: approval of the program director; prerequisite/concurrent: BME 695.

BME 699 Master's Thesis (9 credit hours). Requires completion of 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/No Pass. Prerequisites: approval of the program director; prerequisite/concurrent: BME 695.

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/concurrent: NGN 509.

CHE 594/CHE 694 Special Topic in Chemical Engineering (1 to 4 credit hours). 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 credit hours). 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: CHE 510.

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/concurrent: NGN 500.

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 credit hours). 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/No Pass. Prerequisites: good academic standing and approval of department head; prerequisite/concurrent: CHE 695.

CHE 699 Master's Thesis (9 credit hours). Requires completion of 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/No Pass. Prerequisites: good academic standing and 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 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 555 Computer and Network Security (3-0-3). Covers advanced topics in computer and network security, including: information security and risk management, disaster recovery planning, operations security, access control, applied cryptography and public key infrastructure, network security, and laws and regulations in computer security. Prerequisite: admission to the MSCoE program.

COE 594/COE 694 Special Topic in Computer Engineering (1 to 4 credit hours). 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 credit hours). 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 635 Optical Networks (3-0-3). Covers the following advanced concepts in optical communications and networking. Includes 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, SONET/SDH networks, WDM components, WDM network design issues. 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 637 Data Mining and Knowledge Discovery (3-0-3). Introduces the principles of data mining and knowledge discovery (KDD). Covers key topics including data preparation, visualization, pattern recognition and statistical machine learning techniques, experimental validation, and model interpretation. Studies examples of practical applications using state-of-the-art software in the field, such as R or Weka. Prerequisite: admission to the MSCoE program.

COE 639 Digital Video Compression (3-0-3). Covers the theory and applications of digital video compression. Introduces lossless and lossy compression algorithms. Covers transform coding. Introduces international compression standards such as JPEG and MPEG. Examines digital video transcoding and error resiliency. 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 credit hours). 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/No Pass. Prerequisites: good academic standing and approval of department head; prerequisite/concurrent: COE 695.

COE 699 Master's Thesis (9 credit hours). Requires completion of 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/No Pass. Prerequisites: good academic standing and 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 524 Design of Strengthened Concrete Structures (3-0-3). Covers basic mechanics of composites. Introduces different strengthening methods for existing reinforced and prestressed concrete structures. Covers general design philosophies using relevant codes; strengthening of structural elements in flexure, shear, axial and combined loadings; emphasizes the use of computers in the analysis and design of concrete structures strengthened with composites. Prerequisite: admission to the MSCE program.

CVE 525 Structural Earthquake Engineering (3-0-3). Provides an overview of how earthquake causes and effects are traced from source to structure, as well as features and representations of strong ground motion. Explores estimating structural damage and hysteretic damping from inelastic deformations and rotations. Covers assessments of structural integrity and stability during seismic events. Presents pseudo-static and dynamic nonlinear analyses for quantifying the response of structural systems and components. Introduces Performance-Based Earthquake Engineering (PBEE). Prerequisite: admission to the MSCE program.

CVE 526 Advanced Structural Steel Design (3-0-3). Covers behavior and design of connections and members used in steel and composite structures including bolted and welded connections under shear and combined forces; simple shear connections, partially-restrained and fully-restrained moment connections; composite beams, composite columns, and built-up plate girders. Introduce seismic provisions for design of steel structures. Prerequisite: admission to the MSCE program.

CVE 527 Optimization Techniques for Civil Engineering Systems (3-0-3). Introduces Operations Research (OR) techniques and their applications in civil engineering systems. Focuses on network problem, transportation models, formulation of transportation models, formulation of standard assignment problems, and shortest path models. Includes the use of software packages for solving Operations Research problems. Prerequisite: admission to the MSCE program.

CVE 531 Dynamics of Machine Foundations (3-0-3). Introduces industrial machines, dynamic loads on foundations and types of foundations for industrial machines. Reviews major laboratory and field tests for evaluation of dynamic properties of soils. Introduces calculation of stiffness and damping coefficients for vertical, horizontal and coupled modes of vibrations. Covers design of shallow and deep foundations of vibrating machines and shock producing machines, and base isolation systems. 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 credit hours). 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 credit hours). 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 663 Traffic Flow Theory (3-0-3). Covers the fundamental properties of traffic flow: microscopic and macroscopic flow, microscopic and macroscopic speed, microscopic and macroscopic density, demand-supply analysis, capacity analysis, traffic stream models, network flow, shockwave analysis, queuing analysis and control of congested systems. 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 credit hours). 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/No Pass. Prerequisites: good academic standing and approval of department head; prerequisite/concurrent: CVE 695.

CVE 699 Master's Thesis (9 credit hours). Requires completion of 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/No Pass. Prerequisites: good academic standing and approval of department head; prerequisite/concurrent: CVE 695.

ELE Electrical Engineering

ELE 540 Principles of Digital Communications (3-0-3). Reviews probability concepts and random processes. Covers representation of bandpass signals and systems, baseband and bandpass digital modulation schemes, memory-less and memory-based modulation schemes, power spectral density calculations, optimum receiver design and performance analysis over AWGN, and optimum detection in presence of uncertainty. Prerequisite: approval of department head.

ELE 542 Applied Electromagnetics (3-0-3). Explores concepts and applications of Maxwell's equations for electromagnetism. Topics covered include: Maxwell's equations; boundary conditions; power flow; wave equation and its solutions; plane wave propagation and polarization; reflection and transmission; auxiliary potentials; theorems of field calculations (uniqueness, image, reciprocity, duality, and equivalence); transmission lines; waveguides; antennas and radiation. 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, MMSE filters and array signal processing. Prerequisite: admission to the MSEE or MSBME or MSMTR programs.

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 547 Distributed Energy Resources in Smart Grids (3-0-3). Covers operation, modeling, economics, and planning of different distributed energy resources such as dispatchable generation systems, photovoltaic energy systems, wind energy systems, energy storage systems, and electric vehicles. Includes introduction to smart grid, microgrids, and demand response concepts. Prerequisite: admission to the MSEE program.

ELE 594/ELE 694 Special Topic in Electrical Engineering (1 to 4 credit hours). 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 credit hours). 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 641 Advanced Microwave Engineering (3-0-3). Explores concepts related to microwave engineering and its applications. Topics covered include: transmission-line theory; microstrip lines; Smith charts; impedance matching; microwave network analysis; microwave amplifiers; microwave filters; power dividers; radar systems and microwave radiometry; microwave measurements and calibration; simulations using CAD tools. Prerequisite: admission to the MSEE program; 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 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 tress, support vector machines and Hidden Markov Models. Prerequisite: approval of department head.

ELE 649 Power System Transients (3-0-3). Covers transient analysis, travelling waves on transmission lines, lightning and switching surges, insulation coordination, grounding and surge protection devices. Prerequisite: admission to the MSEE program.

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 credit hours). 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/No Pass. Prerequisites: good academic standing and approval of department head; prerequisite/concurrent: ELE 695.

ELE 699 Master's Thesis (9 credit hours). Requires completion of 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/No Pass. Prerequisites: good academic standing and approval of department head; prerequisite/concurrent: ELE 695.

ESM Engineering Systems Management

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 MSESM program.

ESM 535 Introduction to Management Science (3-0-3). Introduces deterministic and stochastic operations research methods including formulation and applications of linear network and integer problems. Covers basic probability concepts, distributions, forecasting methods, Markov chains and simulation. Emphasizes problem formulation, solution methods using suitable software and interpretation of results. Uses various optimization, statistics, and simulation software to solve problems and case studies. Prerequisite: admission to the MSESM 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, time-constrained scheduling, resource-constrained scheduling, risk management, and project monitoring and control. Integrates and clarifies the principles and tools through case studies from a variety of disciplines. Prerequisites: admission to the MSESM program and approval of the 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. Prerequisites: admission to the MSESM program and approval of the program director.

ESM 594/ESM 694/ESM 794 Special Topic in Engineering Systems Management (1 to 4 credit hours). 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/ESM 796 Independent Study in Engineering Systems Management (1 to 4 credit hours). 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 including research

problem formulation and justification, critical literature review, definition and formulation of research questions, and selection research tools and methods. Covers quantitative, qualitative and mixed research methods; internal and external construct validity and reliability issues; introduction to quasi-experimental design and case study methodologies; effective academic writing using various style guidelines; delineation of research directions for the future, ethics, academic fraud and plagiarism. Prerequisite: admission to the MEESM program.

ESM 615 Big Data and Business Analytics (3-0-3). Introduces application of descriptive analytics, data mining and predictive analytical methods to address business problems. Covers analytical methods including nearest neighbor, classification trees, naïve Bayes, linear regression, logistic regression, support vector machines, and TFIDF. Shows how to apply model evaluation techniques including cross-validation, attribute selection and tree pruning, and profit and AUC curves. Discusses alignment of data science applications to corporate strategy. Prerequisite: ESM535.

ESM 625 Enterprise Resource Planning Systems (3-0-3). Provides an overview of ERP systems and their implementation in practice. Covers various applications within the enterprise framework such as procurement, orders fulfillment, production, inventory management and material planning. Includes real examples on ERP implementation and hands-on experience using an ERP software. Prerequisite: admission to the MSESM program.

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, Taguchi methods, and six sigma. Includes case studies from both the service and industrial sectors. Prerequisite: ESM 535.

ESM 634 Advanced Modeling and Simulation (3-0-3). Covers advanced principles associated with systems modeling and simulation using contemporary software tools. Includes topics such as problem formulation, queuing theory, Markov chain, discrete event simulation modeling and analysis of alternatives and selection of the optimum solution. Prerequisite: ESM 535.

ESM 636 Human Resources Management for Engineers (3-0-3). Covers human resource planning processes, tools and techniques, job specification and methods of job analysis for engineering organizations. 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 535.

ESM 640 Supply Chain Management (3-0-3). Explores key issues related to the design, planning and operation of supply chains. Covers supply chain structure, supply chain performance metrics, network design and facility location in a supply chain. Discusses aggregate planning, planning and managing inventory in a supply chain, transportation, pricing and revenue management, green supply chain and supply chain risk management. Prerequisite: ESM 535.

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, capital structure, securities analysis and financial markets, and forecasting financial markets. Includes practical financial management case studies in technical organizations. Prerequisite: ESM 575.

ESM 660 Legal Aspects of Engineering (3-0-3). Introduces the fundamentals of the UAE legal system, rules of evidence, property laws (both tangible and IP), technology transfer regulations, product liability, and professional liability for engineers. Discusses partnering among organizations, business and government agencies, labor laws, international construction contracts, FIDIC, and insurance and surety industry regulations. Covers strategies for avoiding or terminating litigation, alternative dispute resolution techniques such as mediation, arbitration and mock trials, in addition to claims presentation and cost evaluation. Prerequisites: ESM 570 or approval of the program director.

ESM 670 Project Risk Management (3-0-3). Focuses on the process of risk management including risk management planning; identifying risks; qualitative risk analysis; quantitative risk analysis; risk response planning and monitoring and control. Covers the tools and techniques for managing risks associated with various stages of the project life cycle. Provides a methodology for a systematic approach to risk management in addition to the related ISO standards. Prerequisite: ESM 570.

ESM 675 Project Procurement Management (3-0-3). Covers elements of structured procurements, including procurement planning, competitive solicitations, negotiations, legal considerations of procurement, contract management and administration, dispute resolution, and procurement ethics. Discusses the standards of ISO 20400: sustainable procurement and ISO 44001: collaborative business relationship management systems. includes an in-depth explanation of the roles of the procurement professionals on the project team. Prerequisite: ESM 570.

ESM 685 Capstone Course in Engineering Systems Management (3-0-3). Presents an opportunity to showcase accumulated theoretical and the practical knowledge in ESM. The general intent of the engineering capstone is to demonstrate 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 credit hours). Requires completion of an approved professional project on a selected area of engineering management and systems engineering. Requires demonstration of the ability to integrate the information and the skills accumulated through rigorous written and oral communication. A final report and presentation must be submitted to the examining committee. Graded as Pass/No Pass. Prerequisites: good academic standing and approval of program director.

ESM 699 Master's Thesis (6 credit hours). Requires completion of original research work in a multidisciplinary area in engineering systems management. Requires demonstration of the ability to integrate the information and the skills accumulated 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/No Pass. Prerequisites: good academic standing and approval of program director.

ESM 701 Research Methods (3-0-3). Equips PhD students with a good understanding of qualitative and quantitative research methods at both conceptual and applied levels to prepare them to undertake substantiated and rigorous scholarly research work, particularly dissertation and research papers. Familiarizes students with basic tenets of research, knowledge, methods, and success in research. Includes problem formulation, literature review, hypotheses formulation, proposal preparation, and empirical testing techniques. Enables students to formulate empirical research using experimental or descriptive research approaches. Utilizes commonly used statistical models such as nonparametric association and correlation measures and Analysis of Variance to analyze and interpret actual data. Prerequisites: admission to the PhD-ESM program and approval of program director.

ESM 702 Multivariate Data Analysis (3-0-3). Discusses techniques for analyzing multivariate experimental and observational data. Provides a working knowledge of several multivariate data analysis techniques to conduct empirical research. Covers exploratory multivariate data analysis, multivariate analysis of variance, multivariate regression analysis, principal components analysis, factor analysis, clustering analysis, and structural equation modeling. Utilizes commonly used statistical software for data analysis, such as Minitab, STATA, and the R free open-source package. Prerequisites: admission to the PhD-ESM program and approval of program director.

ESM 710 Advanced Decision Marketing Analysis (3-0-3). Provides the necessary theoretical knowledge towards analyzing and making decisions. Covers multiple objectives, influence diagrams, decision trees, risk assessment and quantification, single and multi-attribute utility, techniques for multi-criteria decision making (MCDM) and game theory. Prerequisites: ESM 701, ESM 702 and consent of the instructor.

ESM 711 Deterministic Optimization Techniques (3-0-3). Covers deterministic operations research techniques and their underlying theory. Includes advanced topics in large scale optimization, integer programming, non-linear programming, and meta-heuristic optimization techniques. Prerequisites: ESM 701, 702 and consent of the instructor.

ESM 712 Advanced Supply Chain Management (3-0-3). Covers leading edge topics in global supply chain management including latest supply chain strategies, strategic sourcing, technological advances in supply chain management, supply chain risk management approaches, sustainable supply chain, ethical issues in supply chain management, and humanitarian supply chain. Prerequisites: ESM 701, ESM 702 and consent of the instructor.

ESM 713 Supply Chain Modeling (3-0-3). Explores how optimization techniques can support decisions in the design, planning and operation of a supply chain. Covers deterministic and stochastic models in supply chain management. Includes advanced topics in supply chain design, supply chain coordination, closed loop supply chains, supply chain risk and sustainability. Prerequisites: ESM 711 and consent of the instructor.

ESM 714 Modeling and Analysis of Logistics Systems (3-0-3). Discusses the modeling and analysis of logistics and physical distribution systems. Includes location and design of facilities, tactical and operational decisions related to warehousing, management of logistics systems and management of ports operations and container terminals. Prerequisites: ESM 711 and consent of the instructor.

ESM 720 Sustainable Development for Engineers (3-0-3). Covers both the rudimentary and radical concepts of sustainable development and economic growth in a social and environmental context. Discusses, analyzes and evaluates patterns of development. Investigates the impacts of engineering projects in local and international communities via well-structured research questions utilizing theoretical and empirical research techniques. Evaluates contemporary trends in sustainable technology in relation to the different project settings. Prerequisites: ESM 701, ESM 702 and consent of the instructor.

ESM 721 Sustainable Development and Global Competitiveness (3-0-3). Introduces students with technical backgrounds to the macro realm of sustainable development, international economics, and urban planning and regeneration. Highlights the role of multinational corporations and mega projects in global competitiveness. Presents the subtle overlap between design patterns, development, and regulations in sustainable development projects. Deliberates the latest UN sustainable development goals and their expected aftermath in the international setting. Uses case studies and research workgroups to demonstrate the comprehensive link between economic growth and social progress. Prerequisites: ESM 701, ESM 702 and consent of the instructor.

ESM 722 Sustainable Analytics and Resource Management (3-0-3). Focuses on sustainability data analyses and covers current and innovative methodologies in optimal energy and water resource management in construction projects. Explores data-driven resource management techniques during design, construction, and operation. Utilizes regression analysis, economic impact analysis, and feasibility studies in answering research questions through a series of case studies and projects. Prerequisites: ESM 701, ESM 702 and consent of the instructor.

ESM 723 The Living Building (3-0-3). Focuses on the Living Building Challenge performance areas. Introduces the "beyond regenerative" concept of an organic, living building envelope for commercial and residential construction. Explains the core construction practices in relation to net zero energy and net zero water techniques. Presents traditional and renewable grid balance techniques through a series of projects and seminars. Prerequisites: ESM 701, ESM 702 and consent of the instructor.

ESM 724 Sustainable Ecosystems (3-0-3). Covers integrated ecological planning and sustainable land management in coastal ecosystems. Discusses fundamental concepts and practical quantitative problem-solving techniques dealing with contamination, environmental toxicology, and ecosystem turbulence due to manmade construction projects. Prerequisites: ESM 701, ESM 702 and consent of the instructor.

ESM 725 Programs and Portfolio Management (3-0-3). Presents a view of managing projects from an organizational perspective. Discusses strategic alignment, project and program selection techniques, the role of effectively managing organizational assets through an enterprise project management office as a governance entity, portfolio management and program management. Covers schedule integration, resource management and portfolio risk management. Covers tools such as Analytic Hierarchy Process, Earned Value Management and Monte Carlo Simulation. Uses specific examples and case studies to explore and apply practices to create and manage portfolios of programs and projects to efficiently leverage organizational assets. Prerequisites: ESM 701, ESM 702 and consent of the instructor.

ESM 730 Tools for Big Data (3-0-3). Covers software tools for manipulating, storing and analyzing Big Data in various formats like sensor and web logs, videos, speech recordings, images, e-mails, and tweets, etc. Covers the use of R system for data manipulation and for Statistical and Machine Learning. Explains the use of MapReduce/Hadoop for scalable data processing in conjunction with Hive/Pig. Introduces NoSQL databases like MongoDB and CouchDB. Includes techniques for processing streaming real-time data. Discusses tools for visualizing large data and integration strategies for various Big Data tools. Prerequisites: ESM 701, ESM 702 and consent of the instructor.

ESM 731 Smart Cities Infrastructure and Services (3-0-3). Identifies and investigates smart cities major infrastructure pillars. Discusses smart cities physical layer and enabling technologies, developing smart cities conceptual model and multi-criteria assessment transformation based on SWOT analysis. Studies smart cities resources and services such as smart energy, smart buildings, smart transportation, smart water, smart waste, smart physical safety and security, smart health care and smart education. Explores smart cities social impact and ethical issues. Prerequisites: ESM 701, ESM 702 and consent of the instructor.

ESM 732 Networking Architectures for Smart Cities (3-0-3). Introduces communication networks for smart cities. Discusses architectures, models, protocols and the emerging new Internet of Things (IoT) paradigm. Addresses the principles of flow and congestion control, addressing, signaling switching and routing, multiple access approaches, convergence sublayer solutions and standards, physical layer technologies, and network security. Prerequisites: ESM 701, ESM 702 and consent of the instructor.

ESM 733 Electronic, Social and Sensor Network Applications for Smart Cities (3-0-3). Covers the foundations of electronic, social and sensor network applications including infrastructure, services and application layers with special emphasis on sensors and mobile devices. Explores harvesting and processing techniques for large-scale near real-time data from smart cities. Discusses the role of Geographical Information Systems (GIS) and associated spatial analysis. Covers design of networks for capturing resource consumption and mobility patterns. Discusses the use of statistical and big data techniques to improve city services based on harvested data, and business models for sustainable deployment of smart city applications. Covers Ethics of data-driven urbanism. Includes case studies in selected areas of learning, recreation, energy, production, and health. Prerequisite: ESM 730.

ESM 734 Trust and Security for Smart Cities (3-0-3). Covers advanced security and trust concepts and implementation in wired and wireless computer networks and computer systems especially in the context of smart cities. Includes malware defenses, impact of channel fragility, node mobility, cooperative functionality, and resource constraints on security and trust at the different layers of the Internet protocol stack. Discusses special topics in privacy of personal data such as mobility patterns, resource consumption (food, water, energy), and individualized health profiles. Prerequisite: ESM 731.

ESM 740 Advanced Quality Engineering (3-0-3). Covers emerging issues with quality engineering and management such as innovation, happiness, and process re-engineering with a focus on both quantitative and qualitative analytical skills essential to conducting research. Examines organizational development and deployment of service management systems utilized in achieving service quality. Includes analysis of business case, enablers, and detractors of Six Sigma and quality awards deployment in both manufacturing and service sectors through critical articles reviews. Prerequisites: ESM 701, ESM 702 and consent of instructor.

ESM 741 Organizational Performance Management (3-0-3). Explores traditional and contemporary Performance Management (PM) frameworks and models at the organization level, unit level, and the individual level. Focuses on designing PM systems that integrate strategy, execution, methodologies, and risk. Details the design of the added-value PM systems including goals and objectives, the operational process, support process, evaluation and control, and organization behavior. Covers PM measurements system's design and analysis using the various Key Performance Indicators, Key Risk Indicators, and Key Control Indicators. Includes PM implementation pitfalls and Critical Success Factors. Prerequisites: ESM 701 and ESM 702.

ESM 742 Strategic Human Resources Management (3-0-3). Explores how Human Resources Management (HRM) policies and procedures can add value to an organization. Covers state-of-the-art HMR approaches to become a strategic partner in improving resource utilization and help companies achieve their goals. Includes the processes of developing and implementing human resources (HR) strategies to promote a healthy social and psychological environment for the workforce. Discusses the link between HRM and outcomes at the firm and individual level; the roles and capabilities of the HR department and of individual HR professionals; and HRM in multinational corporations, comparative HRM, and global mobility. Examines the particularities of HRM in the public sector and in the GCC countries. Prerequisites: ESM 701, ESM 702 and consent of the instructor.

ESM 743 Strategic Management (3-0-3). Covers analysis of internal and external environments of an organization. Explores the development of appropriate strategies, objectives, and key performance indicators (KPIs). Prerequisites: ESM 701, ESM 702 and consent of the instructor.

ESM 790 Qualifying Examination (0-0-0). Includes written and oral parts to test breadth of knowledge, understanding of fundamentals, and ability to perform independent research work in an engineering systems management specific area. Can only be repeated once with approval of VPGS. Graded as Pass/Fail. Prerequisites: completion of 12 credit hours including ESM 701 and ESM 702, good academic standing and approval of program director.

ESM 795 Doctoral Seminar (1-0-0). Provides a unique discussion forum for interaction with a diverse group of faculty from the different departments of the College of Engineering, as well as outside presenters. Encompasses a wide variety of pertinent topics from different ESM research areas. Graded as Pass/Fail. Prerequisite: admission to the PhD-ESM program.

ESM 799 Dissertation (a minimum of 24 credit hours). Includes the preparation, presentation and defense of the research proposal, as well as the write-up, presentation and defense of the dissertation. Graded as Pass/No Pass. Prerequisites: Qualifying Examination and approval of Program Director.

MCE Mechanical Engineering

MCE 550 Mechanical Systems Design (3-0-3). Introduces the design methodology applicable to mechanical systems. Includes the following topics: 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 problems. 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 credit hours). 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 credit hours). 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 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: admission to the MSMCE program.

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 credit hours). 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/No Pass. Prerequisites: good academic standing and approval of department head; prerequisite/concurrent: MCE 695.

MCE 699 Master's Thesis (9 credit hours). Requires completion of 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/No Pass. Prerequisites: good academic standing and 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. 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 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, servomechanism identification and design, and design of continuous and digital control systems using modern analytic and computer design. Prerequisite: admission to the MSMTR program.

MTR 550 Robotics Systems (2-3-3). Covers homogenous coordinates and transform representations, kinematic chains, Forward and Inverse Kinematics, differential kinematics: Jacobian computation, singular configurations, Motion planning in robotics, and robot control strategies. Prerequisite: admission to the MSMTR program.

MTR 594/MTR 694 Special Topic in Mechatronics Engineering (1 to 4 credit hours). 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 credit hours). 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 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: admission to the MSMTR program.

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: admission to MSMTR program.

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 650 Applied Linear Estimation (3-0-3). Introduces linear algebra and 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: admission to the MSMTR program.

MTR 690 Mechatronics Design (2-3-3). Covers actuators and sensors modeling and presents different types of modeling and simulation of mechatronic systems. 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. Prerequisite: MTR 520; 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 credit hours). Requires completion of extended and original research work on a topic related to elements of computing, mechanics, electronics and intelligence. Graded as Pass/No Pass. Prerequisites: good academic standing and 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 MSBME or MSChE or MSCE or MSCoE 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 MSBME or MSCE or MSCoE or MSEE or MSME programs.

NGN 509 Computational Methods for Engineers (3-0-3). Covers numerical error analysis; solving system of linear and nonlinear algebraic equations; nonlinear regression and optimization techniques; numerical solutions of ordinary and partial differential equations; applications of numerical methods for engineering problems using MATLAB. Prerequisite: admission to the MSBME or MSChE or MSCE or MSCoE or MSEE or MSME programs.

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 credit hours). An existing course 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.

To be eligible to apply for an independent course, students must be in good academic standing.

Directed Study (1 to 4 credit hours). An investigation under faculty supervision beyond the scope of 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 credit hours). 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 during registration.

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. Provides preparation 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. Provides preparation 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 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. Provides preparation 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 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 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.

BUS Business

BUS 501 Introduction to Economics (1.5-0-1.5). Provides an introductory survey of microeconomics and macroeconomics, designed primarily as a bridging course for graduate students unfamiliar with the principles of economics. Includes elements of supply and demand, consumer behavior, costs, market structures and income distribution. Analyzes movements in prices and national output, inflation, unemployment, and monetary and fiscal policy. Offered over an eight-week period. Graded as Pass/Fail. Restricted to School of Business Administration students.

BUS 502 Quantitative Methods (1.5-0-1.5). 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. Uses 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. Offered over an eight-week period. Graded as Pass/Fail. Restricted to School of Business Administration students.

BUS 503 Financial Accounting (1.5-0-1.5). Develops the ability to analyze and interpret financial statements for the purpose of making managerial and investment decisions. Improves communication, leadership and presentation skills, which are essential for business executives. Offered over an eight-week period. Graded as Pass/Fail. Restricted to School of Business Administration students.

MBA Business Administration

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. Restricted to MBA and MSA programs, excluding Pre-MBA students.

MBA 602 Organizational Theory and Behavior (3-0-3). Applies management theory to factors that influence individual and group performance while incorporating current management theory and research. Emphasizes the total organization and its subsystems with topics including structure and design, organizational culture, communication, individual and group dynamics, teamwork, power and influence, decision making, and the role of leadership. Restricted to MBA and MSA programs, excluding Pre-MBA students.

MBA 604 Management Decision Analysis (1.5-0-1.5). (Formerly MBA 508). 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. Restricted to MBA and MSA programs, excluding Pre-MBA students.

MBA 605 Financial Management (3-0-3). (Formerly MBA 505). 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. Restricted to MBA and MSA programs, excluding Pre-MBA students.

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. Restricted to MBA and MSA programs, excluding Pre-MBA students.

MBA 608 Applied Business Research (1.5-0-1.5). Provides a basic understanding of research methodology as well as insight into the application of modern analytical tools and techniques for the purpose of management decision-making. Emphasizes the nature of the research problem, problem identification and formulation, methods of observation and data collection, analysis and interpretation, research communication, and project development. Restricted to MBA and MSA programs, excluding Pre-MBA students.

MBA 609 Operations and Supply Chain 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, lean production, and introduces basic concepts of logistics and supply chain management ranging from 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. Prerequisite: MBA 604.

MBA 613 Managerial Accounting (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. Restricted to the MBA program, excluding Pre-MBA students.

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. Includes interactive learning techniques such as 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. Restricted to the MBA program, excluding Pre-MBA students.

MBA 618 Strategic Management (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 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. Prerequisite: completion of a minimum of five core MBA courses including MBA 602 and MBA 614; prerequisite/concurrent: MBA 609.

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 605

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 605.

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. Introduces topics that help develop an appreciation of the trade-offs between 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 605.

MBA 636 Islamic Banking and Finance (3-0-3). Provides 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 developments in Islamic banking and the finance industry. Prerequisite: MBA 605.

MBA 640 Leadership and Change Management (3-0-3). (Formerly MBA 612). 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. Restricted to MBA and MSA programs, excluding Pre-MBA students.

MBA 641 Innovation and Entrepreneurship (3-0-3). (Formerly MBA 615). 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 the completion of an interdisciplinary, team-based project whereby students will develop 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. Restricted to MBA and MSA programs, excluding Pre-MBA students.

MBA 661 Strategic Human Resources 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 Emiratization and diversity issues, talent management, the role of HR in merger and acquisitions, and high commitment practices. Prerequisite: MBA 602.

MBA 662 International Human Resources 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. Prerequisite: MBA 602.

MBA 663 Staffing (3-0-3). Aims 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. Prerequisite: MBA 602.

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. Prerequisite: MBA 602.

MBA 670 Management Consulting (3-0-3). Explores the theoretical and analytical foundations of management consulting practice. Develops the 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. Covers common consulting tools, technologies and techniques used for problem identification and process analysis, quality management, team building, etc. Prerequisites: MBA 602 and MBA 608.

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 604.

MBA 690 Global Consulting Practicum (0-9-3). Provides the opportunity to participate in a consulting engagement under the direction of SBA faculty. Requires the completion of a 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. Prerequisites: MBA 602, MBA 670 and approval of the MBA program director.

MBA 697 Business Co-op (3-0-3). Provides opportunities for application of theory to actual problems in real-life business settings. Enhances research, writing, technical, presentation and soft skills through practical experience. Reinforces objective-setting and performance measurement through a structured reporting process. Requires a minimum of one semester of on-the-job experience with an approved sponsor organization. Graded as Pass/No Pass. Restricted to MBA and MSA programs, excluding Pre-MBA students. Prerequisites: good standing and the permission of the SBA Graduate 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 credit hours). An existing course 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.

To be eligible to apply for an independent course, students must be in good academic standing.

Directed Study (1 to 4 credit hours). An investigation under faculty supervision beyond the scope of existing courses.

Directed study courses are numbered as 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).

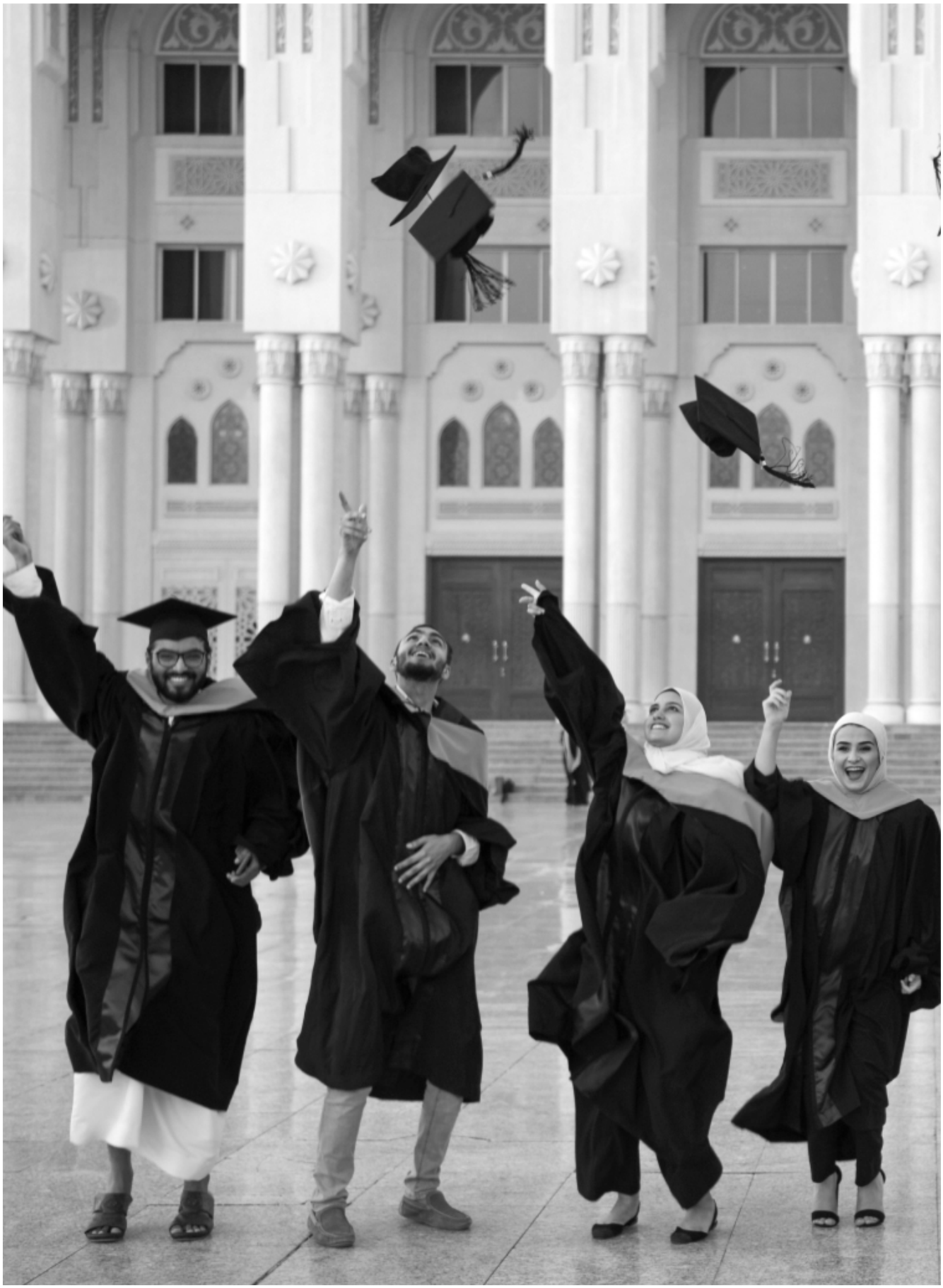
For further details on independent study, please refer to Registration in Independent Study Courses in the Academic Policies and Regulations section of this catalog.

Special Topic Courses

Special Topic (1 to 4 credit hours). 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 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 school during registration.



Full-Time Faculty

A

Abdalla, Jamaleldin, PhD, University of California at Berkeley, 1989; Professor in Civil Engineering and Riad T. Sadek Chair 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; Professor in Civil Engineering

Abdelgawad, Mohamed, PhD, University of Toronto, 2009; Associate Professor in Mechanical Engineering

Abdel-Hafez, Mamoun, PhD, University of California at Los Angeles, 2003; Professor in Mechanical Engineering and Head, Department of Mechanical Engineering

Abdel-Jabbar, Nabil, PhD, University of Michigan, 1996; Professor in Chemical Engineering

Abdel Naby, Shahin, PhD, Western Michigan University, 2010; Assistant Professor in Physics

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; Professor in Civil Engineering

Abouelnasr, Dana, PhD, Georgia Institute of Technology, 1984; Professor in Chemical Engineering

Abouleish, Mohamed Yehia, PhD, Tennessee Technological University, 2003; Associate Professor in Biology, Chemistry and Environmental Sciences

Abu Al-Foul, Bassam, PhD, University of Utah, 1994; 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; Professor in Civil Engineering

Abu-Nabah, Bassam, PhD, University of Cincinnati, 2007; Associate Professor in Mechanical Engineering

Abu-Rukba, Ra'afat, PhD, Western University, 2013; Assistant Professor in Computer Science and Engineering

Abusalim, Alaanoud, MA, Southern Illinois University, Carbondale, 2006; Senior Instructor in Writing Studies

Abu-Yousef, Imad, PhD, McGill University, 1996; Professor in Biology, Chemistry and Environmental Sciences

Abuzaid, Wael, PhD, University of Illinois, 2012; Assistant Professor in Mechanical Engineering

Acquaye, Adolf, PhD, Dublin Institute of Technology, 2010; Visiting Associate Professor in Industrial Engineering

Aghasi, Maya, PhD, University of Wisconsin Madison, 2012; Assistant Professor in English

Aguir, Iness, PhD, University of Texas at San Antonio, 2013; Assistant Professor in Finance

Ahmad, Irtishad, PhD, University of Cincinnati, 1998; Professor and Head, Department of Civil Engineering

Ahmad, Norita, PhD, Renssealaer, 2001; Associate Professor in Marketing and Information Systems (on sabbatical Fall 2019)

Ahmed, Khawlah, PhD, State University of New York at Buffalo, 1998; Professor in English

Ahmed, Mohammad, PhD, McMaster University, 2008; Visiting Assistant Professor in Mechanical Engineering

Ahmed, Rana, PhD, Duke University, 1991; Professor in Computer Science and Engineering (on leave Academic Year 2019–2020)

Ajsic, Adnan, PhD, Northern Arizona University, 2015; Assistant Professor in English

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; Professor in Chemical Engineering and Interim Head, Department of Chemical Engineering

Al-Assadi, Wesam, MA, American University of Sharjah, 2004; Instructor in Arabic and Translation Studies

Al-Attar, Mariam, PhD, University of Leeds, 2008; Lecturer in Arabic and Translation Studies

Albasha, Lutfi, PhD, University of Leeds, 1995; Professor in Electrical Engineering

AlHamaydeh, Mohamed, PhD, University of Southern California, 2005; Professor in Civil Engineering

Al-Huniti, Naser, PhD, University of Cincinnati, 1996; Visiting Professor in Mechanical Engineering

Ali, Ahmed, PhD, University of Durham, 1999; Associate Professor in Arabic and Translation Studies

Ali, Tarig, PhD, The 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-Khader, Maen, PhD, Illinois Institute of Technology, 2008; Associate Professor in Mechanical Engineering

Al-Khazali, Osamah, PhD, University of Memphis, 1997; Professor in Finance (on sabbatical Fall 2019)

Al-Kofahi, Osameh, PhD, Iowa State University, 2009; Visiting Assistant Professor in Computer Science and Engineering

Al-Najjar, Abeer, PhD, University of Edinburgh, 2003; Associate Professor in Mass Communication

Alnaser, Ali Sami, PhD, Western Michigan University, 2002; Professor in Physics; Head, Department of Physics

Al-Nashash, Hasan, PhD, Kent University, 1988; Professor in Electrical Engineering

Alobaidi, Ghada, PhD, University of Western Ontario, 2000; Associate Professor in Mathematics and Statistics

Al-Othman, Amani, PhD, University of Ottawa, 2012; Associate Professor in Chemical Engineering

Aloul, Fadi, PhD, University of Michigan, 2003; Professor in Computer Science and Engineering; Head, Department of Computer Science and Engineering; HP Institute Director

Al-Sayah, Mohamed, PhD, University of Alberta, 2002; Professor in Biology, Chemistry and Environmental Sciences

Al Shaar, Nuha, PhD, University of Cambridge, 2010; Associate Professor in Arabic and Translation Studies (on leave Fall 2019)

Alshraideh, Hussam, PhD, The Pennsylvania State University, 2011; Associate Professor in Industrial Engineering

Al-Tamimi, Adil, PhD, Strathclyde University, 1990; Professor in Civil Engineering

Alzaatreh, Ayman, PhD, Central Michigan University, 2011; Associate Professor in Mathematics and Statistics

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

Angell, Linda, DBA, Boston University, 1996; Director, International Exchange Office

Anwar, Somia, MBA, American University of Sharjah, 2004; Visiting Instructor in Management

Aqeel, Mohammed Taher, MA, Jawaharlal Nehru and Delhi University, 1993; Instructor in Civil Engineering

Arenfeldt, Pernille, PhD, European University Institute, 2006; Associate Professor in International Studies (on leave Fall 2019)

Arzaghi, Mohammad, PhD, Brown University, 2005; Associate Professor in Economics

As'ad, Rami, PhD, Concordia University, 2011; Assistant Professor in Industrial Engineering

Asa'd, Randa, PhD, University of Cincinnati, 2012; Assistant Professor in Physics (on sabbatical Spring 2020)

Ashill, Nicholas, PhD, University of Bradford, 2004; Professor in Marketing and Information Systems

Aslan, Neslihan, MA, Bosphorus University, 2006; Instructor in Writing Studies

Atabay, Serter, PhD, University of Birmingham, 2001; Professor in Civil Engineering

Attom, Mousa, PhD, Kansas State University, 1989; Professor in Civil Engineering

Audi, Diana, MS, American University of Beirut, 2005; Senior Instructor in Mathematics and Statistics

Aveyard, Mark, PhD, Florida State University, 2007; Associate Professor in International Studies

Awad, Mahmoud, PhD, Wayne State University, 2005; Professor in Industrial Engineering

Awadallah, Faisal, PhD, University of Maryland, 1987; Visiting Professor in Civil Engineering

Ayish, Mohammad, PhD, University of Minnesota, 1986; Professor in Mass Communication and Head, Department of Mass Communication

B

Badawi, Ayman, PhD, University of North Texas, 1993; Professor in Mathematics and Statistics

Badran, Sammy, PhD, University of Kansas, 2018; Assistant Professor in International Studies

Bae, Sun-Hee, PhD, Harvard University, 2015; Assistant 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, Cynthia, MBA, Texas Tech University, 1997; Senior Instructor in Management

Baker, Jeffrey, PhD, Texas Tech University, 2008; Professor in Marketing and Information Systems; Faculty Advisor, Student Council

Barlas, Gerassimos, PhD, National Technical University, Athens, 1996; Professor in Computer Science and Engineering (on sabbatical Fall 2019)

Bartholomew, Aaron, PhD, College of William and Mary, 2001; Professor in Biology, Chemistry and Environmental Sciences

Basco, Rodrigo, PhD**,** Universidad Complutense de Madrid, 2005; Associate Professor of Management and Sheikh Saoud bin Khalid bin Khalid Al-Qassimi Chair in Family Business

Beamer, Rebecca, MFA, University of Alabama, 2016; Assistant Professor in Art and Design

Beheiry, Salwa, PhD, University of Texas at Austin, 2005; Associate Professor in Civil Engineering

Bejarano Rodriguez, Ivonne, PhD, University of Puerto Rico, 2013; Assistant Professor in Biology, Chemistry and Environmental Sciences

Bejtic, Zinka, PhD, International University of Sarajevo, 2018; Associate Professor in Art and Design; and Associate Dean, College of Architecture, Art and Design

Belhamadia, Youssef, PhD, Laval University, 2004; Associate Professor in Mathematics and Statistics

Belkhodja, Omar, PhD, Laval University, 2006; Associate Professor in Management

Benati, Alessandro, PhD, University of Greenwich, 1999; Professor in English and Head, Department of English

BenDaya, Mohamed, PhD, Georgia Tech USA, 1998; Professor in Industrial Engineering and Director, ESM MS and PhD Programs

Bennett, Haydn, PhD, Strathclyde University, 2002; Visiting Associate Professor in Management

Best, Kathryn, MA, Kingston University, 2005; Associate Professor in Art and Design

Bilikozen, Neslihan, PhD, University of Exeter, 2016; Assistant Professor in Writing Studies

Bodolica, Virginia, PhD, HEC Montreal Business School, 2006; Professor in Management and Said T. Khoury Chair in Leadership Studies

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; Head, Department of Finance; Bank of Sharjah Chair in Finance and Acting Dean, School of Business Administration

Bou-Mehdi, Randa, MA, American University of Sharjah, 2010; Senior Instructor in Writing Studies

Breslow, Harris, PhD, University of Illinois, Champaign-Urbana, 1995; Associate Professor in Mass Communication

Brodtkorb, Tor, LLM, University of Leicester, 2008; Assistant Professor in Management

Buck, Rachel, PhD, University of Arizona, 2018; Assistant Professor in Writing Studies

C

Cadaret, Elizabeth, MFA, University of Florida, 1989, Visiting Associate Professor in Performing Arts

Carlow, Jason, MArch, Yale University, 2002; Associate Professor in Architecture

Castillo Melo, Roberto, PhD, University of Kansas, 2015; Assistant Professor in Architecture

Cerro, Camilo, MArch, Columbia University, 1997; Assistant Professor in Architecture

Chan, Stephen, PhD, University of Manchester, 2016; Assistant Professor in Mathematics and Statistics

Chathoth, Prakash, PhD, Virginia Polytechnic Institute and State University, 2002; 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

Chiozza, Giacomo, PhD, Duke University, 2004; Associate Professor in Political Studies and Sir Easa Saleh Al Gurg Professor in International Studies

Christodoulides, Georgios, PhD, University of Birmingham, 2016; Professor in Marketing and Information Systems and Chalhoub Professor in Luxury Brand Management

Cobo-Reyes Cano, Ramon, PhD, University of Granada, 2006; Associate Professor in Economics

Conty, Arianne, PhD, University of California, 2009; Associate Professor in International Studies

Craven, Laurence, MA, Oxford Brookes University, 2009; Senior Lecturer in Writing Studies

Curabba, Brad, MAT, SIT Graduate Institute, 2006; Senior Instructor in Writing Studies

Curiel, Igor, PhD, Kumamoto University, 1989; Professor of Practice in Architecture

D

Daghfous, Abdelkader, PhD, Pennsylvania State University, 1997; Professor in Marketing and Information Systems

Dahdal, Suheil, PhD, University of Technology, Sydney, 2000; Instructor in Mass Communication

Dalibalta, Sarah, PhD, University of Leicester, 2008; Associate Professor in Biology, Chemistry and Environmental Sciences

Darayseh, Musa, PhD, University of Nebraska-Lincoln, 1990; Professor in Accounting

Darras, Basil, PhD, University of Kentucky, 2008; Associate Professor in Mechanical Engineering

Darwish, Naif, PhD, Oklahoma State University, 1991; Professor in Chemical

Engineering and Acting Dean, College of Engineering

Dhaouadi, Rached, PhD, University of Minnesota, 1990; Professor in Electrical Engineering and Petrofac Research Chair in Renewable Energy

Dhou, Salam, PhD, Virginia Commonwealth University, 2013; Assistant Professor in Computer Engineering

Dougan, Brian, MArch, Texas A&M University, 1989; Professor in Architecture

Dupuis, Daniel, PhD Concordia University 2014; Assistant Professor in Finance

E

Egilmez, Mehmet, PhD, University of Alberta, 2009; Associate Professor in Physics

El-Assadi, Ahmad, MBA, American University of Sharjah, 2009; Senior Instructor in Management

El Bakhour, Hoda, MA, American University of Beirut, 2010; Instructor in Writing Studies

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; Professor in Computer Science and Engineering

El-Kadri, Oussama, PhD, Wayne State University, 2006; Professor in Biology, Chemistry and Environmental Sciences

El-Khatib, Sami, PhD, New Mexico State University, 2007; Associate Professor in Physics

Enache, Cristian, PhD, Laval University, 2005; Assistant Professor in Mathematics and Statistics

El-Sakran, Tharwat, PhD, University of Bangor, 1990; Professor in English

El-Sayed, Yehya, PhD, City University of New York, 2006; Associate Professor in Biology, Chemistry and Environmental Sciences

El-Sayegh, Sameh, PhD, Texas A&M University, 1998; Professor in Civil Engineering

El-Tarhuni, Mohamed, PhD, Carleton University, 1997; Professor in Electrical Engineering; Vice Provost of Graduate Studies

Emam, Samir, PhD, Virginia Polytechnic Institute and State University, 2002; Professor in Mechanical Engineering

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 and MATI Program Academic Coordinator

Farhan, Sara, MA, University of Western Ontario, 2013; Assistant Professor in International Studies

Farr, Marcus, MArch, Rice University, 2004; Assistant Professor in Architecture

Fath, Hassan, PhD, McMaster University, 1981; Visiting Professor in Mechanical Engineering

Fattah, Kazi, PhD, University of British Columbia, 2010; Associate Professor in Civil Engineering (on sabbatical Fall 2019)

Fedtke, Jana, PhD, University of South Carolina, 2012; Assistant Professor in English

Filipović, Zlatan, MFA, Alfred University, 2001; Associate Professor in Art and Design

Formaneck, Steven, PhD, University of Waterloo, 2009; Assistant Professor in Marketing and Information Systems

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; Professor in Economics

Gaibulloev, Khusrav, PhD, University of Texas at Dallas, 2009; Associate Professor in Economics

Gally, Thomas, PhD, Texas A&M University, 1992; Senior Lecturer in Mechanical Engineering

Gandhi, Neena, PhD, University of Delhi, 2006; Associate Professor in Writing Studies

Gatenby, Bruce, PhD, University of Arizona, 1992; Assistant Professor in Writing Studies

Gavassa, Ana Milena, MBA, Troy University, 1999; Senior Instructor in Mass Communication

Gazley, Aaron, PhD, Victoria University, 2009; Associate Professor in Marketing

Genc, Ismail, PhD, Texas A&M University, 1999; Professor in Economics (on sabbatical Spring 2020)

Ghani, Usman, PhD, University of Exeter, 2013; Assistant Professor in Arabic and Translation Studies

Ghommem, Mehdi, PhD, Virginia Polytechnic Institute and State University, 2011; Assistant Professor in Mechanical Engineering

Ghunem, Refat, PhD, University of Waterloo, 2014; Visiting Assistant Professor in Electrical Engineering

Gibbs, Joseph, PhD, Boston University, 1994; Professor in Mass Communication

Giesen, Martin, PhD, Heidelberg University, 1973; Professor in Art and Design

Gleason, Kimberly, PhD, Southern Illinois University, 1999; Associate Professor in Finance

Gmeiner, Frederic, MA, University of the Arts Berlin, 2010, Assistant Professor in Art and Design

Golley, Nawar Al-Hassan, PhD, Nottingham University, 1994; Professor in English

Gouia Ep Zarrad, Rim, PhD, University of Texas at Arlington, 2011; Associate Professor in Mathematics and Statistics (on sabbatical Academic Year 2019–2020)

Gregersen, Tammy, PhD, Universidad Catolica de Valparaiso, 1998; Professor in English and TESOL Program Academic Coordinator

Griffin, James, PhD, University of London, 2004; Associate Professor in Mathematics and Statistics, and Associate Dean, College of Arts and Sciences

Gross, James, MFA, Wayne State University, 1994; Assistant Professor in Performing Arts

Guessoum, Nidhal, PhD, University of California at San Diego, 1988; Professor in Physics

Gunatillake, Gajath, PhD, Purdue University, 2005; Associate Professor in Mathematics and Statistics

Gunn, Cindy, PhD, University of Bath, 2001; Professor in English and Director, Faculty Development Center

H

Hallal, Hicham, PhD, McGill University, 2008; Lecturer in Computer Science and Engineering

Hamade, Alaa, MBA, American University of Sharjah, 2010; Senior Instructor in Marketing and Information Systems

Hamdan, Mohammad, PhD, University of Cincinnati, 2003; Associate Professor in Mechanical Engineering

Hamdan, Nasser, PhD, Middle East Technical University, 1993; Professor in Physics (on sabbatical Fall 2019)

Hammi, Oualid, PhD, University of Calgary, 2009; Associate Professor in Electrical Engineering

Hariga, Moncer, PhD, Cornell University, 1989; Professor in Industrial Engineering; Head, Department of Industrial Engineering

Hassan, Mohamed, PhD, University of Arizona, 2005; Professor in Electrical Engineering

Hatim, Basil, PhD, University of Exeter, 1982; Professor in Arabic and Translation Studies

Hawa, Karen, CPA, Colorado State Board of Accountancy, 2005; Senior Instructor in Accounting

Hawileh, Rami, PhD, University of Wisconsin-Milwaukee, 2005; Professor in Civil Engineering

Heintz, W. Eirik, MArch, Harvard University, 1994; Professor in Architecture; Director, CAAD Foundations Year

Highland, Kristen, PhD, New York University, 2015; Assistant Professor in English

Honein, Natalie, PhD, University of Bristol, 2015; Visiting Assistant Professor in English

Hooper, Terrell, PhD, University of Georgia, 2015; New York University, Assistant Professor in English

Horger, Christopher, MA, University of Arizona, 1992; Senior Instructor in Writing Studies

Hossain, Mahmud, PhD, Baruch College, 2004; Associate Professor in Accounting

Hughes, Michael, MArch, Princeton University, 1993; Professor in Architecture

Husni, Ronak, PhD, University of St. Andrews, 1986; Professor in Arabic and Translation Studies

Husseini, Ghaleb, PhD, Brigham Young University, 2001; Professor in Chemical Engineering and Dana Gas Chair in Chemical Engineering

Hussein, Noha, PhD, Virginia Polytechnic Institute and State University, 2005; Associate Professor in Industrial Engineering

I

Ibahrine, Mohammed, PhD, Hamburg University, 2006; Associate Professor in Mass Communication (on sabbatical Fall 2019)

Ibrahim, Mahmoud, PhD, University of Mississippi, 2006; Associate Professor in Electrical Engineering

Ibrahim, Riem, MFA, The University of Chicago, 2013; Visiting Assistant Professor in Design

Ibrahim, Taleb, PhD, Auburn University, 1997; Professor in Chemical Engineering

Izwaini, Sattar, PhD, University of Manchester, 2004; Associate Professor in Arabic and Translation Studies

J

Jaidi, Asad Hasan, PhD, University of Kansas, 1993; Professor in Physics

Jaradat, Mohammad, PhD, Texas A&M University, 2005; Professor in Mechanical Engineering

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